'ELEPAIO

Journal of the Hawaii Audubon Society

For the Protection of Hawaii's Native Wildlife

VOLUME 46, NUMBER 6

DECEMBER 1985

Jarvis, Howland and Baker Islands—A Bird's-Eye View

by Peggy Ferris

INTRODUCTION

Three tiny equatorial islands in the Central Pacific which are today important seabirds refuges have particular interest for the people of Hawaii because they were settled by then-recent graduates of Kamehameha Schools in a series of cruises which began with great secrecy in 1935. Now that the 50th anniversary year of this highly unusual project has arrived, it seems appropriate to assess some of the consequences of American possession of these islands, especially in terms of wildlife conservation.

HISTORICAL BACKGROUND

The three islands: Jarvis, Howland, and Baker, did not receive "refuge" status from the United States Department of the Interior until 1974. In 1935, the idea of providing protected habitats where seabirds could nest and rear their young was far from the minds of the men who planned the settlement project, judging from the documentary account by E.H. Bryan, Jr., *Panala'au Memoirs* (1974). The primary goal was to cinch America's claim to the islands so that they could be used in support of the fast-growing aviation industry. The Bureau of Air Commerce was particularly anxious to pre-empt British claims and head off British competition for the development of air routes between California and Australia. This was the reason for the secrecy of the project.

Altogether, five islands were included in the settlement program. Canton and Enderbury were added in 1938, but no longer fly the American flag. They are now under a new flag, which features a frigatebird flying above a rising sun—the flag of the new Republic of Kiribati, which became independent from Great Britain in 1978. "Kiribati" is the native rendering of "Gilberts", the English name of the main archipelago in the far-flung island nation. The capital, Tarawa, is familiar to Americans as the scene of one of the most hard-fought battles of World War II.

Under a 1979 Treaty of Friendship with Kiribati, the United States recognized the new nation's sovereignty over Canton and Enderbury as well as over twelve other islands previously in dispute between the British and Americans. The Treaty entered into force on September 27, 1983.

Today all small islands glitter with a new importance, thanks to the 200-mile offshore territorial limits which many nations, including the United States, have declared for fishing and other exclusive economic uses, such as seabed mining.

The Department of the Interior has by no means overlooked the possible importance of Jarvis, Howland, and Baker in possible future seabed mining activities. The three tiny islands, which have a combined land area of less than three square miles, are prominently represented in a glossy booklet published by the Department of the Interior pursuant to Proclamation 5030 of March 10, 1983. By this proclamation, Pres. Reagan established a 200-mile Exclusive Economic Zone (EEZ) for the United States, the Commonwealth of the Northern Mariana Islands (to the extent consistent with the Covenant and United States Trusteeship Agreement) and overseas territories and possessions. With their EEZ limits illustrated in yellow on a blue sea, Jarvis, Howland, and Baker are not just tiny dots on the booklet's Pacific map, but highly visible areas.

Coral islands rest on old volcanoes. Cobalt-rich manganese crusts may be deposited on the underwater flanks of such islands. Despite the exciting nature of the "New Frontier," exploitation of these resources is not likely to begin soon. Nevertheless, any prospects for mining activities on the flanks of the Refuge islands might merit attention of wildlife conservationists.

Christmas, Malden, and Starbuck, which are all Kiribati islands, have overlapping 200-mile zones with Jarvis. Canton, Enderbury, and McKean have overlapping 200-mile zones with Baker and Howland.

These interlacing boundaries indicate that American and Kiribati governments will be sharing many joint concerns.

The American government's concern with the five "Panala'au" (Hawaiian word for "colonizer") islands dates back to the guano operations of the 19th century. In the feverish rush to strip many tiny, uninhabited Central Pacific islands of this valuable fertilizer so generously provided by the seabirds, American claims often conflicted with British, and American companies competed with each other. Congress in 1856 passed the Guano Islands Act to "protect citizens of the United States who may discover deposits of Guano."

Canton, Enderbury, Jarvis, Howland, and Baker were all worked for guano by either British or American interests or both. However, guano operations had ceased on all five islands by 1927, the year Lindbergh made his solo flights to Paris.

The start of commercial aviation brought a new era, and prompted Washington to give certain key islands a definite American identity by occupying them. The task of organizing the operation was assigned to William P. Miller, Superintendent of Airways, Department of Commerce. The Coast Guard, the Navy and the Army all assisted in setting up the camps.

The colonists were mainly recruited from the ranks of Kamehameha School recent graduates, Hawaiian youths deemed suitable by interests, temperament, and training for sojourns on remote islands (Bryan 1974).

In all, 26 trips were made by Coast Guard cutters to the five islands between 1935 and 1948, when the spread of World War II in the Pacific brought an end to the operation (Ibid 23). About 134

young men, mostly between 19 and 26 years old, took part in the mission as settlers, including a few Army men, radio men, and other specialists. In general, they occupied an island in groups of five or more for varying lengths of time, on a rotation basis, as shown by a roster and record of "colonists" in Bryan's *Panala'au Memoirs* (1974).

SETTLEMENT HIGHLIGHTS

The Kamehameha colonists included a number of men who became well-known names in Hawaii, and several may have been influenced in their career choice by their settlement experience. One was Eugene Burke, who can recall periods of habitation on each of the three islands which are now bird refuges. He retired in 1977 as Chief of Law Enforcement for the Division of Fish and Game, State Department of Land and Natural Resources. Abraham Pi'ianaia, now Director of the Hawaiian Studies Program of the University of Hawaii, was on the initial secret cruise, which left Honolulu March 20, 1935, with six boys who weren't even told where they were going. The late George Nuuanu West, Sr., was one of the early settlers on Jarvis. A shipwrecked vessel, the *Amaranth,* offshore of the island, not only furnished colonists with materials for a number of camp projects, but also inspired young George to undertake some independent historical research. By the time of his death in 1977 he had achieved prominence as one of the rare Honolulu newspapermen of Hawaiian blood to surface in modern times. A career in public service awaited Jarvis settler Daniel Toomey, now retired from the Honolulu Police Department.

Once the camps were set up and the Polynesian presence well established, efforts to keep the settlement project a secret apparently relaxed, for the little colonies began receiving some national publicity and a stream of visitors, mostly high-ranking military men, government officials, and educators.

Two outstanding visitors were Harold Gatty and Dr. Francis Dana Coman. Gatty, an Australian, had become famous as the navigator on Wiley Post's around-the-world flight in 1931. Dr. Coman had been the medical director of the 1929-30 expedition to the Antarctic headed by Rear Admiral Richard Byrd.

Gatty and Dr. Coman, cruising on the chartered yacht, *Kinkajou,* were gathering data about the islands as possible way stations or emergency fields for aviators. Gatty later negotiated landing rights in New Zealand for Pan American's first commercial flights between Honolulu and "The Land of the Long White Cloud" (Robson 1957).

On November 28, 1935, these two celebrities spent a memorable Thanksgiving with four Kamehameha alumni on tiny, remote Baker, and supped on curried boobies.

"Everybody enjoyed it and was surprised to find it tasted so good," young Pi'ianaia noted in his journal. "That was something to be grateful for" (Bryan 1974).

Pi'ianaia recalls (pers. com.) escorting Gatty around Baker, and pointing out how the boobies, when disturbed, would sometimes regurgitate fresh-caught fish. Gatty later included this bit of useful information in a book he wrote for downed flyers and shipwrecked sailors (Gatty 1943). Titled *The Raft Book,* it was published as a survival aid for members of the American Armed forces; it emphasized direction-finding through the use of natural signs, such as birds, cloud formations and colors, seaweed, scents and other indicators. An astronomical chart, map and other navigational aids were included with the book.

In both *The Raft Book* and his later book, *Nature Is Your Guide,* Gatty suggests that birds might have provided the early Polynesians with clues to the existence of undiscovered lands (Gatty 1943: 7; 1958: 31-6). He cites the migration in September of the Long-tailed Cuckoo from tropical Polynesia to New Zealand, and that of the Golden Plover from Tahiti northward in the spring. This theory of Gatty's had its detractors, notably Andrew Sharp (1963); but there is far less scepticism today. The 1984 postage stamp commemorating the 25th anniversary of Hawaii's Statehood shows a Pacific Golden Plover flying ahead of a Polynesian voyaging canoe.

The colonists' journals, as excerpted here and there in *Panala'au Memoirs,* reveal a wide range of activities—shell collecting, weather data recording, bird life observation, fishing, vegetable gardening, and attempts to capture and burn as many rats as possible. It is believed that domestic cats brought in for rat abatement became the basis of a feral cat population on Jarvis (Rauzon 1983).

Lists of the birds, plants, mammals, reptiles, fishes and shells which the colonists encountered may be found in *Panala'au Memoirs.*

Howland's birds suffered a major setback in 1937. Amelia Earhart first announced that she was planning to leave Honolulu to fly around the world on an east-to-west route. To prepare for an expected early daytime landing on Howland, many large colonies of boobies and frigatebirds had to be removed for her expected path of approach and landing strip (Bryan 1974). Then came word that she had changed her departure time and would probably be landing in darkness, so several additional groups of birds had to be removed for her safety's sake. Cloth and fiber torches were prepared to light the scene. Next the Army officer in charge of field preparations received notification that a take-off accident had occurred in Honolulu and that the aviatrix was returning to the Mainland.

Her subsequent plans called for a west-to-east itinerary, starting from Miami. She flew as far as Lae, in New Guines, where she made her last take-off on July 1, 1937, bound for Howland. She never arrived. Her fate is still a matter of controversy and conjecture.

Sometime in the near future, an American aviatrix, Grace McGuire, may be flying the final Earhart flight plan in a duplicate of Miss Earhart's lockheed Electra. McGuire plans, as outlined in an interview by Lois Taylor for the *Honolulu Star-Bulletin* (11 January 1985: B-1), to fly the entire Earhart route, including the Lae-to-Miami portion that was not completed. However, the question of whether Grace McGuire will receive permission to land on Howland is still "up in the air", as the island today is for a different kind of flyer.

Canton and neighboring Enderbury islands were not included in the original settlement program, but were added in 1938. Canton came into the limelight of public attention in 1937, when both American and New Zealand expeditions chose it to view a total eclipse of the sun July 8. The huge central lagoon, which was ideal for seaplanes, and the flat rim suitable for land planes did not escape attention (Bryan 1974). British and American parties each posted signs asserting sovereignty of its respective nation.

Thus it was that when an American party of seven, including four Hawaiian colonists, landed on Canton on March 7, 1938, two British radio and weather men were on hand to greet them with, as the story goes, offers of beer (Ibid 33). Colonists placed on Enderbury found neither British nor beer, so soon set about banding birds. Both islands came under joint American-British administration under a treaty signed on April 6, 1939.

During 1938 and 1939, Pan American laid out and developed

an extensive airport, deepened and cleared the lagoon, and initiated flights to New Zealand using Canton as one of the ports of call (Ibid 198). It was in August, 1939, that Pan American Airways' *California Clipper* landed in Auckland, New Zealand, completing the first flight of a regular two-week service from San Francisco (Horvat 1966: 149).

As the threat of World War II approached, air strips were built on Canton, the entrance channel was enlarged, a roadway built and much of the surface covered by barracks, storehouses, camp sites and fortifications. These developments greatly interfered with the nesting sites of wild birds (Bryan 1974).

Canton was withdrawn from the settlement project on March 22, 1940. The Airport Manager became the Acting Field Representative of the Department of the Interior. Occupancy of Enderbury, Howland, Baker, and Jarvis continued until early in 1942, when all remaining colonists were removed under wartime conditions.

Two colonists on Howland, Joseph Keliihananui and Richard Whaley, were killed by Japanese fire on December 18, 1941. The mission that had begun so quietly ended in an explosion of violence.

THE BIRD REFUGES

Baker, Howland, and Jarvis have remained under the United States Department of the Interior since 1936, when jurisdiction was transferred to the Interior Department from the Department of Commerce.

It was with the urging of Eugene Kridler, then Wildlife Administrator for the Pacific Islands, that the U.S. Fish and Wildlife Service sought and obtained jurisdiction over the three islands and gave them Refuge status in 1974.

The birds of Baker were all but "backed off the map" during World War II, when their tiny island became the staging area for the Tarawa-Makin operation (Bryan 1974). Baker is, oval-shaped, only about a mile from east to west, and about 1,260 yards wide. Yet this small area once held 120 officers and 2,000 men. The original airstrip was enlarged to a bomber strip 5,750 feet long. The island was evacuated after the operation was completed.

Kridler (pers. comm. received 9 July 1985) visited all three islands in 1973 and prepared separate biological ascertainment reports. The report on Baker noted that recolonization had been taking place from Howland's bird population. A total of about 7,000 birds of six species was recorded at that time on Baker. Birds currently associated with each of the three Panala'au islands are listed in the U.S. Fish and Wildlife Service brochure titled "Pacific Islands National Wildlife Refuges."

Cat elimination on Jarvis has been one of the major accomplishments of the Fish and Wildlife Service since it received jurisdiction over the three islands. Colonists had found the Polynesian rat *(Rattus exulans)* very abundant on Jarvis. As previously noted, it is believed they brought in cats to fight this intrusive pest. In 1982 and 1983, Mark Rauzon was temporarily employed by the Honolulu Remote Wildlife Refuge office while engaged in the study and work which led to the production of his M.A. Thesis in Geography for the University of Hawaii, "Feral Cat Ecology and Eradication on Jarvis." After intensive planning and research, a many-pronged attack was launched which included trapping, shooting, introduction of disease (feline panleucopeia) and poison. Finally, the *Honolulu Star-Bulletin's* environmental writer, Harry Whitten, was able to report on 21 November, 1983, that Dr. Cameron Kepler, Wildlife Biologist, had spent five days on the island and couldn't find a single cat or evidence of cat predation.

Cats apparently did eliminate the rats on Jarvis, but a population of field mice *(Mus musculus)* persists (Rauzon 1983:3). Although the mice are herbivorous and hence not as directly threatening to the birds as the rats and cats were, the effects of the mice on vegetation makes them undesirable tenants in a bird habitation.

Feral cats were eliminated from Baker in 1964 by Pacific Ocean Biological Survey personnel, and no cats are believed there now. Any cats remaining on Howland since the recent drouth are targeted for early elimination.

Fish and Wildlife Service personnel see the remoteness of the three islands and the difficulties of arranging visits of sufficient length and frequency as probably the greatest problem encountered in their administration. Jarvis is 1300 miles south of Honolulu and Baker and Howland lie about 1600 miles southwest. Annual Coast Guard "sovereignty visits" offer the only chance for visitation that Wildlife Personnel can regularly count on.

Efforts are made to supplement these voyages by coordinating transportation with parties who have permits to visit the islands. For example, it was on a trip to Jarvis in 1983 with a party of "ham" radio operators that Dr. Kepler ascertained that there were no more cats on Jarvis (Whitten 1983).

Dick Wass (pers. comm. 16 November 1984), manager for the Remote Islands, has been seeking funds to inventory and estimate the cost of removing debris from the islands, such as shacks, rusty 50-gallon drums of unknown contents, and metal grating. These items are believed to have been left by the colonists, the military, or an International Geophysical Year team of scientists.

Despite handicaps of distance and limited budgets, the islands have been receiving a measure of conscientious attention. Although some problems remain with rodents and debris, there is reason to believe conditions on the islands will be gradually improved, and that they will continue to offer protection to important groups of migratory land birds and nesting seabirds.

SUMMARY AND CONCLUSIONS

Fifty years have now gone by since the Coast Guard Cutter *Itasca* set out with the first contingent of young men on a highly secret mission to settle certain islands selected as potentially useful for aviation. The islands never fully realized the role envisioned for them, as aviation quickly outgrew the need for the frequent stops. Canton and Enderbury are now part of a new nation, Hawaii's nearest foreign neighbor, Kiribati. Jarvis, Howland and Baker are now National Wildlife Refuges. A reunion of the dwindling number of veterans of the settlement experience has been under discussion, according to Eugene Burke (pers. comm. 15 August 1985), a past president of the now'dormant organization, "Hui Panala'au." Its membership roster consisted of the men who shared the dangers, discomforts—and occasional delights—of island-claiming for Uncle Sam.

Unfortunately, the settlement project's chief chronicler and custodian of memorabilia, Edwin H. Bryan, Jr., founder of the Pacific Scientific Information Center, will not be able to attend any anniversary get-together. He died July 24, 1985, at the age of 87. Donald Mitchell, retired Kamehameha School science teacher and author of Hawaiiana books, was one of several speakers at the August 3 memorial service for Bryan in the Bishop Museum courtyard. Mitchell recalled with pride the school's participation in Project Panala'au and praised Bryan's role, including his preparation of the documentary account, *Panala'au Memoirs.*

Prof. Pi'ianaia (pers. comm. 17 August 1985) hopes that the

ex-colonists' reunion will be an occasion to learn more about present conditions on Jarvis, Howland, and Baker and to consider ways they might assist the Fish and Wildlife Service, such as by arranging transportation or building support for bigger budgets.

"No group has been closer to those birds than the men who lived with them for weeks or months as colonists on the islands," he told me, adding that Hawaiians, as navigators and fishermen, feel a traditional affinity with birds.

In this Golden Anniversary Year of Project Panala'au, it is the seabirds who should be honored—for their beauty, scientific interest, and vital role in greening the habitats of man.

ACKNOWLEDGEMENTS

I would like to thank Dr. Sheila Conant, Chairman, General Science Department, University of Hawaii, and Abraham Pi'anaia, Director, Hawaiian Studies Program, University of Hawaii, for their help and encouragement with this paper. The original version was prepared for Dr. Conant's class in Terrestrial Ecosystems (SCI 360), Fall Semester, 1984.

My special thanks are also due to U.S. Fish and Wildlife personnel in the Honolulu office who generously assisted me: Jerry Leinecke, Refuge Manager, Hawaiian and Pacific National Wildlife Complex; Dick Wass, Refuge Manager for the Remote Islands; Stewart Fefer, Wildlife Biologist; Darcy Hu, Wildlife Biologist; and Valina Mann, Office Assistant.

LITERATURE CITED

Bryan, E.H., Jr., 1974. Panala'au Memoirs. Pacific Scientific Information Center, Bernice P. Bishop Museum, Honolulu.

Gatty, Harold, 1943. The Raft Book. George Grady Press, New York.

_____ 1958. Nature Is Your Guide. Collins, London and Sydney.

Horvat, William J., 1966. Above the Pacific. Aero Publishers, Inc., Fallbrook, California.

Kridler, Eugene, 1973. Wildlife Administrator, Kailua, Hawaii. "Baker Island Biological Ascertainment Report." Submitted to Regional Director, BSFW, Portland, Oregon, 25 June.

McGregor, Bonnie A. and Terry W. Offield, undated. The Exclusive Economic Zone: An Exciting New Frontier. The United States Department of the Interior Geological Survey, Washington.

Rauzon, Mark J., 1983. "Feral Cat Ecology and Eradication on Jarvis." M.A. Thesis in Geography, University of Hawaii, Honolulu.

Robson, R.W., 1957. "Late Harold Gatty's Remarkable Life." Pacific Islands Monthly, Sydney, March, pp. 151, 153.

Sharp, Andrew, 1963. Ancient Voyagers in the Pacific. Penguin Books, Harmondsworth, Middlesex, England.

Taylor, Lois. 1985. "No, She's NOT Amelia Earhart." Honolulu Star-Bulletin, 11 January, p. B-1.

United States Congress, 1856. "An Act to authorize Protection to be given citizens of the United States who might discover Deposits of Guano." (approved 18 August). Washington.

United States Department of the Interior Fish and Wildlife Service, undated. "Pacific Islands National Wildlife Refuges." Brochure.

Whitten, Harry, 1983. "Exploring China by Bicycle." Honolulu Star-Bulletin. 21 November, p. A-15.

1547 Ala Wai Blvd.
Apt. 318
Honolulu, Hawaii 96815

H-3 UPDATE

The construction industry is flooding Congress with telegrams of support for H-3. The purpose is to create the impression that H-3 has tremendous grass root support.

We must counter with a drive of our own. Write or send a telegram, but it must be there by December 2, 1985. It costs $4.45 to send a twenty word Western Union Opinion Gram. Call this toll-free number: 1-800-325-6000.

In the Senate contact: Senator Robert Stafford, 415 Hart Building, Washington, D.C. 20510. For the House, contact: Rep. James J. Howard, 131 CHOB, Washington, D.C. 20515. Also, call your Congressmen locally: 546-8997 (Cec Heftel), 546-8952 (Daniel Akaka), 546-7550 (Daniel Inouye), and 546-7555 (Spark Matsunaga).

If you send a telegramm just say "DON'T EXEMPT H-3". If you write a letter, also let them know you favor the transfer of funds to more cost effective transportation projects.

The following 2 Nov. 1985 letter from Hawaii Audubon Society President Dr. Conant was presented to the Subcommittee on Transportation of the Senate Committee on Environment and Public Works. Following the letter is a Statement from the National Audubon Society which was presented by Whitney Tilt on 6 Nov. 1985 to the same Subcommittee.

Dear Members,

It was with great surprise and dismay that the Hawaii Audubon Society learned our Sen. Inouye has acceded to Gov. Ariyoshi's request to promote the H-3 Freeway by extreme means.

Hawaii's Audubon Members, over 1000 strong, have been closely involved at each step of this vital public issue for over 15 years, and we will be extremely dismayed if the Congress removes the entire matter from the realm of federal law.

Cannot we depend on you to set and uphold national standards to measure highway projects? Hawaii's parks deserve the identical protections given to every other State!

If Congress suspends or even bends the rules for the H-3 "interstate" it will guarantee that our Governor's transportation engineers will never seriously and fairly evaluate the many more efficient, less damaging alternatives that the thoughtful opposition has proposed.

Because there are viable alterna-

tives, it is unnecessary to lose the Halawa Valley habitat for the Island's rarest native bird, the O'ahu Creeper *(Paroreomyza maculata)*.

Please disapprove Senate Bill 1796.

Thank you,
Dr. Sheila Conant,
President
Hawaii Audubon Society
(Affiliate of National Audubon Society)

(Editors' Note: the following is testimony presented by Mr. Whitney Tilt of the National Audubon Society.)

Mr. Chairman, distinguished members of the Senate Environment and Public Works Committee, Subcommittee on Transportation, I am Whitney Tilt of the National Audubon Society. I appear today on behalf of Audubon to urge the Transportation Subcommittee to review carefully the provisions of S. 1796, to consider the following comments in evaluating this legislation's impact on the Ho'omaluhia Park specifically, and the windward portion of the Island of Oahu in general. Audubon is a nationwide conservation organization of over one-half million members including the Hawaii Audubon Society which has over 1,400 members. High among Audubon's priorities are protection of open space for recreation and other human uses vital to our quality of living.

Audubon's comments on S. 1796 will be brief. There are numerous other witnesses who will tell the Committee about the long history and potentially environmentally devastating impacts of the proposed construction of Highway H-3 which will abut Oahu's only major interior park, and will traverse the spectacular North Halawa Valley with unknown impacts to the adjacent environment. We ask this Subcommittee to recognize also that the potential precedent of this bill goes far beyond the confines of constructing a single road adjacent to Ho'omaluhia Park on the Island of of Oahu in that it would exempt the project from all present and future (!) environmental laws. For this reason alone Audubon opposes S. 1796, the legislation that would authorize this project.

Before we give our substantive comments we would like to bring to the Committee's attention that the actual language of S. 1796 was not available to Audubon as of the writing of this testimony, and we only learned of this hearing last weekend. Even more important, insufficient notice was given to the affected residents of Oahu. As a result, they must rely upon representation of their interests by a congressional delegation that seems intent upon completing H-3 regardless of its socioeconomic and environmental impacts.

The matter of the routing of Interstate route H-3 has been determined by court of law. That decision on the merits should not be overturned by this Committee. The U.S. Court of Appeals, Ninth Circuit recently held that the routing of H-3 was a "constructive use" of a public park and, therefore, Section 4(f) of the Department of Transportation Act (DOTA) (49 U.S.C. § 1653) applies. As this Committee is well aware, Section 4(f) prevents the Secretary of Transportation from approving any project that requires the use of public park land unless there is "no feasible and prudent alternative". Its duty clearly defined by legal interpretation (*Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402 (1972)) and congressional mandate, the Ninth Circuit found federal and state highway agencies had failed to consider alternatives adequately. The Court remanded the case to the District Court and construction of the highway was enjoined until such time as the Secretary of Transportation can demonstrate compliance with § 4(f). Rather than comply with the court's ruling, federal and state transportation agencies have elected to seek a "legislative fix" that, in the words of one Honolulu editorial, is an admission from the state that they had lost the legal battle and can not "come up with the better justification for H-3 required by the courts" (*Sun Advertiser*, November 3, 1985).

S. 1796 states "notwithstanding any other provision of Federal law enacted heretofore or subsequently..." 10.7 miles of H-3 is to be completed. Audubon opposes any unwarranted exemption form existing federal laws -- our dismay grows when the exemption extends to laws that have not yet even been enacted. Not only does such an exemption create dangerous legislative precedent, but the particular application of the exemption to this situation assumes perfect knowledge of existing and future ecological and socioeconomic conditions, and further assumes that federal and state transportation officials are qualified to make these decision on behalf of the Hawaiian people, endangered species, and other resources at stake.

A review of H-3's record does not bear out such confidence. For example, how do proponents of H-3 reconcile the project's huge cost (a minimum of $386 million in 1979 dollars) against its limited benefits of alleviating its rush hour congestion on feeder routes and exit ramps? In addition, why is H-3 addressing increased vehicular capacity

in the opposite direction from that area designated in the Honolulu Master Plan as the target area for development, i.e., Ewa Beach area? Currently two roads traverse the mountainous plateau between the windward and leeward side of Oahu. Does the rural windward region need a third corridor cut through the North Halawa Valley to serve its limited growth projections, or would the improvement of one or both of the existing corridors serve the same purpose while reducing environmental damage and saving millions of dollars of highway funds that could be used elsewhere on the island? (This project looks like Hawaii's version of the late Westway project in New York.)

One of the laws from which this project would be exempt is the Endangered Species Act (ESA). An exemption from the ESA is unwarranted because there is an administrative procedure in the law which authorizes the granting of specific examptions where circumstances warrant. Therefore, there is no need to legislate a further exemption from that law for this project. Second, while the Ninth Circuit Court found that Federal Highway Administration's (FHWA) decision to rely on the U.S. Fish and Wildlife Service's (FWS) biological opinion that the highway's effect on the Oahu Creeper (*Paroreomyza maculata*) would not constitute a violation of § 7 of the ESA, it is clear that the Service's "no jeopardy" opinion was based on "weak" available information (*Stop H-3 Association v. Dole*, 21 ERC 1657 (1984)). Given the expressed lack of good biological data and the unique and fragile nature of Oahu's wildlife and scenic habitats, is the FHWA and this Committee willing to state for the record that all present and future impacts from H-3 have been considered and, therefore, all protective provisions of federal law should be exempted? Before you answer this question, may we remind you that these same natural resources form the basis for the island's important tourist trade. In addition, Hawaii stands to lose more than other mainland areas from careless development since, as a result of being an island, plants and animals have developed in isolation that are found nowhere else in the world. The fragile nature of these island ecosystems is illustrated by the fact that there are currently some 30 bird species, 12 plants, and more than a dozen invertebrates listed under the ESA, with numerous candidate species proposed for listing.

In the 1970's, opponents to the Tellico Dam failed to defeat the dam on economic grounds and its countless socio-economic impacts, so residents were forced to fight this project under the ESA with a three-inch fish, the snail darter. On refusing to grant Tellico an exemption from the ESA in 1978, Chairman of the Endangered Species Committee (the so-called "God Committee"), Cecil Andrus is quoted as saying, "I hate to see the snail darter get the credit for stopping a project that was ill-conceived and uneconomic in the first place." (Z. Platter, 1982, *Reflected in a River*, Tenn. L. Rev., 49(4):779). More recently, New York City's "Westway" would have cost billions while doing nothing for the city's aging and inadequate public transit system, yet the battle against Westway was waged over use of area by juvenile striped bass and the adequacy of the Corps of Engineer's EIS.

Today, we are again struck with a public works project's lack of utility, both in terms of cost/benefit and potential impacts to the environment. As with the case of the Tellico Dam and Westway, instead of assessing the benefits and utility of the project itself, we find ourselves evaluating impacts to state parks and endangered species. It continues to amaze us how these public works projects, "pork-barrels" in the jargon of the times, take on a life of their own, refusing to die even in the face of overwhelming evidence of their uselessness and lack of economic benefit--this with the economy staggering under a $200 billion annual deficit.

Congress directed agencies to comply with Section 7 consultations before "making an irreversible or irretrievable commitment of resources which would foreclose the consideration of modifications or alternatives" (16 U.S.C. §1536(d) (Supp. III 1979). In a sense §4(f) of DOTA seeks to offer the same protection for park lands that the Endangered Species Act extends to listed species. These two provisions should be applied to this project. More specifically, two alternatives are currently recognized to the proposed routing of H-3 along Ho'omaluhia Park border. Concerning FHWA's failure to consider the "Makai realignment" and the "No build" alternatives, the Ninth Circuit found:

> The record before us simply does not demonstrate that the stringent requirements of section 4(f), as defined in *Overton Park* and its progeny have been satisfied. Until those requirements are satisfied, we cannot allow our Nation's sacred parklands to be taken or used. (21 ERC 1655)

Clearly, the proposed alignment of H-3 triggers the non-discretionary provision of

(Continued on page 69)

Checklist of the Birds of Micronesia

Peter Pyle and John Engbring

For ornithologists visiting Micronesia, R.P. Owen's *Checklist of the Birds of Micronesia* (1977a) has proven a valuable reference for species occurrence among the widely scattered island groups. Since its publication, however, our knowledge of species distribution in Micronesia has been substantially augmented. Numerous species not recorded by Owen in Micronesia or within specific Micronesian island groups have since been reported, and the status of many other species has changed or become better known. This checklist is essentially an updated version of Owen (1977a), listing common and scientific names, and occurrence status and references for all species found in Micronesia as recorded from the island groups. Unlike Owen, who gives the status for each species only for Micronesia as a whole, we give it for each island group. The checklist is stored on a data base program on file with the U.S. Fish and Wildlife Service (USFWS) in Honolulu, and we encourage comments and new or additional information concerning its contents.

A total of 224 species are included, of which 85 currently breed in Micronesia, 3 have become extinct, and 12 have been introduced. Our criteria for species inclusion is either specimen, photograph, or adequately documented sight record by one or more observer. An additional 13 species (listed in brackets) are included as hypothetical (see below under status symbols). These are potentially occurring species for which reports exist that, in our opinion, fail to meet the above mentioned criteria.

The taxonomy and English and scientific names follow the American Ornithologist's Union (AOU) checklist (1983). When not included in the AOU checklist, we follow Slater (1972), King *et al.* (1975), Morony *et al.* (1975), Owen (1977a), and or Pratt *et al.* (1980). We have replaced the modifiers "Kusaie" and "Ponape" (Owen 1977a), with the now accepted, "Kosrae" and "Pohnpei." Order follows that of the AOU when possible. References used to place species not treated by the AOU include Morony *et al.* (1975), Owen (1977a), and King *et al.* (1975). Brackets surrounding the English name indicate that the species' occurrence is hypothetical in Micronesia as a whole. An asterisk (*) following the English name indicates that annotations concerning the species' taxonomic or occurrence status can be found following the checklist.

Micronesian island groups are as defined in Owen (1977a) except for the Mariana Islands, where the Northern Marianas and Guam are herein considered separate entities. We do not include the Gilbert Islands, Nauru, or Ocean Island, and the reader is referred to Owen (1977a) for checklists of these islands. Islands and island groups included are Wake, the Marshall Islands, Kosrae, Pohnpei, Truk, the Northern Mariana Islands, Guam, Yap, and Palau.

For each occurrence, a single-letter status symbol is followed by a two-letter reference code. Status is based primarily on the literature cited in our "occurrence references" (see below). Casey (1966), Coultas (1931), Engbring and Pyle (in prep), Fefer and Harrison (1982), and Fefer and Shallenberger (1982) provide additional status information. Definitions of status symbols are as follows:

R— Resident breeding, or presumed breeding species.

E— Extinct species, formerly resident.

I— Introduced residents. Certain populations may be semi-domestic. Species which are entirely domestic, such as Muscovy *(Cairina moschata),* and those which may have been established at one time but have since become extirpated, are not included. [Species in the latter category include Common Myna *(Acridotheres tristis)* in the Marshall Islands; House Sparrow *(Passer domesticus)* on Wake and, possibly, in the Marshall Islands; Nutmeg Mannikin *(Lonchura punctulata)* in Palau; and Java Sparrow *(Padda oryzivora)* on Guam].

S— Seabird attracted to or near islands for feeding, roosting or, possibly, for breeding. No documented breeding records exist.

P— Pelagic seabird (non-breeding) normally found well offshore. These include records up to 200 nautical miles from the islands.

M— Migrant or wintering species.

V— Vagrant. Non-migratory species or species occurring well out of normal migratory range. These are unlikely to return successfully to breeding grounds.

H— Hypothetical. Occurrence is hypothetically or questionably documented. These include three categories: 1) Species reported by the reference as hypothetical or as an uncertain identification. 2) References to species pairs which are difficult to distinguish in the field (e.g. Common/Spotted Sandpiper, *Actitis hypoleucos/macularia).* We list these as hypothetical for the species we consider the most likely to occur. 3) Species recorded in general lists without reference, or difficult-to-identify migrant or vagrant species where accompanying description does not eliminate all other potentially occurring species. Species in this category are marked with an asterisk (*), and our reasons for listing these as hypothetical are given at the end of the checklist.

Occurrence references are those which first adequately document the occurrence of the species in each island group. In some instances, initial hypothetical or otherwise inadequate reports are replaced by subsequent references with more adequate documentation. Baker (1951) or Amerson (1969) are listed as the reference for all records included (with adequate documentation) by them. We use the following reference codes in this checklist:

AC— U.S. Army Corps of Engineers (1979)
Ad— Anderson (1981)
Am— Amerson (1969)
An— Anderson (1978)
As— Ashman (1983)
Bd— Brandt (1961)
Be— Beck (1985)
Bk— Baker (1951)
Br— Brandt (1962)
Bt— Brandt (1959)
By— Bruyns (1964)
CL— Clapp and Laybourne (1983)
Cp— R. Clapp (pers. comm.)
Dr— Drahos (1977)
DS— Dixon and Starret (1952)
Du— Dunbar (1975)
Eg— Engbring (1983b)
En— Engbring (1983a)
EO— Engbring and Owen (1981)
Fc— Finsch (1881)
Fi— Fisher (1950)
Fn— Finsch (1880b)
Fo— Fosberg (1966)
Ha— Hachisuka *et al.* (1943)
Hl— Hailman (1979)
Hu— Huber (1971)
Hy— Hayes (1985)
Je— Jenkins (1981)
JK— Johnson and Kienholz (1975)
JM— Johnston and McFarlane (1967)
Jn— Jenkins (1978)
Jo— Jouanin (1956)
Js— Jenkins (1983)
Kg— King (1962)
Kl— Kelso (1938)
Kn— King (1976)
Kr— Kridler (1979)
Ma— Marshall, J. (1957)
Mr— Marshall, M. (1977)
MW—Maben and Wiles (1981)
Oe— Owen (1974)
On— Owen (1977a)
Op— R. Owen (pers. comm.)
Ow— Owen (1977b)
Pa— Pratt, T. (pers. comm.)
PB— Pratt, H.D. and Bruner (1981)
PE— Pyle and Engbring (in press)
Pr— Pratt, H.D. *et. al.* (1977)
Pt— Pratt, T. (1984)
Pz— Perez (1971)
Ri— Ripley (1948)
RK— Rice and Kenyon (1962)
Ro— Rothschild (1903)
Rp— Ripley (1951)
Sc— Schipper (1985)
SK— Schreiber and Kleen (1968)
Tb— Tubb (1966)
WG— Williams and Grout (in press)
Wi— G. Wiles (pers. comm.)

Black-tailed Godwit. Kosrae. July 1983.
Photo by P. Pyle

Caroline Islands Ground-Dove. Pohnpei. June 1983.
Photo by P. Pyle

Checklist of the birds of Micronesia, with local distribution, status information, and references.

SPECIES		Wake (Wk)	Marshalls (Ms)	Kosrae (Ks)	Pohnpei (Pn)	Truk (Tk)	Northern Marianas (NM)	Guam (Gm)	Yap (Yp)	Palau (Pl)
ALBATROSSES	***DIOMEDEIDAE***									
[Short-tailed Albatross]	*Diomedea albatrus*						H-Bk			
Black-footed Albatross*	*Diomedea nigripes*	P-RK	P-Am				P-Bk			H-PE
Laysan Albatross*	*Diomedea immutabilis*	S-RK	P-Am		P-Hy		P-Du			
SHEARWATERS, PETRELS	***PROCELLARIIDAE***									
[White-necked Petrel]	*Peterodroma externa*		H-On							
Tahiti Petrel*	*Pterodroma rostrata*					P-Bk				
Kermadec Petrel	*Pterodroma neglecta*		P-Am			P-Mr				
Bonin Petrel	*Pterodroma hypoleuca*		P-Bk				S-DS			
Black-winged Petrel	*Pterodroma nigripennis*		P-JK							
Stejneger's Petrel*	*Pterodroma longirostris*		P-Cp							
Bulwer's Petrel*	*Bulweria bulwerii*		R-Am		H-By	H-By				
Streaked Shearwater	*Calonectris leucomelas*					P-By	P-DS		P-By	P-DS
Flesh-footed Shearwater	*Puffinus carneipes*		P-By							
Wedge-tailed Shearwater	*Puffinus pacificus*		S-Bk	S-Bk	S-By	S-Bk	R-DS	P-Bk	S-Fs	S-PE
Sooty Shearwater	*Puffinus griseus*		P-Sc							
Short-tailed Shearwater	*Puffinus tenuirostris*		P-Bk		P-Hy		P-Pt	P-Dr		
Christmas Shearwater	*Puffinus nativitatis*	S-Ha	R-Bk	P-PE			P-Pt			
Townsend's Shearwater	*Puffinus auricularis*						S-Jo	S-Dr		
Audubon's Shearwater	*Puffinus lherminieri*			R-Bk	R-Bk	R-Bk	S-Bk	S-Bk	S-Fs	R-Bk
STORM-PETRELS	***HYDROBATIDAE***									
Wilson's Storm-Petrel	*Oceanites oceanicus*		P-Hu							
Leach's Storm-Petrel	*Oceanodroma leucorhoa*		P-Hu				P-Pt	P-MW		
Band-rumped Storm-Petrel	*Oceanodroma castro*		P-Hu							
Matsudaira's Storm-Petrel*	*Oceanodroma matsudairae*			H-Hy	H-Hy		S-Pt	P-Kn		P-EO
Sooty Storm-Petrel	*Oceanodroma tristrami*						S-Pt			
TROPICBIRDS	***PHAETHONTIDAE***									
White-tailed Tropicbird	*Phaethon lepturus*	R-Fo	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk
Red-tailed Tropicbird	*Phaethon rubricauda*	R-Fo	R-Bk		S-Bk	S-Bk	R-Bk			S-By
BOOBIES	***SULIDAE***									
Masked Booby*	*Sula dactylatra*	R-Fo	R-Am				R-Bk	H-Js		S-EO
Brown Booby	*Sula leucogaster*	R-Fo	R-Bk	S-Bk	R-Bk	R-Bk	R-Bk	S-Bk	S-Bk	R-Bk
Red-footed Booby	*Sula sula*	R-Fo	R-Bk		R-PE	R-Bk	R-Bk	P-Bk		R-Bk
PELICANS	***PELECANIDAE***									
Australian Pelican	*Pelecanus conspicillatus*									V-EO
CORMORANTS	***PHALACROCORACIDAE***									
Little Pied Cormorant	*Phalacrocorax melanoleucos*									R-Bk
DARTERS	***ANHINGIDAE***									
[Oriental Darter]	*Anhinga melanogaster*									H-Ri
FRIGATEBIRDS	***FREGATIDAE***									
Great Frigatebird	*Fregata minor*	R-Fo	R-Bk	S-Bk	R-Bk	R-Bk	S-Bk	S-Bk	S-Bk	R-OW
Lesser Frigatebird*	*Fregata ariel*		S-Am	S-PE			S-Bk	H-Bk	S-Bk	S-Ow
HERONS, EGRETS, BITTERNS	***ARDEIDAE***									
Yellow Bittern	*Ixobrychus sinensis*					R-Bk	R-Bk	R-Bk	R-Bk	R-Bk
Schrenk's Bittern	*Ixobrychus eurhythmus*									V-Bk
Black Bittern	*Ixobrychus flavicollis*							M-Bk		
Gray Heron	*Ardea cinerea*						M-Pt			H-On
Pacific Reef-Heron	*Egretta sacra*		R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk

*See annotations following checklist.

SPECIES		Wk	Ms	Ks	Pn	Tk	NM	Gm	Yp	Pl
Intermediate Egret	*Egretta intermedia*					M-Ow	M-Bk	M-Bk	M-Bk	M-Bk
Little Egret	*Egretta garzetta*						M-Pa			M-Ow
Cattle Egret	*Bulbulcus ibis*		V-Sc		M-EO	M-Ow	M-PB	M-Dr	M-PB	M-Bk
Green-backed Heron*	*Butorides striatus*					M-PE	M-EO	H-Js		M-Bk
Japanese Night Heron	*Gorsachius goisagi*									M-Bk
Malayan Night-Heron	*Gorsachius melanolophus*									V-Bk
Black-crowned Night-Heron	*Nycticorax nycticorax*				V-Bd	M-Bk	M-Bk		M-Bk	M-Bk
Rufous Night-Heron*	*Nycticorax caledonicus*					R-Bk	H-Cp		H-Fs	R-Bk
GEESE, DUCKS	***ANATIDAE***									
Snow Goose	*Chen caerulescens*		V-Am							
Canada Goose*	*Branta canadensis*		V-Sc							
Green-winged Teal	*Anas crecca*		M-Bk				M-Bk			M-EO
Mallard*	*Anas platyrhyncos*		H-Am				R-Bk	E-Bk	H-Op	
Gray Duck*	*Anas superciliosa*					R-Bk			H-Fs	R-Bk
Northern Pintail	*Anas acuta*	M-Fo	M-Bk			M-PE	M-Bk	M-Bk		M-Bk
Garganey*	*Anas querquedula*	H-JM					M-Bk	M-Dr		M-EO
Northern Shoveler	*Anas clypeata*	M-JM	M-Am	M-Hy	M-Bk		M-Bk	M-Dr		
Gadwall*	*Anas strepera*						V-Pt			
Eurasian Wigeon	*Anas penelope*		V-Am			M-EO	M-Bk	M-MW	M-Bk	M-Ow
American Wigeon	*Anas americana*							V-MW		
Common Pochard	*Aythya ferina*							M-MW		
Canvasback	*Aythya valisineria*		V-Bk							
Tufted Duck	*Aythya fuligula*		V-Am				M-Bk	M-Bk	M-Bk	M-Bk
Greater Scaup	*Aythya marila*						M-Pt			
HAWKS, EAGLES	***ACCIPITRIDAE***									
Osprey*	*Pandion haliaetus*							M-Bk		M-Bk
Black Kite	*Milvus migrans*						V-Pt			
Brahminy Kite	*Haliastur indus*									V-EO
Japanese Sparrowhawk	*Accipiter gularis*							M-Bk		
Chinese Goshawk	*Accipiter soloensis*						M-Bk		M-Bk	M-EO
Common Buzzard*	*Buteo buteo*						M-Pt			H-PB
FALCONS	***FALCONIDAE***									
Eurasian Kestrel	*Falco tinnunculus*						V-Pt			
[Northern Hobby]*	*Falco subbuteo*						H-Pt	H-Js		
[Oriental Hobby]	*Falco severus*									H-On
Peregrine Falcon	*Falco peregrinus*							M-Bk	M-Bk	M-Bk
MEGAPODES	***MEGAPODIDAE***									
Micronesian Megapode	*Megapodius laperouse*						R-Bk	E-Bk		R-Bk
FRANCOLINS, PHEASANTS, QUAIL	***PHASIANIDAE***									
Black Francolin	*Francolinus francolinus*							I-Dr		
Blue-breasted Quail	*Coturnix chinensis*							I-Bk		
Red Junglefowl	*Gallus gallus*		I-Am	I-Bk	I-Bk	I-Bk	I-Bk		I-Bk	I-Bk
RAILS, GALLINULES, COOTS	***RALLIDAE***									
Banded Rail	*Rallus philippensis*									R-Bk
Guam Rail	*Rallus owstoni*							R-Bk		
Wake Rail	*Rallus wakensis*	E-Ro								
Red-legged Crake	*Rallina fasciata*									M-Bk
Slaty-legged Crake	*Rallina eurizonoides*									R-Bk
Kosrae Rail	*Porzana monasa*			E-Bk						
White-browed Rail	*Poliolimnas cinereus*		V-Bk		R-Ma	R-Bk		E-Bk	R-Bk	R-Bk
Bush-hen	*Amaurornis olivaceus*									V-EO
Purple Swamphen	*Porphyrio porphyrio*									R-Bk
Common Moorhen	*Gallinula chloropus*						R-Bk	R-Bk		R-Bk
Eurasian Coot	*Fulica atra*						M-Bk	M-Bk		

SPECIES		Wk	Ms	Ks	Pn	Tk	NM	Gm	Yp	Pl
PRATINCOLES	***GLAREOLIDAE***									
Oriental Pratincole	*Glareola maldivarum*		V-Sc			M-Ow			M-PB	M-Ow
[Small Pratincole]*	*Glareola lactea*							H-Js		
PLOVERS	***CHARADRIIDAE***									
Black-bellied Plover	*Pluvialis squatarola*		M-Bk			M-Bk	M-Bk	M-Bk	M-Pr	M-Ow
Lesser Golden-Plover	*Pluvialis dominica*	M-Fo	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk
Mongolian Plover	*Charadrius mongolus*		M-Bk	M-Bk	M-PE	M-Bk	M-PE	M-Bk	M-Bk	M-Bk
Greater Sand-Plover	*Charadrius leschenaultii*			M-Bk		M-PE	M-Pt	M-WG	M-Bk	M-Bk
Snowy Plover	*Charadrius alexandrinus*						M-EO			M-Bk
Common Ringed Plover	*Charadrius hiaticula*		H-Fn					M-WG		M-EO
Little Ringed Plover	*Charadrius dubius*		H-Bk					H-Pz	M-Bk	M-Ow
Oriental Plover	*Charadrius veredus*									M-EO
OYSTERCATCHERS	***HAEMATOPODIDAE***									
Eurasian Oystercatcher	*Haematopus ostralegus*							V-MW		
STILTS	***RECURVIROSTRIDAE***									
Black-winged Stilt	*Himantopus himantopus*									V-EO
SANDPIPERS, WADERS, SNIPE	***SCOLOPACIDAE***									
Common Greenshank	*Tringa nebularia*					M-Bk	M-Pt	M-WG	M-Bk	M-Bk
Nordmann's Greenshank	*Tringa guttifer*							M-WG		
Greater Yellowlegs*	*Tringa melanoleuca*	H-JM	V-Bk							
Marsh Sandpiper	*Tringa stagnatilis*					M-PE	M-EO	M-Be	M-PE	M-Ow
Spotted Redshank	*Tringa erythropus*					M-Ow		M-Je		
Common Redshank	*Tringa totanus*								M-PB	M-Ow
Wood Sandpiper	*Tringa glareola*		M-Hl			M-PE	M-Cp	M-Bk	M-Bk	M-Bk
[Green Sandpiper]	*Tringa ochropus*									H-On
Wandering Tattler	*Heteroscelus incanus*	M-Fo	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk
Gray-tailed Tattler	*Heteroscelus brevipes*		M-Am	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk
Common Sandpiper*	*Actitis hypoleucos*			H-Hy	H-EO	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk
Spotted Sandpiper	*Actitis macularia*		V-Am							
Terek Sandpiper	*Xenus cinereus*						M-EO	M-WG	M-PE	M-Ow
[Upland Sandpiper]*	*Bartramia longicauda*							H-MW		
Little Curlew	*Numenius minutus*							M-WG		M-Ow
Whimbrel	*Numenius phaeopus*		M-Bk	M-Bk	M-Bk	M-Bk	M-Oe	M-Bk	M-Bk	M-Bk
Bristle-thighed Curlew*	*Numenius tahitiensis*	M-Fo	M-Bk		M-Bk	M-PB	M-Bk	H-Kg	H-Fs	
Far Eastern Curlew*	*Numenius madagascariensis*					M-PE		H-Je	M-PE	M-Bk
Eurasian Curlew	*Numenius arquata*						M-EO			
Black-tailed Godwit	*Limosa limosa*		M-Sc	M-Hy		M-PE	M-Kr	M-Jn	M-Pr	M-Ow
Bar-tailed Godwit	*Limosa lapponica*		M-Am	M-Hy	M-Bd	M-Bk	M-Pt	M-Bk		M-Bk
Ruddy Turnstone	*Arenaria interpres*	M-Fo	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk	M-Bk
Great Knot	*Calidris tenuirostris*					M-PE				M-Bk
Red Knot	*Calidris canutus*									M-Ow
Sanderling	*Calidris alba*	M-JM	M-Bk	M-Hy	M-PE	M-PE	M-Pt	M-Bk	M-Bk	M-Ow
Rufous-necked Stint	*Calidris ruficollis*		M-JK			M-PE	M-Bk	M-WG	M-PB	M-Bk
Temminck's Stint	*Calidris temminckii*						M-Pt			
Long-toed Stint	*Calidris subminuta*					M-PE		M-Kg	M-PE	M-Bk
Pectoral Sandpiper	*Calidris melanotos*		M-Am		M-Bk		M-PE	M-WG		M-Ow
Sharp-tailed Sandpiper	*Calidris acuminata*	M-JM	M-Bk	M-Hy	M-Bk	M-Bk	M-Bk	M-Bk	M-Pr	M-Bk
Dunlin	*Calidris alpina*	M-JM			M-Ow		M-EO	M-WG		M-Ow
Curlew Sandpiper	*Calidris ferruginea*								M-PE	M-Bk
Broad-billed Sandpiper	*Limicola falcinellus*									M-Bk
Buff-breasted Sandpiper	*Tryngites subruficollis*		V-Am		V-PE					
Ruff	*Philomachus pugnax*		M-Hl			M-PE	M-Pt	M-As		M-Ow

*See annotations following checklist.

SPECIES		Wk	Ms	Ks	Pn	Tk	NM	Gm	Yp	Pl
Latham's Snipe	*Gallinago hardwickii*		V-Am							
Common Snipe*	*Gallinago gallinago*	H-JM					M-Bk			
[Pintail Snipe]	*Gallinago stenura*						H-PE			
Swinhoe's Snipe	*Gallinago megala*					M-PE	M-PE	M-Bk	M-PE	M-Bk
JAEGERS, GULLS, TERNS, NODDIES	***LARIDAE***									
[Pomarine Jaeger]	*Stercorarius pomarinus*					H-By				
Long-tailed Jaeger	*Stercoarius longicaudus*									V-EO
Franklin's Gull	*Larus pipixcan*		V-An			V-PE				
Common Black-headed Gull	*Larus ridibundus*						M-AC	M-Jn		M-Ow
[Mew Gull]	*Larus canus*									H-On
Herring Gull	*Larus argentatus*						M-Bk			H-Op
Great-crested Tern	*Thalasseus bergii*		R-Bk	S-Hy	R-Bk	R-Bk	S-Pt	S-DS	S-Bk	R-Bk
Gull-billed Tern	*Sterna nilotica*						V-Pt			
Common Tern	*Sterna hirundo*		M-Am		M-EO	M-PE	M-AC	M-WG	M-PE	M-Bk
Black-naped Tern	*Sterna sumatrana*		R-Bk		R-Bk	R-Bk	S-Pt	S-Dr	R-Bk	R-Bk
Little Tern	*Sterna albifrons*			H-Hy	M-EO	M-PE	M-Bk	M-MW		M-Ow
Gray-backed Tern	*Sterna lunata*	S-DS	S-Am				R-Cp		S-Fs	M-Bk
Bridled Tern	*Sterna anaethetus*		V-Bk							R-Bk
Sooty Tern	*Sterna fuscata*	R-DS	R-Am	S-Hy	R-Bk	R-Br	R-Bk	S-Dr	S-Fs	R-Bk
Whiskered Tern	*Chlidonias hybrida*						V-Pa		V-CL	
White-winged Tern	*Chlidonias leucopterus*						M-Pt	M-Bk		M-Bk
Brown Noddy	*Anous stolidus*	R-Fo	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk
Black Noddy	*Anous minutus*	S-Ha	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk		R-Bk	R-Bk
Blue-gray Noddy	*Procelsterna cerulea*		R-Bk							
White Tern	*Gygis alba*	S-Fo	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk
PIGEONS, DOVES	***COLUMBIDAE***									
Rock Dove	*Columba livia*			I-Hy	I-PE	I-PE	I-Bk	I-Bk		
Philippine Turtle-Dove	*Streptopelia bitorquata*						I-Bk	I-Bk		
Nicobar Pigeon	*Caloenas nicobarica*									R-Bk
Caroline Islands Ground-Dove*	*Gallicolumba kubaryi*				R-Bk	R-Bk				
White-throated Ground-Dove	*Gallicolumba xanthonura*						R-Bk	R-Bk	R-Bk	
Palau Ground-Dove	*Gallicolumba canifrons*									R-Bk
Purple-capped Fruit-Dove	*Ptilinopus porphyraceus*		R-Bk	R-Bk	R-Bk	R-Bk				
Palau Fruit-Dove	*Ptilinopus pelewensis*									R-Bk
Mariana Fruit-Dove	*Ptilinopus roseicapilla*						R-Bk	R-Bk		
Micronesian Pigeon	*Ducula oceanica*		R-Bk	R-Bk	R-Bk	R-Bk			R-Bk	R-Bk
LORIES, COCKATOOS, PARROTS	***PSITTACIDAE***									
Pohnpei Lory*	*Trichoglossus rubiginosus*				R-Bk					
Gr. Sulphur-crested Cockatoo	*Cacatua galerita*									I-Rp
Eclectus Parrot	*Eclectus roratus*									I-Rp
CUCKOOS	***CUCULIDAE***									
Chestnut-winged Cuckoo	*Clamator coromandus*									V-Ow
Hodgson's Hawk-Cuckoo	*Cuculus fugax*									V-Rp
Common Cuckoo	*Cuculus canorus*									M-Bk
Oriental Cuckoo	*Cuculus saturatus*								M-Pr	M-Bk
Brush Cuckoo	*Cacomantis variolosus*									M-EO
Long-tailed Cuckoo	*Eudynamys taitensis*		M-Bk	M-Bk	M-Bk	M-Bk			M-Bk	M-Bk
OWLS	***STRIGIDAE***									
Palau Owl	*Pyrroglaux podargina*									R-Bk
[Brown Hawk-Owl]	*Ninox scutulata*									H-En
Short-eared Owl	*Asio flammeus*		V-JK	V-Kl	R-Bk		M-Bk	M-Dr	H-PE	
NIGHTJARS	***CAPRIMULGIDAE***									
Jungle Nightjar*	*Caprimulgus indicus*									R-Bk

SPECIES		Wk	Ms	Ks	Pn	Tk	NM	Gm	Yp	Pl
SWIFTS	***APODIDAE***									
Island Swiftlet*	*Aerodramus vanikorensis*			R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	H-Bk	R-Bk
Fork-tailed Swift	*Apus pacificus*		V-Sc				M-Pt			
KINGFISHERS	***ALCEDINIDAE***									
Sacred Kingfisher*	*Halcyon sancta*		V-Sc						H-Bk	H-Op
Micronesian Kingfisher	*Halcyon cinnamomina*				R-Bk			R-Bk		R-Bk
Collared Kingfisher	*Halcyon chloris*						R-Bk			R-Bk
BEE-EATERS	***MEROPIDAE***									
Rainbowbird	*Merops ornatus*									M-EO
ROLLERS	***CORACIIDAE***									
Dollarbird	*Eurystomus orientalis*				V-Eg				M-Pr	M-Bk
SWALLOWS	***HIRUNDINIDAE***									
Barn Swallow	*Hirundo rustica*		M-Ad		M-EO	M-Bt	M-Bk	M-Bk	M-Bk	M-Bk
Asian House-Martin	*Delichon dasypus*									M-EO
CROWS	***CORVIDAE***									
Mariana Crow	*Corvus kubaryi*						R-Bk	R-Bk		
DRONGOS	***DICRURIDAE***									
Black Drongo	*Dicrurus macrocercus*						I-Bk	I-Tb		
CUCKOO—SHRIKES	***CAMPEPHAGIDAE***									
Cicadabird	*Coracina tenuirostris*				R-Bk				R-Bk	R-Bk
THRUSHES, OLD WORLD WARBLERS AND FLYCATCHERS	***MUSCICAPIDAE***									
Palau Bush-Warbler	*Cettia annae*								R-Bk	
Lanceolated Warbler	*Locustella lanceolata*									M-EO
[Great Reed-Warbler]	*Acrocephalus arundinaceus*									H-PE
Nightingale Reed-Warbler*	*Acrocephalus luscinia*			H-Fc	R-Bk	R-Bk	R-Bk	E-Bk	R-Bk	
Narcissus Flycatcher	*Ficedula narcissina*									M-Bk
Gray-spotted Flycatcher	*Muscicapa griseisticta*									M-Bk
Truk Monarch	*Metabolus rugensis*					R-Bk				
Yap Monarch	*Monarcha godeffroyi*								R-Bk	
Tinian Monarch	*Monarcha takatsukasae*						R-Bk			
Pohnpei Flycatcher*	*Myiagra pluto*				R-Bk					
Oceanic Flycatcher*	*Myiagra oceanica*					R-Bk				
Guam Flycatcher*	*Myiagra freycineti*							R-Bk		
Mangrove Flycatcher*	*Myiagra erythrops*									R-Bk
Palau Fantail	*Rhipidura lepida*									R-Bk
Rufous Fantail	*Rhipidura rufifrons*				R-Bk		R-Bk	R-Bk	R-Bk	
Palau Morningbird	*Pitohui tenebrosa*									R-Bk
Siberian Rubythroat	*Luscinia calliope*									M-Bk
Blue Rock-Thrush	*Monticola solitarius*									M-Bk
Eye-browed Thrush	*Turdus obscurus*									M-Bk
Dusky Thrush	*Turdus naumanni*						V-Pt			
WAGTAILS, PIPITS	***MOTACILLIDAE***									
Yellow Wagtail	*Motacilla flava*						M-Pt		M-Ow	M-Ow
Gray Wagtail	*Motacilla cinerea*							M-MW		M-EO
White Wagtail*	*Motacilla alba*							H-Wi		M-Ow
Red-throated Pipit	*Anthus cervinus*									M-EO
WOOD-SWALLOWS	***ARTAMIDAE***									
White-breasted Wood-Swallow	*Artamus leucorhynchus*									R-Bk
SHRIKES	***LANIIDAE***									
Brown Shrike	*Lanius cristatus*									M-EO

*See annotations following checklist.

SPECIES		Wk	Ms	Ks	Pn	Tk	NM	Gm	Yp	Pl
STARLINGS, MYNAS	***STURNIDAE***									
Pohnpei Mountain Starling	*Aplonis pelzelni*				R-Bk					
Kosrae Mountain Starling	*Aplonis corvina*			E-Bk						
Micronesian Starling	*Aplonis opaca*			R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk
Chestnut-cheeked Starling	*Sturnus philippensis*									V-Bk
White-cheeked Starling	*Sturnus cineraceus*						V-Bk			
HONEYEATERS	***MELIPHAGIDAE***									
Cardinal Honeyeater	*Myzomela cardinalis*			R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk
Golden Honeyeater	*Cleptornis marchei*						R-Bk			
WHITE-EYES	***ZOSTEROPIDAE***									
Bridled White-eye*	*Zosterops conspicillatus*				R-Bk	R-Bk	R-Bk	R-Bk	R-Bk	R-Bk
Dusky White-eye	*Zosterops cinerea*			R-Bk	R-Bk					R-Bk
Palau Greater White-eye	*Megazosterops palauensis*									R-Bk
Yap Greater White-eye	*Rukia oleaginea*								R-Bk	
Truk Greater White-eye	*Rukia ruki*					R-Bk				
Pohnpei Greater White-eye	*Rukia longirostra*				R-Bk					
BUNTINGS	***EMBERIZIDAE***									
Black-headed Bunting	*Emberiza melanocephala*									V-Ow
SPARROWS, WEAVERS	***PASSERIDAE***									
Eurasian Tree-Sparrow	*Passer montanus*		I-EO				I-Oe	I-Kg	I-PE	
MANNIKINS, FINCHES	***ESTRILDIDAE***									
Blue-faced Parrotfinch	*Erythrura trichroa*			R-Bk	R-Bk	R-Bk				R-Bk
Nutmeg Mannikin	*Lonchura punctulata*								I-Bk	
Chestnut Mannikin*	*Lonchura malacca*							I-Kg		I-Rp
Hunstein's Mannikin*	*Lonchura hunsteini*				I-Bk					

*ANNOTATIONS

The following species require clarification concerning aspects of their taxonomic or occurrence status as listed in this checklist. Some of them are recorded as "hypothetical" for one or more island groups. These pertain primarily to sight reports that we feel are insufficiently documented; our reasons are given below. Hypothetical records not explained here are either published as hypothetical or as "species pairs." Reasons are also given here for the omittal of four species, Little Shearwater *(Puffinus assimilis),* Red-billed Tropicbird *(Phaethon aethereus),* Semipalmated Plover *(Charadrius semipalmatus),* and Arctic Tern *(Sterna paradiseae),* which were included in Owen (1977a) but for which evidence of occurrence is so insufficient that we have not included them, even as hypothetical.

Black-footed Albatross *(Diomedea nigripes).* Formerly bred in the Northern Marianas (Jouanin 1959) and Wake (Rice and Kenyon 1962. The colonies have become extinct, hence the present "pelagic" status.

Laysan Albatross *(Diomedea immutabilis).* Formerly bred on Wake (Rice and Kenyon 1962), but breeding not reported there for many years. Occasional birds have been landing there recently (S. Fefer, pers. comm.), hence the present "seabird" status.

Tahiti Petrel *(Pterodroma rostrata).* We follow Owen (1977a) in listing this species for Truk. It is unclear from Baker (1951) where in the E. Caroline Islands this observation was made.

Stejnegers Petrel *(Pterodroma longirostris).* See annotation for Little Shearwater *(Puffinus assimilis).*

Bulwer's Petrel *(Bulweria bulwerii).* Bruyns (1964) lists sight records for Kosrae and Pohnpei without descriptions. Because of possible confusion with the Matsudaira's or Sooty Storm-Petrels *(Oceanodroma matsudairae* and *O. tristrami)* species which Bruyns did not report and which are likely to occur in the area, we choose to consider these records hypothetical.

Matsudaira's Storm-Petrel *(Oceanodroma matsudairae).* Hayes (1985) describes two birds of either this species or Sooty Storm-Petrel *(O. tristrami)* following a ship between Kosrae and Pohnpei. Because field separation of these two species is difficult, and because Matsudaira's is known to follow ships and Sooty is not, we list this record as hypothetical for Matsudaira's Storm-Petrel.

Little Shearwater *(Puffinus assimilis).* The specimen listed for the Marshalls (Amerson 1969), which had been the only record in Micronesia (Owen 1977a) has been re-identified as a Stejneger's Petrel *(Pterodroma longirostris)* (R. Clapp pers. comm.).

Red-billed Tropicbird *(Phaethon aethereus).* Baker (1951) lists this species in his main text and Owen (1977a) records it as hypothetical for Micronesia based upon old and undocumented sight reports for the Marshalls and Kosrae (Finsch 1880a, 1880b). We choose to disregard these records based on lack of substantiation, unlikely occurrence, and probable confusion of this species with the similar juvenile White-tailed Tropicbird *(P. lepturus).*

Masked Booby *(Sula dactylatra).* Listed for Guam without reference in Jenkins (1983).

Lesser Frigatebird *(Fregata ariel).* Breeding in Palau might be inferred by Owen's (1977b) report that "one male . . . was seen on a nest on Helen Island." Because this would represent quite a breeding range extension, and because frigatebirds are known to sit on old booby nests, we choose to consider this a "seabird" species unless more positive evidence of nesting is obtained.

Green-backed Heron *(Butorides striatus).* Listed for Guam without reference in Jenkins (1983).

Rufous Night-Heron *(Nycticorax caledonicus).* Two are reported as sight observations by Fisher (1950) on Yap without substantiation. Details are needed to rule out other heron species.

Canada Goose *(Branta canadensis).* Two birds observed by Schipper (1985) in the Marshalls were banded individuals that were captively raised in the Aleutians.

Mallard *(Anas platyrhynchos).* The resident form of Mallard *(A.p. oustaleti)* of the Marianas has in the past been regarded as a distinct species. It is thought to derive from Mallard/Gray Duck ancestry, and is considered today as a form of Mallard. A record of the nominate, migratory form of Mallard also exists for the N. Marianas (Lemke 1984). Amerson (1969) cites Yocom (1964) who refers to "two flocks . . . consisting of about 12 birds each" on Kwajalein, seen by a doctor who was stationed there and was familiar with ducks as a hunter. This many Mallards would be an extraordinary number for the Marshalls and we feel that more substantiation is needed before official acceptance.

Gray Duck *(Anas superciliosa).* Fisher (1950) refers to a sighting of two individuals on Yap. A description is needed to eliminate similar migratory species of ducks.

Garganey *(Anas querquedula).* This vagrant is reported for Wake by Johnston and McFarlane (1967) without documentation. Details are needed to separate this from other teal species.

Gadwall *(Anas strepera).* A report of this species in the Marshalls (Amerson 1969) can be traced to Yocom (1964) who cites a doctor (and hunter) as observing 200 ducks on Kwajalein, the "most numerous" of which were Gadwalls. This species would be a vagrant anywhere in the central Pacific, and a number this large is unlikely. We have chosen, therefore, to disregard this report.

Osprey *(Pandion haliaetus).* Baker (1951) and Owen (1977a) list this species as resident based on Mayr's (1945) statement that it "apparently breeds" in Palau. There have been no subsequent references for breeding and we feel that more concrete evidence is needed before assuming it ever bred here. Thus, the "migrant" designation.

Common Buzzard *(Buteo buteo).* In Palau, an immature *Buteo* is described and assigned to this species by Pratt and Bruner (1981). Although most likely this species, the bird was not well seen, and we feel that this variable and often difficult-to-identify species could have been confused with other Asiatic *Buteos.*

Northern Hobby *(Falco subbuteo).* A sight record is listed for Guam without description in Jenkins (1983). Documentation is needed to distinguish this from other Asiatic falcons.

Small Pratincole *(Glareola lactea).* Listed without reference for Guam in Jenkins (1983). This species would be a vagrant here and should be well documented. We have disregarded a report of this species from Saipan, N. Marianas (U.S. Army Corps of Engineers 1979).

Semipalmated Plover *(Charadrius semipalmatus).* Finsch (1880b) reports an "uncertain" observation of *"Charadrius hiaticula"* in the Marshalls. Based perhaps on likelihood of occurrence, Baker (1951) assigns this record to *C. h. semipalmatus.* Semipalmated Plover has subsequently been split into a separate species from the nominate Common Ringed Plover. Amerson (1969) and Owen (1977a) follow Baker, and list Semipalmated Plover as hypothetical for the Marshalls. We regard Common Ringed Plover as being just as likely to occur in the Marshalls, and thus list Finsch's record as hypothetical for this species.

Greater Yellowlegs *(Tringa melanoleuca).* This vagrant is reported by Johnston and McFarlane (1967) for Wake without documentation. Details are needed to separate this from the similar Lesser Yellowlegs *(T. flavipes).*

Common Sandpiper *(Actitis hypoleucos).* A report of this species from Pohnpei (Engbring and Owen 1981) does not exclude the very similar Spotted Sandpiper *(A. Macularia),* although K. Guthrie (pers. comm.), who is responsible for the report, feels that the bird was not a Spotted. Common is by far the more regular of the two in Micronesia (Pyle and Engbring pers. obs.), and *Actitis* found in Pohnpei are almost certainly this species. However, a specimen of Spotted from the Marshalls (Amerson 1969), if correctly identified, indicates the potential for both species' occurrence. Without detailed documentation, reports of *Actitis* from the central Pacific should be considered as "species pair" records.

Upland Sandpiper *(Bartramia longicauda).* On Guam, two birds are reported and described by Maben and Wiles (1981). We feel that the similar, and much more likely to occur, juvenile Ruff *(Philomachus pugnax)* should have been more fully eliminated before acceptance of such an extraordinary species record.

Bristle-thighed Curlew *(Numenius tahitiensis).* King (1962) and Jenkins (1981) refer to sightings of this species on Guam without supporting details. Fisher (1950) refers to two birds observed (and collected?) on Yap, but gives no supporting details. We feel that descriptions are needed to separate this species from Whimbrel *(N. phaeopus).*

Far Eastern Curlew *(Numenius madagascariensis).* Listed without reference for Guam in Jenkins (1983).

Common Snipe *(Gallinago gallinago).* Reported without description for Wake by Johnston and McFarlane (1967). Details are needed to separate this from other snipe species.

Arctic Tern *(Sterna paradisaea).* Amerson (1969) refers to a third-hand, undocumented sight record in Woodbury (1962) for the only record in the Marshall Islands and Micronesia (Owen 1977a). Due to the lack of any description and possible confusion with the very similar Common Tern *(S. hirundo),* we follow Clapp *et al.* (1983) who consider this record disregardable.

Caroline Islands Ground-Dove *(Gallicolumba kubaryi).* Owen (1977a) and others consider this a subspecies of the White-throated Ground-Dove *(G. xanthonura).* We follow Goodwin (1970), who split these into species.

Pohnpei Lory *(Trichoglossus rubiginosus).* This species is recorded from Namoluk Atoll, Truk, possibly as a vagrant blown there by a 1905 typhoon (Girschner *in* Marshall 1971). We suspect they more likely originated from caged birds brought to the Atoll as pets, and, therefore, have not included this record.

Jungle Nightjar *(Caprimulgus indicus).* In addition to the resident form *(C. i. phalaena),* an Asian race *(C. i. jotaka)* has occurred in Palau as a migrant (Baker 1951).

Island Swiftlet *(Aerodramus vanikorensis).* A variety of taxonomic treatments have been applied to this species. Owen (1977a) and other authors have divided the Micronesian population into two species, one in the Marianas and Palau, and the other in Kosrae, Pohnpei, and Truk. We follow Medway and Pye (1977) by treating it as a single species, and derive the common name from Pratt (in prep.). Baker (1951) cites Wigglesworth (1891) for apparently the only occurrence of this species on Yap. Because previous and subsequent ornithologists failed to find this species we suspect the possibility of specimen mislabeling and consider this record hypothetical.

Sacred Kingfisher *(Halcyon sancta).* Under Micronesian Kingfisher *(H. cinnamomina pelewensis),* Baker (1951) records an August observation of a kingfisher with cinnamon underparts for Ulithi and Owen (pers. comm.) observed a similar bird on Helen Island, Palau. We think that these likely refer to the migratory Sacred Kingfisher, and thus list this species hypothetically for Yap and Palau.

Nightingale Reed-Warbler *(Acrocephalus luscinia).* Populations on Woleai and Lamotrek Atolls (Baker 1951) account for this species' presence in the Yap group.

Guam, Mangrove, Oceanic, and Pohnpei Flycatchers *(Myiagra spp.).* Some authors including Owen (1977a), have considered these four as a single species. Our taxonomic treatment follows that suggested by H.D. Pratt (pers. comm.).

White Wagtail *(Motacilla alba).* The AOU (1983) has recently split this species into the Black-backed *(Motacilla lugens)* and White *(M. alba)* Wagtails. Both the description (Owen 1977b) and a drawing of the Palau bird provided by Takesi Suzuki indicate that it did not have an eyeline, ruling out the Black-backed Wagtail, and indicating that it was a White Wagtail, probably of the subspecies *leucopsis* or *baikalensis.* The Guam bird did have a black eye-line and a gray back (Wiles pers. comm.) and could have been a first year bird of either Black-backed Wagtail or the *ocularis* subspecies of White Wagtail (see Morlan 1981). Thus the hypothetical designation under White Wagtail, the species of the pair that we consider more likely on Guam.

Bridled White-eye *(Zosterops conspicillatus).* Owen (1977a) erroneously reports this species as occurring on Kosrae.

Chestnut Mannikin *(Lonchura malacca).* We consider a report from Saipan, N. Marianas, (U.S. Army Corps of Engineers 1979) as disregardable.

Hunstein's Mannikin *(Lonchura hunsteini).* Baker (1951) and Owen (1977a) indicate this to be an endemic resident of Pohnpei. There are no records previous to the 1930's however, and we feel that the present population was the result of introductions from New Ireland by the Japanese.

ACKNOWLEDGEMENTS

We sincerely thank all who assisted with this endeavor. Roger B. Clapp, Warren B. King, Robert P. Owen, H. Douglas Pratt, Thane K. Pratt, and Robert L. Pyle reviewed and provided valuable comments on drafts of the checklist. Paul Anderson, Keith Axelson, Robert E. Beck, Greg Bright, Phillip L. Bruner, Roger B. Clapp, Keith Guthrie, Floyd E. Hayes, Warren King, Eugene Kridler, Tom O. Lemke, Robert P. Owen, H. Douglas Pratt, Thane K. Pratt, William L. Schipper, Takesi Suzuki, Gary J. Wiles, and Janet M. Williams contributed unpublished information on new records and/or aided in the identification of species. This checklist could not have been completed without the support of Ernest Kosaka and the U.S. Fish and Wildlife Service.

LITERATURE CITED

Amerson, A.B. 1969. Ornithology of the Marshall and Gilbert Islands. Atoll Res. Bull. 127:1-348.

American Ornithologist's Union. 1983. Checklist of North American Birds. Sixth ed. Univ. Kansas, Lawrence, Kansas. 877 pp.

Anderson, D.A. 1978. A Franklin's Gull from the Marshall Islands. Micronesica 14(2):361-362.

Anderson, D.A. 1981. Observations of birds at Ujelung and other northern Marshall Islands atolls. Micronesica 17(1-2):198-212.

Ashman, P.R. 1983. First Mariana Islands record of a Ruff. 'Elepaio 43(8):61.

Baker, R.H. 1951. The avifauna of Micronesia, its origin, evolution, and distribution. Univ. Kans. Pubs., Mus. Nat. Hist. 3(1):1-359.

Beck, R.E. Jr. 1985. First record of the Marsh Sandpiper for Guam. 'Elepaio 46(3):20.

Brandt, J.H. 1959. New record of the Eastern Barn Swallow in Micronesia. Auk 76:528.

Brandt, J.H. 1961. New records in Micronesia for the Bar-tailed Godwit and Black-crowned Night-Heron. Auk 78:638.

Brandt, J.H. 1962. Nests and eggs of the birds of the Truk Islands. Condor 64:416-437.

Bruyns, W.F.J. 1964. Birds seen during west to east trans-pacific crossing along the equatorial counter-current around latitude 7 deg. N. in the autumn of 1960. Sea Swallow 17:57-66.

Casey, E. 1966. The birds of Wake Island. 'Elepaio 26(7):63-64.

Clapp, R.B. and R.C. Laybourne. 1983. First record of the Whiskered Tern from the tropical Pacific. 'Elepaio 43(9):69-70.

Clapp, R.B., R.C. Laybourne and R.L. Pyle. 1983. Status of the Common Tern *(Sterna hirundo)* in the tropical Pacific, with a note on records of the Black-naped Tern *(Sterna sumatrana)* in Hawaii. 'Elepaio 43(12):97-100.

Coultas, W.F. 1931. Whitney South Sea Expedition Journals, Vol. W. Journal and letters, Vol. II, of William F. Coultas, November 1930 to December 1931. 290 pp. Unpublished. Amer. Mus. Natur. Hist.

Dixon, K.L. and W.C. Starrett. 1952. Offshore observations of tropical sea birds in the western Pacific. Auk 69:266-272.

Drahos, N. 1977. Additions to the avifauna of Guam. Micronesica 13(10):45-48.

Dunbar, W.P. 1975. Observations of Black-footed and Laysan Albatrosses between Seattle and Guam. 'Elepaio 36(3):32-35.

Engbring, J. 1983a. Avifauna of the Southwest Islands of Palau. Atoll Res. Bull. 267:1-22.

Engbring, J. 1983b. First Ponape record of a Dollarbird, with a summary of the species' occurrence in Micronesia. 'Elepaio 44(4):35-36.

Engbring, J. and R.P. Owen. 1981. New bird records for Micronesia. Micronesica 17(1-2):186-192.

Engbring, J. and P. Pyle. In prep. Observations of birds on Wolouna Islet, Ant Atoll, Ponape.

Fefer, S.I. and C. Harrison. 1982. Trip report—Wake Atoll—July 14-15, 1982. 4pp. Unpublished report. U.S. Fish and Wildlife Service, Honolulu.

Fefer, S.I. and R.J. Shallenberger. 1983. Trip report, Wake Atoll—March 29-30, 1983. 7 pp. Unpublished report. U.S. Fish and Wildlife Service, Honolulu.

Finsch, O. 1880a. Beobachtungen uber die Vogel der Inseln Kuschai (carolinen). Journ. f. Ornith., 28:296-310.

Finsch, O. 1880b. Ornithological letters from the Pacific. No. III. Taluit (Bonham) Island. Ibis, 4th Ser., 4:329-333.

Finsch, O. 1881. Ornithological letters from the Pacific. No. V. Kushai. Ibis 4th Ser., 5:102-115.

Fisher, H.I. 1950. The birds of Yap, Western Caroline Islands. Pac. Sci. iv(1):55-62.

Fosberg, F.R. 1966. Northern Marshall Islands land biota: birds. Atoll Res. Bull. 114:1-35.

Goodwin, D. 1970. Pigeons and doves of the world. BMNH, London.

Hachisuka, M.U., N. Kuroda, S. Uchida, C. Kiyoshi, N. Takatsukasa, and Y. Yamashina. (1942). A hand list of the Japanese birds (third revised edition). Ornith. Soc. Japan, Tokyo. 238 pp.

Hailman, J. 1979. Notes on the birds of Eniwetok Atoll, Marshall Islands. 'Elepaio 40(6):87-90.

Hayes, F.E. 1985. New bird records for the Eastern Caroline Islands. 'Elepaio. 45(12):123-125.

Huber, L.N. 1971. Notes on the migration of the Wilson's Storm Petrel *Oceanites oceanicus* near Eniwetok Atoll, W. Pacific Ocean. Notornis 18:38-42.

Jenkins, J.M. 1978. Two new bird records for Guam. Micronesica 14(2):361.

Jenkins, J.M. 1981. Seasonality and relative abundance of Guam shorebirds. Micronesica 17(1-2):181-184.

Jenkins, J.M. 1983. The native forest birds of Guam. Amer. Ornith. Union Monogr. 31:1-61.

Johnson, O.W. and R.J. Kienholz. 1975. New avifaunal records from Eniwetok. Auk 92:592.

Johnston, D.W. and R.W. McFarlane. 1967. Migration and bioenergetics of flight in the Pacific Golden Plover. Condor 69(2):156-168.

Jouanin, C. 1956. Une capture meconnue de *Puffinis puffinis newelii* Henshaw. Bull du Mus. (Mus Nat. Hist. Natur., Paris) 2e series 28(3):273-274.

Jouanin, C. 1959. Une colonie meconnue d'Albatros a pieds noirs *Diomedea nigripes,* dans iles Mariannes. Bull du Mus. (Mus. Nat. Hist. Natur., Paris) 2e series 31(6):477-479.

Kelso. L. 1938. An addition to the range of the Short-eared Owl. Oologist 60:138.

King, B. 1962. Guam field notes. 'Elepaio 23(6):29-31.

King, B. 1976. Matsudaira's Storm-petrel, *Oceanodroma matsudairae* Kuroda, a new bird species for Micronesia. Micronesica 12(2):333.

King, B., M. Woodcock and E.C. Dickinson. 1975. A field guide to the birds of South-east Asia. Collins & Sons, London. 480 pp.

Kridler, E. 1979. Saipan and Tinian field trip notes. 5 pp. Unpublished. U.S. Fish and Wildlife Service, Honolulu.

Lemke, T.O. 1984. Recent observations on the avifauna of the Northern Mariana Islands north of Saipan. CNMI Div. Fish and Wildlife, Saipan. 40 pp. Unpublished.

Maben, A.F. and G.J. Wiles. 1981. Nine new bird records for Guam and Rota. Micronesica 17(1-2):192-195.

Marshall, J.T. 1957. Atolls visited during the first year of the Pacific Islands Rat Ecology Project. Atoll Res. Bull. 56:1-11.

Marshall, M. 1971. Notes on birds from Namoluk Atoll. Micronesica 7:234-236.

Marshall, M. 1977. Kermadec Petrel in the Eastern Caroline Islands. Micronesica 13(1):83.

Mayr, E. 1945. Birds of the Southwest Pacific. MacMillan Co., New York. xix + 316 pp.

Medway, L., and J.D. Pye. 1977. Echolocation and the systematics of swiftlets. *In* Stonehouse, B., and C. Perrins, Eds., Evolutionary ecology. Univ. Park Press, Baltimore.

Morlan, J. 1981. Status and identification of forms of White Wagtail in Western North America. Continental Birdlife 2(2):37-50.

Morony, J.J., W.J. Bock and J. Farrand. 1975. Reference list of the birds of the world. Am. Mus. Nat. Hist., New York. 207 pp.

Owen, R.P. 1974. Environmental impact study on the terrestrial fauna and flora of Tinian with respect to the proposed establishment of a military base on that island. Unpublished U.S. Air Force report. 22 pp.

Owen, R.P. 1977a. A checklist of the birds of Micronesia. Micronesica 13(1):65-81.

Owen, R.P. 1977b. New bird records for Micronesia and major island groups in Micronesia. Micronesica 13(1):57-63.

Perez, G.S.A. 1971. Ring Neck Plover on Guam. Micronesica 7:236.

Pratt, H.D. In prep. A review of the English and Scientific Nomenclature of Cave Swiflets *(Aerodramus).*

Pratt, H.D., J. Engbring, P. Bruner, and D.G. Berrett. 1980. Notes on the taxonomy, natural history, and status of the resident birds of Palau. Condor 82:117-131.

Pratt, H.D. and P.L. Bruner. 1981. Noteworthy records of nonbreeding birds in Micronesia. Micronesica 17(1-2):195-198.

Pratt, H.D., P.L. Bruner, and D.G. Berrett. 1977. Ornithological observations on Yap, Western Caroline Islands. Micronesica 13(1):49-56.

Pratt, T.K. 1984. Shorebird and seabird surveys and inventories. Pittman-Robertson Job Progress Reports FY 1984, CNMI Div. of Fish and Wildlife. Pp. 60-86. Unpublished.

Pyle, P. and J. Engbring. In press. New bird records and migrant observations from Micronesia, 1978-1984. 'Elepaio.

Rice, D.W. and K.W. Kenyon. 1962. Breeding distribution, history, and populations of north Pacific albatrosses. Auk 79:365-386.

Ripley, S.D. 1948. First record of Anhingidae in Micronesia. Auk 65:454-455.

Ripley, S.D. 1951. Migrants and introduced species in the Palau Archipelago. Condor 53:299-300.

Rothschild, W. 1903. [Concerning the discovery of the Wake Rail]. Bull. B.O.C. 13:78.

Schipper, W.L. 1985. Observations of birds on Kwajalein Atoll, 1978-1983. 'Elepaio 46(4):27-32.

Schreiber, R.W. and V.M. Kleen. 1968. Preliminary report. Wake Island Survey, 1-15 March 1968. 9 pp. Unpublished report.

Slater, P. 1972. A field guide to Australian birds. Vol. 1, non-passerines. Rigby Ltd., Sydney. + 428 pp.

Tubb, J.A. 1966. Notes on birds of Guam. Nat. Hist. Bull. Siam Soc. 21:135-138.

U.S. Army Corps of Engineers. 1979. Ornithological survey of wetlands in Guam, Saipan, Tinian, and Pagan. Corps of Engineers, Pacific Ocean Division. 202 pp.

Wigglesworth, L.W. 1891. Aves Polynesiae. A catalogue of the birds of the Polynesian Subregion. Abhandl. und Ber. Zool. Mus. Dresden, no. 6 (1890-1891):1-92.

Williams, J.M. and P.C. Grout. In press. Migrants on Guam, Fall 1983. 'Elepaio.

Woodbury, A.N. 1962. A review of the ecology of Eniwetok Atoll, Pacific Ocean. Unpublished report of the Institute of Environmental Biological Research, Univ. of Utah, Salt Lake City. vii and 123 pp.

Yocom, C.F. 1964. Waterfowl wintering in the Marshall Islands, southwest Pacific Ocean. Auk 81:441-442.

§4(f). Should S. 1796 open the door to exempting the protective provisions of DOTA's Section 4(f), how is this Subcommittee or any other congressional body going to determine which other projects should be exempt and which should not? Moving from national interest concerns to more regional concerns, the consideration of alternatives to the project is also justified since the Island of Oahu could better spend those highway funds on projects that will help relieve existing congestion, and provide for future corridors to areas slated for major development that are currently in need of highway improvement.

Finally, the refusal of this Committee to consider this bill would preserve the unique North Halawa Valley, saving Oahu's single most important interior park for recreational use by the residents of Oahu, and constitute another step toward the wise use and conservation of the Hawaiian Islands whose economic well-being depends on those very same natural resources and tourism that S. 1796 would so callously destroy.

Thank you for this opportunity to appear before you today. Both the National Audubon Society and our state chapter, Hawaii Audubon, stand ready to assist this subcommittee in any way we can.

GLEANINGS FROM THE LITERATURE

HAWAIIAN HERITAGE PLANTS

by Angela Kay Kepler
1983, Oriental Publishing Company
Honolulu, Hawaii, 150 pages, $9.95

"Ethnobotany: The plant lore of race or people; also: the systematic study of such lore." (Webster's III New Dict. 1981.) Every possible facet of this word is explored by Angela Kay Kepler in her book *Hawaiian Heritage Plants*. Her discussions center primarily on Hawaiians and their parent race, the Polynesians, but also touch on all the ethnic groups of Hawaii and into the greater Pacific context and on beyond.

Kepler takes 34 plants that grow in Hawaii (endemic, indigenous, Polynesian introduced, and introduced after Western contact) and gives us a wealth of information on each plant.

Color photos are breathtaking, and generously distributed thoughout the book. There is often more than one picture per species, representing several parts of a plant. Other pictures show habitats, pictures of markets, harvesting, the making of products, and the finished products. Still other pictures portray the results of goat predation, children eating fruit, a ground strewn with mountian apple stamens, a picture of a damselfly nymph, an I'iwi, a Nene, and pictures of heiaus, and a sandlewood pit.

The cover photo of a lobelia is very beautiful as is the back cover picture of a mamane. The photos are mostly by the author and five other photographers. Anyone who loves these Islands, and there are many of us, will totally enjoy the pictures and drawings representing Hawaiian things and places.

The charming drawings, all done by the author, are of the plants themselves, one of each, and of artifacts, tapa and tattoo patterns, birds, a feather cloak, a trading ship, and a boy drinking coconut milk.

A full spectrum of plant uses is presented - food, medicinal, religious, for making of artifacts, used as bait, polish, scent, or even to still the waters, to stun fish and many more. She not only explores uses of each plant but also other aspects of each plant, especially its habitat and its interrelationship with other living creatures. A wealth of information on Hawaiian natural history is here . . . for example we learn about the damselfly larve, which in Hawaii has uniquely adapted to life in the moist earth under the uluhe fern and the leaf axils of 'ie'ie.

Of special interest to Audubon Members are the inter-relationships of plants with birds - the never tiresome story of Hawaiian bird evolution appears in the section on lobelias with excellant line drawings showing bill adaptions of the Hawaiian Honeycreepers; the story of the Palila so intertwined with the rescue of the mamane trees from goats; the ohia for food nectar for the 'I'iwi, 'Apapane, and other native Hawaiian forest birds, and the art of Hawaiian birdcatching and of Hawaiian featherwork.

Kepler's sources of information are extensive. Many early naturalists and travelers are quoted - James Cook, Archibald Minzies, David Douglas, R. C. L. Perkins, Isabella Byrd, to name a few. Some of these sources are unpublished and include items of interest not found in the exsisting standard references on plants of Hawaii.

A bibliography listing her many sources would have been a nice addition.

Another fresh approch is the addition of pre-contact legends and chants referring to the plants. Stories of early post-contact

industries like the pulu of the hapuu plant and the sandlewood trade are told.
Still another inclusion is the propagation of the plants, a nice addition for the gardener and the conservationist whose specialty is growing native plants in cultivation.

And there are yet other fascinating items about the plant life histories - evolution, pollination, dispersal, how they came to Hawaii.

At the end of each account, a scientific name, common and or Hawaiian name, family name and other plants in that family are given.

Here in one small book is a unique collection of information and pictures of 34 plants never before gathered together in one book.

Angela Kay Kepler, a naturalized New Zealander, is well-educated, well-read and has traveled widely throughout the Islands as well as all parts of the world. She has had opportunities to visit remote unique spots in our Hawaii and participate in special scientific explorations. Her husband, Cameron Kepler is with the U.S. Fish and Wildlife Service and she is the busy mother of two adopted Korean girls, Sylvan and Leilani.

The author has personal opinions that may not always agree with the reader but this after all does make the reader think about the issues involved.

In her own words she "has attempted to weave cultural and biological, historic and geographic, aesthetic and spiritual aspects of Hawaiian ecology into non-technical accounts of selected plants, both native and introduced."

Leilani Pyle

WAIPIO FIELD TRIP REPORT

-OCTOBER 1985-

October thirteenth was beautifully clear with cottony clouds above Pearl Harbor just as it was 44 years ago on December 7, 1941, when I watched the bombing. We started our field trip at the Waipahu Depot Road entrance at 2:15 pm, an unusual afternoon time to take advantage of a better sun angle for viewing the West Ponds.

The Waianae Range behind us showed no buildings and stood stalwart as it did for ancient Hawaiians. So did the hundreds of migrating waterbirds, which had come from the icy Arctic tundra on their dramatic, long distance flight to the sunshine and food in Hawaii, some to continue southward to other islands.

The 29 fortunate fielders led by an enthusiastic Bob Pyle truly enjoyed a rewarding sight. Birds in the hundreds were unafraid of our hushed huddling group as we raised binoculars or eagerly eyed them through spotting scopes, while we listened to the counts grow.

The walk itself was like the red lava unpaved dirt roads of Kaimuki some 70 years ago. Only the tiny silhouetted high-rises at the foot of Diamond Head and the sprinkling of houses on the Koolau Range hills told of the desecrated modern state of Hawaii.

We walked along dykes among cane fields between the Middle and West Lochs of Pearl Harbor, where the historic navy base had a long period of healing after the tragic bombing.

Plants along the walk included delightfully dust-covered castor oil beans, flanked by kiawe and banyan trees, koa haole, queen palms, and clumps of thistle. Mangrove swamps harbored litter along with thousands of sprouting seedpods.

Napping in the hot sun as the walk progressed from 2-5 pm was the steaming old Waipahu plantation smokestack, a familiar sight to all of us ancients.

Posed as if for a painting were more than 300 Kolea or Lesser Golden-Plovers, freckled in the sun. They were resting in between feedings in the rich red mud basin, rippled in chunky masses like a modern sculpture. Some 252 native Hawaiian Stilt or Ae'o, a joy to behold with their delicate long shocking pink legs and with their coats of black over white breast and underbelly, were flying in majestic form to challenge progress of any kind.

Ducks were also seen, including five Hawaiian Ducks or Koloa, one Koloa/Mallard cross, one Northern Pintail or Koloa-māpu and eight Northern Shovelers or Koloa-mohā. Other birds counted were: 350 Cattle Egrets, one unusual White-faced Ibis, 26 Hawaiian Coots, two Lesser Yellowlegs, two Wandering Tattlers or 'Ulili, 15 Ruddy Turnstones, 22 nervously busy Sanderlings, and two Pectoral Sandpipers. Hundreds more waterbirds were "Diamond Head" of us, which we did not count. Landbirds that were noted included Spotted and Zebra Doves, Red-vented Bulbuls, Common Mynas, Japanese White-eyes, one male Northern Cardinal, eight Red-crested Cardinals, several House Finches, Common Waxbills perched close by for several minutes and watched through the scopes, Red Avadavats, and Nutmeg and Chestnut Mannikins.

All of this was a most refreshing sight on a sunny Sunday afternoon in one of the few wetland habitats left on Oahu shores.

Peggy Hodge

OCTOBER MEETING REPORT

Our speaker for the 21 October evening meeting was Stewart Fefer, who was introduced by Peter Stine. Fefer works for the U.S. Fish and Wildlife Service. He spent last summer in Alaska, including the Pribiloff Islands.

The Pribiloffs are 800 miles west of Anchorage consisting of five islands and include the best sea bird colonies of Alaska; there are also 1¼ million Fur Seals. 97% of the Red-legged Kittiwakes breed there, and the islands are noted for the Asian migrants during the spring and fall. The largest island is St. Paul with a population of 650 people. All the islands are part of Alaska National Wildlife Refuge. The taking of Fur Seals has been a primary industry for the last 200 years, but there has been a diminishing population during the last few years. Oil exploration has brought $7 million worth of development there. Helicopters frequently pass over the Pribiloffs which is thought to have an effect on seal pups. The islands were originally a Russian colony, so they bear many Russian names. Typically foggy weather prevails.

2½ million birds inhabit St. George's cliffs alone. The Kittiwakes nest along the cliffs to avoid predation by Arctic foxes, which prey on both eggs and chicks. Fur seals inhabit cobbled beaches of St. George, where they have more available beaches than on St. Paul with its seven miles of cliffs. Parakeet Auklets nest near crests, and the Least Auklets mostly feed on fish and crustaceans. The Least Auklet is the most common. Fefer showed wonderful slides of birds nesting and in flight. Among other common birds are the Horned Puffins(about 35,000), and the Tufted Puffins(7,000-10,000), which nest in burrows and lay only one egg a season. Another common bird is the King Eider.

Arctic Foxes, brown in summer and white in winter, are the main predators of eggs and chicks; because they are not hunted, they are quite tame and easy to photograph.

The Pribiloff Fur Seals, which are mainly on St. Paul, weigh about 600-800 pounds for males, but females only about 100 pounds; the life expectancy is about 30 years. They migrate widely down the North American coast and to Asia, but never too far from shore. Males arrive at the Pribiloffs first, in May, and females later, returning to their place of birth, and giving birth to one young within a few days of arrival. Males set up territories and harems, with considerable fighting over harems between contending males. They go without eating for 60-65 days during their mating season.

The number of seals have declined drastically twice in the past 200 year, partly because of extensive pelagic as well as land hunting. From 1910-1985 the herd has increased to 1¼ million from a low of 200,000. Two to three year old males, weighing about 70 pounds each, are considered in excess in the population and are the victims of the annual slaughter in June and July. The first treaty, in 1911, outlawed pelagic sealing and regulated harvesting of young males. Under the international treaty, 15% went to Russia, 15% to Japan, 20% to Canada, and the rest to the U.S.A. and the Aleuts. As of 1985, they may be hunted by the Aleuts for food only. Congress did not reratify the treaty, so now only subsistance hunting is allowed. Excuses for the hunt were that seals competed with commercial fishing. Another cause of mortality is "ghost" fishing nets of nylon which go adrift snaring, entangling and drowning many seabirds and marine mammals. In addition to the wonderful slides of the many birds and Arctic Foxes, Fefer took some pictures (a little gruesome for the animal lovers) of the annual seal hunt.

Betty L. Johnson

'ELEPAIO BY AIRMAIL

Members and subscribers wishing to have the *'Elepaio* sent by airmail to addresses outside Hawaii may now obtain this service by remitting the additional amount needed to cover airmail postage costs. These amounts for 12 monthly issues are:

U.S. and territories and Canada.....$4.50
Central America, Carribean.....$12.50
S. America, Europe, Africa, Pacific and Asia.....$14.50

DECEMBER FIELD TRIPS:

* CHRISTMAS COUNTS *

Time to dust off those binoculars as Hawaii Audubon Society sponsored Christmas Counts are around the corner. This year's counts are scheduled with no conflict so we encourage all members to try and participate in one or more counts, especially counts on the outer islands. Contact the count compiler as soon as possible to get signed up. This is especially important for the Big Island count, as some will be counting on private lands and owners need the names of counters.

Novices are strongly encouraged to participate, since they can be paired up with more experienced birders.

This year's count schedule is: Dec. 21, Waipio, Oahu, Dave Bremer (623-7613); Dec. 22, Honolulu, Oahu, Bob Pyle (262-4046); Dec. 21, Lihue, Kauai, Winona Sears (822-3045); Dec. 28, Waimea, Kauai, Altadena De La Cruz (335-9975); Dec. 29, Kapaa, Kauai, Barbara Steenhof (826-9233); and Jan. 4, Volcano, Hawaii, Larry Katahira (967-7416).

Be sure to call the compiler and sign up soon!!!

DECEMBER PROGRAM:

WILDLIFE OF NEW GUINEA

The Monday December 16th general meeting will feature a slide show by Andrew Engilis on "Wildlife of New Guinea".

Andy is a zoologist in the Vertebrate Zoology section of the Bishop Museum. For the past 20 years the Museum has been engaged in a research program studying parasites of mammals and birds in New Guinea, and has built up one of the world's comprehensive collections of vertebrate specimens from the region. During his two years with the Museum, Andy has spent considerable time in New Guinea rainforests while participating in the ectoparasite research and conducting hsi own studies of bird foraging ecology.

The meeting will be held at the McCully-Moiliili Library at 2211 S. King St., Honolulu, beginning at 7:30 p.m.

The December meeting is also the annual meeting, so members are strongly encouraged to attend, in order to vote on the new Hawaii Audubon Board of Directors. If you are not planning to mail in the ballot enclosed in this issue, you may also turn it in at the beginning of the annual meeting.

VOTE THIS MONTH FOR

HAWAII AUDUBON BOARD

December is the month not only for the Christmas Bird Counts but also for voting on Hawaii Audubon Society's new Board of Directors for 1986. Enclosed in this issue is a ballot which may be mailed in; however, it must be received before 16 December in order to be valid. If you choose to vote in person, the ballot must be cast no later than the beginning of the annual Hawaii Audubon meeting scheduled for Monday, 16 December. The meeting will be held at 7:30 pm at the McCully-Moiliili Library on S. King Street in Honolulu.

PAY YOUR 1986 DUES

1986 dues for those who are local members of Hawaii Audubon Society should be paid this month, since all local memberships expire on 31 December, 1985.

Dues for 1985 are $6.00 for the regular memberships. Dues may be included, with or without the ballot, in the enclosed envelope. Make the check payable to "Hawaii Audubon Society".

Hawaii Audubon Society members who are "joint" with National Audubon (have paid the $30.00 membership) do not have to pay these $6.00 local dues, since part of the $30.00 is returned automatically to the Hawaii Audubon Chapter as local dues.

HELP WITH 'ELEPAIO

The January issue of the *'Elepaio* will be put together on 14 December (SAT.) at Thane Pratt's house on Spencer St. Call Thane at 524-8464 for more information, if you are interested in typing and/or proofing and/or paste-up. Help is always welcome, and we will train anyone!

HAWAII AUDUBON SOCIETY

BOARD OF DIRECTORS

President	Sheila Conant	948-8241
1st V.P.	Phillip Bruner	293-3820
2nd V.P.	Peter Stine	395-2191
Treasurer	Mary Engilis	
Rec. Secy.	Keith Fukumoto	395-1106
Cor. Secy.	Suzan Harada	845-6704
Directors	David Boynton	335-5008
	George Campbell	941-1356
	Carl Christensen	847-3511
	Carl McIntosh	262-4337
	Ray Tabata	948-8191
	Rick Warshauer	967-7476

COMMITTEES

Adopt-A-Refuge	Phillip Bruner(Chair)	293-3820
Conservation	Carl Christensen(Chr)	373-3437
	David Boynton	335-5008
	Wayne Gagné	941-5659
	Libby Powell	988-4956
Education	Suzan Harada(Chair)	845-6704
	Ray Tabata	948-8191
	David Boynton	335-5008
Field Trips	Andrew Engilis(Chair)	
	Peter Donaldson	456-5662
	Suzan Harada	845-6704
	Robert Pyle	262-4046
Finance	Audrey Newman(Chair)	732-7572
	Mary Engilis	
	Norris Henthorne	
	Marie Morin	533-7530
	Michael Ord	
	Robert Pyle	262-4046
Grants	Sheila Conant(Chair)	988-3960
	Robert Kinsey	
	Clifford Smith	
	C. Causey Whittow	
Mail Distrb.	Leilani Pyle	
Membership	Robert Pyle(Chair)	262-4046
	Susan Schenck	488-4974
Programs	Peter Stine(Chair)	395-2191
Publicity	Vacant	
Special Pubs.	Sheila Conant(Chair)	948-8241
	Phillip Bruner	293-3820
	George Campbell	941-1356
	Norris Henthorne	
	Robert Pyle	262-4046
Sales	Martha McDaniel(Chair)	235-6636

'ELEPAIO

Editors	Marie Morin, Peter Galloway (Send articles to Marie Morin, 1415 Victoria St. #1515, Honolulu, Hawaii 96822)
Production	Lee Bauer, Robert Pyle, Susan Schenck, Joel Simasko, Jill Sondeen, and Irene Judd

ISLAND REPRESENTATIVES

Maui	Mary Evanson	572-9724
Lanai	Peter Connally	565-6242
Kauai	Winona Sears	822-3045

IF NOT A MEMBER, PLEASE JOIN US

JOINT MEMBERSHIP
(National and Hawaii Audubon Societies)

Individual	$ 30.00
Family	38.00
Sustaining	50.00
Supporting	100.00
Contributing	250.00
Donor	500.00
Life (single payment)	1500.00
Dual Life (single payment)	2000.00

Special rates for full-time students and Senior Citizens (65 years of age or older) are available. Please write for application form.

LOCAL MEMBERSHIP
(Hawaii Audubon Society only)

Regular	$ 6.00
Junior (18 and under)	3.00
Subscriber (non-Hawaii residents)	6.00
Life (payable in three equal annual installments)	150.00

All Local Memberships and Subscriptions are for a calendar year January through December. New Local Members and late-renewing members who send in dues through September may obtain all previous issues of 'Elepaio in that calendar year, upon request and reimbursement to the Society for mailing costs. Dues received after September are applied to membership extended through the following calendar year, but do not include previous issues of 'Elepaio in the current year.

CALENDAR OF EVENTS

Dec. 9 (Mon.) Board meeting at 3663 Alani Dr. at 7 pm. Call S. Conant at 948-8241.
Dec. 16 (Mon.) Annual meeting at McCully-Moiliili Library at 7:30 pm. See page 72.
Dec. 21 (Sat.) Waipio, Oahu Christmas Count. D. Bremer, Compiler (623-7613).
Dec. 21 (Sat.) Lihue, Kauai Christmas Count. W. Sears, Compiler (822-3045).
Dec. 22 (Sun.) Honolulu, Oahu Christmas Count. B. Pyle, Compiler (262-4046).
Dec. 28 (Sat.) Waimea, Kauai Christmas Count. A. De La Cruz (335-9975).
Dec. 29 (Sun.) Kapaa, Kauai Christmas Count. B. Steenhof (826-9233).
Jan. 4 (Sat.) Volcano, Hawaii Christmas Count. L. Katahira (967-7416).

TABLE OF CONTENTS

Vol. 46, No. 6, December 1985

Jarvis, Howland and Baker Islands--A Bird's-Eye View
Peggy Ferris.....51
H-3 Update.....54
Checklist of the Birds of Micronesia
Peter Pyle and John Engbring.....57
Gleanings from the Literature
Review by Leilani Pyle.....69
Waipio Field Trip Report October 1985
Peggy Hodge.....70
October Meeting Report
Betty L. Johnson.....71

By-laws available by request.

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

FORWARDING AND
ADDRESS CORRECTION REQUESTED

HAWAII AUDUBON SOCIETY