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RECORDS OF NESTS, EGGS, NESTLINGS, AND CAVITY NESTING OF ENDEMIC PASSERINE BIRDS IN HAWAII

by J. Michael Scott, John L. Sincock and Andrew J. Berger

The breeding biology of most endemic passerine birds in Hawaii is poorly known. This is, in part, because of the relatively few field investigators, small populations, dense vegetation, and rugged terrain. Adverse weather conditions are another obstacle to field investigations because most nesting occurs from winter through early summer, when heavy rainfall inhibits access to remote mountain areas.

Many published references simply indicate nests, their contents and where they were located. Specific information is needed on nest placement, nest size, nesting materials, eggs, nestlings, nesting phenology, incubation periods, predation, reproductive success, kinds and sizes of trees in which nests occur, size of breeding territories, and the availability and use of cavities in different forest types before effective management can be undertaken.

The records of nests, eggs, and nestlings of 57 endemic Hawaiian passerine taxa (i.e. species and subspecies; 37 extant and 20 extinct) on eight islands are widely scattered in the literature. Several nests have been discovered since the last overview (Berger 1972). To draw attention to the inadequacy of nesting information for Hawaiian birds, stimulate further research, and provide easier access to the limited information available, we have summarized the present data in Table 1. In Hawaii, where more taxa are listed as endangered than in any comparable area in the world (U.S. Fish and Wildlife Service 1976), this information is of particular importance.

The status for each species in Table 1 is that determined by the U.S. Fish and Wildlife Service (1976), with the exception of the endangered status shown for the Oahu 'Ākepa (see Table 1 for scientific names), which was rediscovered in 1977 (Shallenberger *in* Ralph and Pyle 1977). Only those records of reproductive data where attendant adults or identifiable nestlings were observed are included in Table 1. The scientific nomenclature is that used in Pyle (1977) and Pratt (1979).

Table 2 summarizes the reproductive information available for unendangered, endangered and extinct taxa. Because of the three types of data possible (nest, eggs, nestlings) for each taxa, the total potential discoveries are three times the number in the category.

The nests of half of the species and subspecies of endemic passerine birds known from Hawaii have been found, and the nests of only 3 of 20 extinct taxa were discovered. Of the 37 extant endemic passerine taxa, the nest of 11, the eggs of 17, and the nestlings of 18 remain undescribed. Of 14 nonendangered extant taxa, the nest of 1 (Oahu 'Amakihi), the eggs of 2 (Oahu 'Amakihi, and "Maui-Molokai-Lanai" 'Amakihi), and the young of 2 (Oahu 'Amakihi, and Kauai 'Ākepa) have not been discovered.

Sixty-five of the 111 potential discoveries of nests, eggs, and nestlings for 37 extant species of subspecies of endemic passerine birds have been made, and 46 potential discoveries remain. Only 7 of 60 potential discoveries of nests, eggs, and nestlings for 20 extinct passerine birds were made in Hawaii.

The opportunities for discovery of undescribed nests, eggs, or young on each island are as follows: Kauai 16, Maui 15, Oahu 7, Hawaii 6, Molokai 5, Lanai 1 (Table 3)

Table 1

The status and distribution of passerine birds endemic to the Hawaiian Islands with records of their nests, eggs, and nestlings (+ = recorded; - = not recorded).

Species	Status[1]	Location	Nest	Egg	Nestling	Sources[4]
Hawaiian Crow *Corvus tropicus*	End.	Hawaii	+	+	+	21,31
Hawaiian Thrush *Phaeornis obscurus*						
P. o. myadestina	End.	Kauai	-	-	-	
P. o. oahensis	Ext.	Oahu	-	-	-	
P. o. rutha	End.	Molokai	+	-	-	22
P. o. lanaiensis	Ext.	Lanai	-	-	-	
P. o. obscurus		Hawaii	+	+[2]	+	5,7,22,37
Small Kauai Thrush *P. palmeri*	End.	Kauai	-	+[2]	-	7
Millerbird *Acrocephalus familiaris*						
A. f. familiaris	Ext.	Laysan	+	+	-	18
A. f. kingi	End.	Nihoa	+	+	+	19,29
'Elepaio *Chasiempis sandwichensis*						
C. s. sclateri		Kauai	+	+	+	3,4,20
C. s. gayi		Oahu	+	+	+	13,22
C. s. sandwichensis		Hawaii	+	+	+	4,13,22,36
Kauai 'Ō'ō *Moho braccatus*	End.	Kauai	+	-	+	28
Oahu 'Ō'ō *M. apicalis*	Ext.	Oahu	-	-	-	
Molokai 'Ō'ō *M. bishopi*	Ext.	Molokai	-	-	-	
Hawaii 'Ō'ō *M. nobilis*	Ext.	Hawaii	-	-	-	
Kioea *Chaetoptila angustipluma*	Ext.	Hawaii	-	-	-	
'Amakihi *Loxops virens*						
L. v. stejnegeri		Kauai	+	+	+	7,15
L. v. chloris		Oahu	-	-	-	
L. v. wilsoni		Maui-nui[5]	+	-	+	20
L. v. virens		Hawaii	+	+	+	3,7,10,24
'Anianiau *L. parvus*		Kauai	+	+	+	8,9
Greater 'Amakihi *L. sagittirostris*	Ext.	Hawaii	-	-	-	22[3]
Hawaiian Creeper *L. maculatus*						
L. m. bairdi		Kauai	+	+	+	16
L. m. maculatus	End.	Oahu	+	+	-	43
L. m. flammeus	End.	Molokai	+	-	-	11
L. m. montanus	Ext.	Lanai	-	-	-	
L. m. newtoni		Maui	+	+	+	12,32
L. m. mana	End.	Hawaii	+	-	-	25,35
'Ākepa *Loxops coccineus*						
L. c. caeruleirostris		Kauai	+	+	-	17
L. c. rufus	End.	Oahu	-	-	-	27
L. c. ochraceus	End.	Maui	+	-	-	22
L. c. coccineus	End.	Hawaii	+	+	+	30,38
Po'o-uli *Melamprosops phaesoma*	End.	Maui	-	-	-	
Kauai 'Akialoa *Hemignathus procerus*	End.	Kauai	-	-	-	
'Akialoa *H. obscurus*						
H. o. ellisianus	Ext.	Oahu	-	-	-	
H. o. lanaiensis	Ext.	Lanai	-	-	-	
H. o. obscurus	Ext.	Hawaii	+	-	+	22
Nuku-pu'u *H. lucidus*						
H. l. hanapepe	End.	Kauai	-	-	-	
H. l. lucidus	Ext.	Oahu	-	-	-	
H. l. affinus	End.	Maui	-	-	-	
'Akiapola'au *H. wilsoni*	End.	Hawaii	+	-	+	34,39,41
Maui Parrotbill *Pseudonestor xanthrophyrys*	End.	Maui	-	-	-	

Table 1 (continued)

Species	Status[1]	Location	Nest	Egg	Nestling	Sources[4]
'Ō'ū *Psittirostra psittacea*	End.	Kauai, Hawaii	-	-	-	
	Ext.	Oahu, Maui-nui[5]	-	-	-	
Hawaiian Finch *P. cantans*						
P. c. cantans	End.	Laysan	+	+	+	1,7,18,29
P. c. ultima	End.	Nihoa	+	+	+	7,23,29,40
Palila *P. bailleui*	End.	Hawaii	+	+	+	6,42
Greater Koa Finch *P. palmeri*	Ext.	Hawaii	-	-	-	
Lesser Koa Finch *P. flaviceps*	Ext.	Hawaii	-	-	-	
Grosbeak Finch *P. kona*	Ext.	Hawaii	-	-	-	
'Apapane *Himatione sanguinea*						
H. s. sanguinea		all six[6]	+	+	+	7,15,20, 21,24,33
H. s. freethi	Ext.	Laysan	+	+	+	14,18
Crested Honeycreeper *Palmeria dolei*	End.	Maui	-	-	-	
	Ext.	Molokai				
'Ula-'ai-hawane *Ciridops anna*	Ext.	Hawaii	-	-	-	
'I'iwi *Vestiaria coccinea*		all six[6]	+	+	+	2,7,11, 15,22,26
	Ext.	Lanai				
Black Mamo *Drepanis funerea*	Ext.	Molokai	-	-	-	
Mamo *D. pacifica*	Ext.	Hawaii	-	-	-	

[1] End. = Endangered; Ext. = Extinct

[2] Egg laid in captivity

[3] Perkins 1903 did not specify for which subspecies of Creeper he had found nests.

[4] Sources: (1) Bailey, 1956; (2) Baldwin, 1944; (3) Berger, 1969a; (4) Berger, 1969b; (5) Berger, 1969c; (6) Berger, 1970; (7) Berger, 1972; (8) Berger, et al., 1969; (9) Bryan and Seale, 1901; (10) Bryan, 1905b; (11) Bryan, 1908; (12) Casey, unpublished data; (13) Conant, 1977; (14) Dill and Bryan, 1912; (15) Eddinger, 1970; (16) Eddinger, 1972a; (17) Eddinger, 1972b; (18) Fisher, 1906; (19) Marshall, 1964; (20) Munro, 1944; (21) Perkins, 1893; (22) Perkins, 1903; (23) Richardson, 1954; (24) Rothschild, 1893-1900; (25) M. Scott, this publ.; (26) Seale, 1900; (27) Shallenberger *in* Ralph and Pyle, 1977; (28) J. Sincock, unpubl. manus.; (29) J.L. Sincock and E. Kridler, unpubl. manus.; (30) Sincock and Scott, in press; (31) Tomich, 1971; (32) van Riper, 1972; (33) van Riper, 1973a; (34) van Riper, 1973b; (35) Sakai and Ralph, 1980; (36) van Riper, 1977; (37) van Riper and Scott, 1979; (38) M. Collins, unpublished data; (39) H. Sakai, unpublished data; (40) Throp, 1970; (41) D. Breese, unpublished data; (42) van Riper, 1978; (43) Bryan, 1905a.

[5] "Maui-nui" = Maui, Lanai and Molokai

[6] All six main Hawaiian islands (Kauai, Oahu, Lanai, Molokai, Maui and Hawaii)

CAVITY NESTING

As used herein, cavities are as described by Pettingill (1970), "nest in caves, crevices, burrows, holes in trees or bird boxes with or without lining." Nests of five species (Kauai 'Ō'ō; Hawaii Creeper, *Loxops maculatus mana*; Hawaii 'Ākepa, *L.c. coccineus*; Hawaii Thrush, *Phaeornis o. obscurus*; and 'Akiapola'au) have been found in tree cavities; nests of three (Laysan Finch, *Psittirostra c. cantans*; Nihoa Finch *P. c. ultima*; 'Apapane, *Himatione s. sanguinea*) have been found in rock cavities.

Insufficient nest records exist to determine the regularity of cavity nesting except for the Nihoa Finch, which nests principally in rock cavities (Sincock and

Kridler MS). Most nests of the Laysan Finch are in grass tussocks. Although 'Apapane nests have been found in rock-type cavities (van Riper 1973a), they typically nest in the top-most branches of trees (Berger 1972, Eddinger 1970).

Considering the high rainfall in Hawaii (over 15.0 meters per year in some forests) tree cavity nesting would seem to be a reasonable tactic to improve reproductive success. Perkins (1893) suspected that the Hawaii 'Ō'ō built its nest in tree cavities; two of his assistants saw an 'Ō'ō enter a hole, but they were unable to climb the tree to confirm their suspicions.

The first known nest of the Kauai 'Ō'ō was found in a tree cavity in 1971 (Sincock MS); it was the first discovery of a tree cavity nest of a Hawaiian passerine. Sincock also found nests of the 'Ō'ō in 1972 and 1973, both in tree cavities.

The first cavity nest of a Hawaiian honeycreeper was found by Scott on 8 February 1975 when he observed a pair of creepers on Hawaii carry nesting material to a nest situated between the loose bark and trunk of a dead koa tree (*Acacia koa*). The inacessible nest was 11 m up a 23 m snag; it was abandoned 3 days after its discovery. The location was at 1680 m in the Kilauea Forest Reserve in a closed canopy, tall (< 10 m) 'ohia-(*Metrosideros collina*)-koa forest with a tree fern (*Cibotium sp.*) understory.

Table 2

Summary of knowledge of reproductive data of endemic Hawaiian passerine birds by the present status of the various taxa (both species and subspecies), and the percent of each ( ).

Status of taxa	No. of taxa	Discoveries			Discov. Made	Poten. Discov.
		Nest	Egg	Nestl.		
All	57	29 (50.9)	22 (38.6)	22 (38.6)	73 (42.7)	171
Extant	37	26 (70.3)	20 (54.1)	19 (51.4)	65 (58.6)	111
Endanger.	23	13 (56.5)	8 (34.8)	8 (34.8)	29 (42.0)	69
Non-endan.	14	13 (92.9)	12 (85.7)	12 (85.7)	37 (88.1)	42
Extinct	20	3 (15.0)	2 (10.0)	2 (10.0)	7 (11.7)	60

The first known nest of the Hawaii 'Ākepa was found in a tree cavity by Sincock in 1976 (Sincock and Scott in press).

The first nests of the Hawaiian Thrush on the Island of Hawaii for which detailed locations are available were open structures in the top or side of a tree fern (Berger 1969c, 1972). During intensive surveys of birds in the Ka'u and Hamakua Forests on that island in the summers of 1976 and 1977, van Riper and Scott (1979) reported five active thrush nests either in tree cavities or on a protected platform.

Table 3

Summary by island of undiscovered reproductive data of endemic Hawaiian passerine birds by taxa[1].

	Kauai	Maui	Oahu	Hawaii	Molokai	Lanai	Laysan	Nihoa
Original Number[2]	13	10	11	20	9	7	3	2
Extant	13	9	6	11	5	2	1	2
Extinct[3]	0	0	4	9	2	3	2	0
Extirpated[4]	0	1	1	0	2	2	0	0
Endangered	6	5	2	6	2	0	1	2
Non-endangered	7	4	4	5	3	2	0	0
Undiscovered reproductive data of extant taxa								
Nests	5	4	2	1	0	0	0	0
Eggs	5	6	2	3	3	1	0	0
Nestlings	6	5	3	2	2	0	0	0
total	16	15	7	6	5	1	0	0

[1]Totals are not additive for State-wide summary, because of multi-island use of certain species and subspecies.

[2]Number of taxa collected on island, not including fossil forms; an 'Ō'ō was reported on Maui, but was never collected.

[3]Full species or subspecies is extinct.

[4]Species or subspecies no longer found on previously occupied island but exists on at least one island.

DISCUSSION

There are many threats to Hawaiian birds. The increasing demands of industrial, agricultural, and residential uses of native bird habitats, as well as proposed reforestation projects using exotic species, threaten to further reduce the limited area suitable for native birds. The introduction of exotic plants and animals has greatly disturbed the relationships among native organisms, and has severely modified native ecosystems (Berger 1972, Atkinson 1977). Exotic diseases are thought to have had a significant impact on the native birds (Warner 1968). Defoliation of over 80,000 ha. of ohia forest on Hawaii (Petteys et al. 1975) has reduced the suitability of this area for many native birds. The reasons for the "die-back" are still poorly understood. However, it is believed that it is cyclic and natural in its occurrence. All of these factors dictate that we soon learn as much as possible about the behavior, reproductive success, and habitat preferences of the native birds. The frequency of cavity nesting and its management implications must be determined. Once we have identified where and how these birds nest, we may be able to use artificial nesting structure, habitat modification, and better identification and protection of preferred habitats to ensure their survival.

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RED-CRESTED CARDINAL ON LANAI

by Lawrence T. Hirai

The Red-crested Cardinal (*Paroaria coronata*) is native to South America and was first released in the state on Oahu in 1928 (Berger 1972. Hawaiian Birdlife. University Press of Hawaii, Honolulu). I know of no reported sightings of the species on the island of Lanai. In 1976 I recorded Red-crested Cardinals along the southern coast of Lanai, at Manele-Hulopoe harbor and beach facilities and scattered brackish pools in the Naha area. No road directly connects these two locations.

I observed a single Red-crested Cardinal near the Manele-Hulopoe restrooms on 12 May and 14 July 1976. Also, I saw a cardinal at or near Naha on 26 May, 16 July, and 29 October 1976. The cardinals were in adult plumage and perched on kiawe trees. In the July sighting at Naha the bird sang a brief song. I probably saw different individuals at the two locations, although I may have noted the same cardinal on the two occasions at Manele-Hulopoe and on the three at Naha.

I felt at the time that the observations indicated that the Red-crested Cardinal was in the early stages of establishing a population on Lanai. Apparently this has not occurred because I did not find this cardinal at Manele-Hulopoe when I searched the area on 14 July 1978 and 7 March, 4 May, and 22 August 1979, and at Naha when I checked on 24 August 1979. However, it may still become established on Lanai because of its demonstrated ability to reach the island.

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Red-crested Cardinal.

Photo by Robert J. Shallenberger

JAPANESE BUSH WARBLER ON LANA'I

by Patrick Conant

The Japanese Bush Warbler(*Cettia diphone*) is apparently extending its range east from O'ahu in the state, and channels between islands seem to be only temporary barriers to this movement. L. Pyle (1979: *'Elepaio* 40: 27) first reported hearing the bush warbler in Pelekunu Valley, Moloka'i in May 1979. However, she noted that Bertrand mentioned hearing the bird in Kahananui Gulch on Moloka'i in April 1979.

On April 4 and again on April 8, 1980, I heard the "long low note" of this bird in upper Hauola Gulch on Lāna'i at approximately 915 m (3000 ft) elevation. On both mornings I was hiking down the Hauola East Trail and stopped at an overlook of the back of the Gulch. I only heard the call a few times on both occasions because I didn't stop long at the overlook. The call was unmistakeable to me because I grew up on O'ahu and have noted its spread in the Ko'olau Mountains over the years. I did not see any of these birds, and I have no reason to believe I heard more than one bird. It sounded as though it was across the Gulch, below the Hauola North Trail on the opposite ridge (approximately 460 m or 500 yds away). If there are more than one of these cryptic songbirds, or if more arrive at a later date, perhaps Lāna'i will have a permanent addition to its small forest avifauna.

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BIG ISLAND OBSERVATIONS

by Mark Thomas

While on a Hawaii Bound course on the Island of Hawaii from August 20 to September 12, 1979, I had the opportunity to see a wide variety of fauna and flora unique to that island. During the 24 days there, we went through 4 environments -- the Kohalas, Kona Coast, Ka'u Desert and Mauna Loa -- all of which offered an opportunity to examine its great diversity.

The rainforest of the Kohalas supports both endemic and exotic life, but, regretfully, it is being overcome by the latter, for the thimbleberry with its thorny branches and the tasty strawberry guavas are in abundance upon the trails of Pololu and Honokane Nui Valleys, as is *Clidemia* in O'ahu Island. The 'ohi'a lehua in its crimson, orange and yellow flowers seems to be holding its own, despite the introduced species mentioned above and others.

As for the avifauna, several 'Io or Hawaiian Hawks were seen throughout the region from the grassy slopes of Niuli'i town to the shores of Honokane Iki. One late afternnnon by the forest border of Pololu, five were observed circling together and giving their cries as we watched from our camp site. An adult Pueo or Hawaiian Owl was sighted as it flew directly over us in the same valley. Most abundant, though are the Japanese White-eyes, Spotted Doves, Northern Cardinals, mynas, House Finches, Mockingbirds and the Melodious Laughing-thrush in that order. The 'Elepaio, 'Apapane and the 'Amakihi were the only endemic forest birds seen there. And in the stream of Honokane Nui, a lone Ulili or Wandering Tattler was found feeding on Opae or Mountain Shrimp and it was here that we decided to catch a few to eat ourselves.

When on the Kona Coast by historical Miloli'i, a land of recent lava flows and Keawe trees, cardinals, doves and mynas were the only land birds. Two Manu-O-Ku or White Terns roosting in a tree on Oea Beach and an 'Iwa or frigatebird were the only sea birds I encountered.

In the Footprints area and Kīpuka Nēnē of Ka'ū Desert of Hawaii Volcanoes National Park, 'Apapane and 'Amakihi were the most dominant, but less abundant, possibly due to the lack of 'ohi'a lehua blossoms. A Koa'e Kea or White-tailed Tropicbird circled low over our party on 3 occasions in the Mauna Iki area, offering inspiration as we embarked on an 8-mile hike across brittle pahoehoe lava, void of a trail. 'Ainahou yielded good sightings of Nene, for one morning we awoke to find 6 adults close to our camp and they were observed and heard throughout the 3 days there, as were cackling Erkel's Francolins. We saw evidence of the Park Service propagating Mamane plants in 'Ainahou and with the eradication of feral goats in that area, perhaps one day, with a little bit of *wishful* thinking, the Palila may spread out from Mauna Kea in the Park system.

The Mauna Loa Strip Road from Bird Park to the Mauna Loa trail head which leads to the summit supports the same honeycreepers as in Ka'u, but they are more numerous, perhaps because of its dense forests. We had the chance to hear 'I'iwi and 'Elepaio here, but were unable to see them. While on the trail to Pu'u Aweoweo, we encountered several honeycreepers feeding and flying about. On one occasion I observed a possible 'Akepa. It was about an hour to an hour and a half from the trail head shelter (at 6,662 ft.) and just before the larger 'ohi'a give way to the sparse pukiawe, kukae nēnē, and uki. The single orange bird (male) was sighted feeding on nectar within a small clump of 'ohi'a, with 'Apapane and 'Amakihi doing the same. The bird was no more than five yards from me in a tree perhaps twelve feet high, then it flew northeastward (right of Mauna Kea) across the path to the right and into another grouping of trees. The total time observed in the tree and in flight was approximately twenty to thirty seconds. In comparison to the 'Apapane feeding nearby, it was less bouncy and more direct in flight. It is *my* belief that this bird was indeed an 'Akepa, for it was a completely different color than any other bird I've seen on Hawai'i, O'ahu, and Kaua'i. Throughout all of the environments I encountered, Mauna Loa was truly the best place to see Hawaii's unique birds, providing one has the time.

Because the Big Island is still growing, and has less development than the other islands, it is my hope that it will continue to support endemic life. It is to our interest to help see that this continues.

As both a member of the Hawaii Audubon Society, and having been a part of that island as I grew up, I can see the possibilities in both environmental and ethnical conservation. For example, the preservation of the local farming community of Wai-ahole-Wai-kane Valleys on O'ahu.

Mauna Kea, Hawai'i Island.

Photo by Robert J. Shallenberger

However, while there and back on O'ahu, I have heard opposing views between the local(ethnic) hunter and mainland haole conservationist, concerning the contrast between legal and moral rights. As a local haole raised by a local (Hawaiian, Chinese, Filipino) family, this gives me some advantages to understand and mediate between the two concerned sides. It is my belief that we must continue to further understand and work together for what is best for all, including the Palila. Hunters have a right to feed their families or to enjoy their sport. Just as conservation organizations have the right to support a bird, or a tourist has the right to drive around the islands. It is not so much a matter of legal rights, as it is personal rights. Until the Palila was endangered, there was no law to fully protect the interest of this wonderful creature. Whether hunting for sheep on the slopes of Mauna Kea or just looking at birds or plants in a rain forest, both sides are enjoying the outdoors in their own way and are concerned with its continuing existence.

Perhaps some might think that their own side is just in its belief, but if it disrupts the other, how can that be? Let us not take sides, but come together, for human needs and desires must be respected first, then maybe we can concentrate on the endangered flora and fauna caught up in our differences.

B. P. Bishop Museum
Honolulu, Hawaii

ALOHA TO NEW MEMBERS

The Society welcomes the following new members and hopes that they will share our activities and help further the protection of Hawaii's native wildlife.

New Life Member: Ulalia Woodside, Waimanalo.

New Local (and Subscriber) Members: Jane F. Abernethy, Kaneohe; Edward A. Arrigoni, Honolulu; Kamanaiki Carey, Kailua; John L. Culliney, Waimanalo; Jaynie Estermann, Honolulu; Ruth Fraser, Haleiwa; Lynne M.P. Gale, South Orange, N.J.; Elizabeth Laing, Honolulu; Bruce & Judy Larsen, Ewa Beach; Jean I. Nishida, Honolulu; Joyce Nunokawa, Honolulu; Richard J. Scudder, Honolulu; Amy Sniffen, Kaneohe; Doreen Tsuruda, Honolulu; and Robert Zimmerman, Honolulu.

New Joint with National Members: S. D. Athens, Ponape, Caroline Islands; Dr. Robert Ballard, Honolulu; Mr. Knut Borg, Oerebro, Sweden; Mr. Rico Carrera, Honolulu; Olivia Chung, Kaunakakai; Laurie Dickson, Kaneohe; Douglas Higson, Kailua; Mrs. Ouida Hill, Honolulu; Mrs. G. Ikinaga, Pearl City; Kenneth R. Jillson, Honolulu; Cassandra A. Killion, Wailuku; M. Lau, Honolulu; Connie Maguire, Kailua; A. Manoharan, Honolulu; C. Mayo-Riley, Volcano; Alan M. McCray, Haleiwa; Marilynn C. Metz, Honolulu; Kathleen Pena, Kapaa; L. J. Phelps, Schofield Barracks; Deborah Pozin, Wailulu; D. Pritz, Mililani Town; Marjorie K. Sinton, Honolulu; C. W. Smith, Honolulu; James & Mutsuyo Unger, Honolulu; Dr. John N. Warner, Honolulu; and G. Yoshioka, Kula.

NOTE TO CONTRIBUTORS TO THE 'ELEPAIO

All contributions concerning natural history and conservation are welcomed, especially those pertaining to the Pacific area. The Editorial Committee wishes to encourage material from the Pacific Islands, such as the Trust Territory, Guam, American Samoa, and other areas. Articles on all natural history subjects are solicited.

It would facilitate the processing and review of your contribution if it could be submitted typewritten and double spaced, although this is not a requirement. All articles of a scientific nature are sent out for comments to at least two reviewers familiar with the subject.

To insure proper handling and rapid publishing of your contribution, it should be mailed to the Editor: C.J. Ralph, 3467 Alani Drive, Honolulu, HI 96822.

TYPISTS! TYPISTS! TYPISTS!

We need your nimble fingers to help create each month's *'Elepaio*. Come type in cool Manoa Valley on an IBM correcting selectric typewriter, whatever hours suit you. Get a preview of each month's issue!

Simply call Carol at 988-6921 to volunteer.

LEEWARD ISLANDS RESOLUTION

A joint resolution of the Survival Service Commission (SSC) and the Commission on National Parks and Protected Areas (CNPPA) passed at their meeting in San Jose, Costa Rica, 12-17 March 1979, is presented below. Both Commissions are part of the International Union for the Conservation of Nature (IUCN). This resolution should be of interest to 'Elepaio readers.

George Balazs

HAWAIIAN ISLANDS

RECOGNIZING that the small oceanic islands and atolls which comprise the Northwestern Hawaiian Islands consitute critical breeding and feeding areas for the endemic monk seal, numerous species of seabirds, three endemic land birds, and a population of green turtles;

RECALLING that most of these areas were declared a bird sanctuary in 1909 by the President of the United States, with the areas later being designated as the Hawaiian Islands National Wildlife Refuge;

REALIZING that the ecosystems of such oceanic island areas are particularly vulnerable to degradation and species extinction as a result of human instrusion;

BEING AWARE that consideration is presently being given to the development of various commercial fisheries in waters close to the Hawaiian Islands;

THEREFORE, BE IT RESOLVED that the joint meeting of the CNPPA/SSC request the Director General of the IUCN to transmit to the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the State of Hawaii an expression of support that the breeding and feeding areas of the wildlife species of the Northwestern Hawaiian Islands continue to be maintained in an undisturbed and protected state.

THANKS! THANKS! THANKS!

Along with this plea for new typists we want to issue a special thanks to Cissie Koenig, who has contributed hours and hours of her time to produce pages and pages of error-free typing over the last couple of years. We miss you, Cissie! But we wish you well in Colorado too.

Another friend of this typewriter is Marilyn Milberger, who helped immensely, both typing and pasting up. We hope she will be returning in the fall, but in case she doesn't,we'll say "Thanks!" right now.

PUBLICATIONS OF THE SOCIETY

HAWAII'S BIRDS by the Society (1978). This is the best field guide to our birds, and includes colored illustrations of all native and well-established exotic species. $3.25 plus postage: 48¢ (surface mail) or 67¢ (air). Hawaii residents only: add 13¢ for tax.

FIELD CHECKLIST OF BIRDS OF HAWAII by R. L. Pyle (1976). A pocket-size field card listing 125 species found in Hawaii with space for notes of field trips.
(Postpaid) . . . . . $ .25
(ten or more, 10¢ per copy)

GUIDE TO HAWAIIAN BIRDING by members of the Society and edited by C.J. Ralph (1977). Where to go and some idea of what you are likely to see. For the islands of Kauai, Oahu, Lanai, Molokai, Maui and Hawaii.
(Postpaid) . . . . . $ 1.00

PRELIMINARY LIST OF THE BIRDS OF HAWAII by R. L. Pyle (1977). An authoritative compilation of all species naturally occurring in Hawaii as well as those introduced by man which are currently established as viable populations. Gives each species' status.
(Postpaid) $1.00

ENDANGERED WATERBIRDS OF THE HAWAIIAN ISLANDS by R. J. Shallenberger (1978). Hawaiian Stilt, Coot, Gallinule and Duck, each described in 2 pages of photos and text. Covers description, ecology, status, and distribution.
(Postpaid) . . . . . $ .50

AUDUBON BOARD RAISES DUES FOR LOCAL MEMBERS

With great reluctance, and after more than a year's debate, the HAS board voted to raise dues to all classes of local members (This decision does not affect dues for joint members with National Audubon.) The last time the dues were raised was in 1962 (from $2). The $3 local dues now pays for only about half the cost of the *'Elepaio*, not to mention the other activities of the Society.

The new dues structure, for members in Hawaii who do not wish to join National Audubon, effective immediately for 1981, is as follows:

Regular	$6.00
Junior (18 and under)	3.00
Subscriber (non-Hawaii residents)	6.00
Life	150.00

Until September, Life Memberships only may be obtained at the old rate of $100.

Comments from members on the issue were evely divided. One member wrote supporting the increase ("long overdue"), and one other opposed it.

BACK ISSUES OF 'ELEPAIO AVAILABLE

Back issues of the *'Elepaio* may be ordered from the Society as follows:

Volume 35(July 1974) to present:

50¢ per issue, $5 per volume

Volumes 1 through 34:

$1 per issue, $10 per volume,
5 or more volumes: $8 per volume

Volumes 1 through 40(complete to date):

$300 ($7.50 per volume)

plus actual postage costs for shipping.

Large orders will be billed at time of shipment. Please indicate if you wish it sent by surface mail or by airmail.

FIELD TRIP TO MANANA TRAIL IN JUNE

Members will hike the Manana Trail above Pacific Palisades on June 8, meeting first at 7:30 a.m. on the Punchbowl Street side of the Downtown Branch of the Library. On last year's hike along this trail two unusual sightings were made: the Yellow-faced Grassquit and the Grey Swiftlet. Although both these birds are uncommon on the trail they are seldom seen elsewhere. Leader Omer Bussen (262-5506) was present when both species were seen last year. Maile Stemmermann (leave message at 948-8617) can also be called for information. The hike is warm and dry so bring plenty of water in addition to lunch. Members are asked to contribute toward gas expenses if they cannot provide their own transportation.

JUNE MEETING: CHRISTMAS IN JANUARY

Last January Dr. and Mrs. Robert Pyle went on the first of what is now an established tour arrangement for birders and fisherman to visit Kiritimati (Christmas Island) in the new Pacific Island country of Kiribati. On their seven-day trip, the Pyles observed about 17 bird species, as well as other plants and animals, many of which Dr. Pyle will discuss in his oolor slide presentation at 7:30 p.m. on June 16 at the McCully-Moiliili Library. Christmas Island is 1200 miles south of Hawai'i at 12° N latitude, and is the island for which the Christmas Shearwater is named.

HELP WANTED -- VOLUNTEERS

We need volunteers to help with a number of activities essential to the Society's programs. If you can give even a little time to any of the following interesting tasks, please call the contact indicated.

CONSERVATION COMMITTEE-- Members needed to follow one or two environmental issues (whales, Makiki Park development, or etc.), assist with preparing testimony and letters. Call Peter Galloway -- 947-4045.

TYPIST-- Help on the 'Elepaio a couple of hours a month. Call Carol Ralph -- 988-6921,

ACCOUNTANT-- Give consultation and guidance to Treasurer in organizing and maintaining the Society's financial bookkeeping. Call Norris Henthorne -- 734-7562.

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HAWAII AUDUBON SCHEDULE OF EVENTS

(For details, see inside back page)

June 8 (Sunday). Field trip to Manana Trail, Ko'olau Mts., Oahu. Meet at 7:30 a.m. at the State Library on Punchbowl St., bring food, water, and car, if possible.

June 9 (Monday). Board meeting at Dr. Robert Pyle's home, 741 N. Kalaheo, Kailua. 7 p.m. Open to all members.

June 16 (Monday). Regular meeting at the McCully-Moiliili Library, 7:30 p.m. Dr. Robert Pyle will speak on *Fabulous Christmas Island*. Everyone welcome.

HAWAII AUDUBON SOCIETY
P. O. Box 22832
HONOLULU, HAWAII 96822

ADDRESS CORRECTION REQUESTED

HAWAII AUDUBON SOCIETY