

# 'ELEPAIO

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## BISHOP MUSEUM'S FIRST HAWAIIAN BIRDS: THE MILLS COLLECTION

by Anita Manning

Bishop Museum's collection of Hawaiian birds is among the finest in the world. The foundation of this internationally known collection is a group of birds assembled by J. D. Mills. During the 19th and 20th centuries, Mills birds have been consulted and cited by specialists around the world. Yet very little was known of Mills or the origin of the collection. My recent research has focused on three broad questions: Who was J. D. Mills? When and where might he have acquired the birds? How did Bishop Museum acquire the birds? Much of the material which follows is based on Manning (1978), an in-depth personal history as well as data on his non-Hawaiian natural history collections. New material below includes historical information recently located, exchanges, and current catalog numbers of birds not in the Bishop Museum.

### Personal Life

James (Jimmy) Dawkins Mills, a native of England (Mills 1887b), arrived in Honolulu March 11, 1851 (Index n.d.), at age 35. On September 13, 1851, he was issued a retail license to do business in Hilo (Goodale 1851). For the next thirty-six years, Mills was proprietor of a Hilo dry goods store at 15 Church Street, now renamed Haili Street, (Hitchcock 1897). On November 21, 1861, Mills was commissioned as Hilo's Agent for Native Seamen. (Dominis 1861), serving until November 1867 (Mills 1867). When any Hawaiian seaman was shipped, paid, or discharged, the Agent was present (Hawaii 1859). Contemporaneously with Mills' appointment as Agent for Native Seamen, he was appointed Hilo's Harbor Master (Polynesian 1861). James D. Mills died on May 11, 1887 (Daily Herald 1887), at age 71.

Newspaper obituaries reveal that Mills was a collector -- of paintings, of curios, as they were then called, and most importantly, of birds. Perhaps it was Mills' avocation as a collector which caused the Hawaiian Gazette's anonymous Hilo correspondent, Archimedes, to write in an obituary, "He has always been noted for his eccentricities in his style of life" (Hawaiian Gazette 1887a). His executors noted the existence of an outbuilding which they termed a "Curio House" (Mills 1887a). Presumably it was in this building that the natural and cultural history collections were kept. Archimedes described Mills' collections:

The deceased had a great passion for the collection of curios, of which he leaves a large lot to be disposed of consisting of native and foreign curiosities of all kinds. His pet hobby however was collecting birds, which he had stuffed and elegantly mounted in glass cases. The collection is quite extensive, containing many very rare and beautiful specimens. He also branched out in an artistic line and leaves behind him a large number of crayon and pastel pictures which will be disposed of. He delighted in marine views, and the majority of his pictures are studies in that line. He has also several of Tavernier's works, among them two volcano scenes, a view in the Redwoods, and the Yosemite Falls (Hawaiian Gazette 1887b).

The records of Mills' estate do not provide a list of his effects and there could have been natural or cultural history materials in addition to those detailed below.

Mills' ornithological specimens can be divided into two broad categories, for convenience termed foreign and Hawaiian. Mills'

foreign birds included two cases each of Australian, Malayan, and American birds and one case with Japanese and Chinese birds (Hawaiian Gazette 1889). The Australian (accession 1889.03) and Malayan (accession 1931.34) birds later came to Bishop Museum. Mills' collection included at least eighty Hawaiian bird specimens. The collection includes a few of the birds common to Hawaii's shore, ocean and fresh water. The majority of the specimens are forest birds, many now rare or extinct. Examples are Hawaiian Ō'ō (*moho nobilis*), Mamo (*Drepanis pacifica*), 'Akialoa (*Hemignathus obscurus obscurus*), Kioea (*Chaetoptila angustipluma*), 'Ula-'ai-hāwane (*Ciriodops arna*), and Hawaiian Rail (*Porzana sandwichensis*) (Bishop Museum n.d.).

#### Specimen Acquisition: How & When

Mills not only brought the collection together but was the taxidermist as well (Dole 1876). In addition, he was the field collector of many of the Hawaiian birds. He "was an ardent naturalist, and would shut up his store and disappear in the forest for weeks together. . ." (Wilson 1890-1899). On these trips, Mr. Mills had the invaluable assistance of Hawaiian bird catchers (*ibid*). It is possible that bird catchers, knowing of Mills' interest in birds, occasionally offered him birds for purchase. By their efforts to help Mills build his collection, several Hawaiians contributed substantially to the documentation of the islands' birds. Hawelu, one bird catcher who worked with Mills, obtained the Hawaiian Rail specimens (*ibid*).

The Hawaiian forest birds in Bishop Museum's Mills collection are principally indigenous to the island of Hawaii and a substantial number are endemic to only that island. No bird identified with Mills is endemic to any of the other islands in the Hawaiian chain. Thus the composition of the birds in Bishop Museum's collection suggests that Mills collected solely on the island of Hawaii (A. Ziegler pers. commun.), and primarily in 'Ōla'a, Puna District. Mills' Hawaiian Rails (Wilson 1890-1899) and the Kioea were definitely taken in 'Ōla'a between the Kilauea crater and Hawelu's halfway house (Rothschild 1893-1900) on the Hilo-Volcano road.

Mills' acquisition of specimens of Ō'ō and Mamo may have been affected by a special factor -- the pre-European kapu (prohibition) restricting these birds to the King. This kapu was codified in the 1842 laws of the Hawaiian Kingdom (Thurston 1904), but is not mentioned in the 1859 Civil Code (Hawaii 1859).

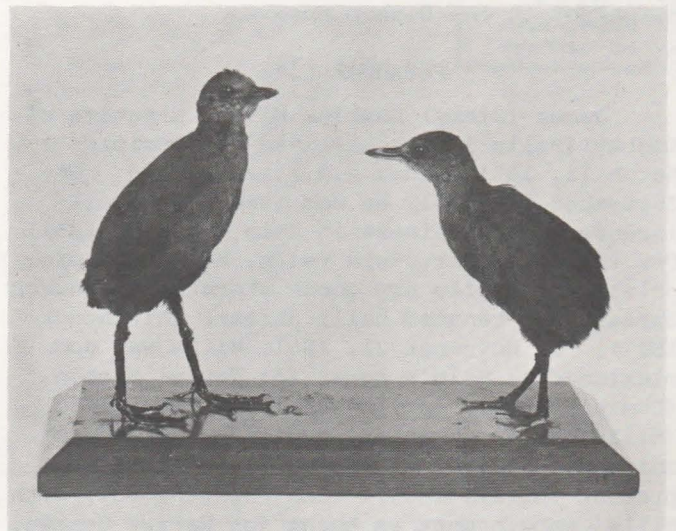
In 1848, at the Mahele, or division of lands, 'Ōla'a was reserved by the King to himself. Thus 'Ōla'a would have been included under the August 1865 kapu issued by the Governess of Hawaii for the Commissioner of Crown Lands (Davis 1865):

Public Notice is hereby given to all whom it may concern, that it is strictly forbidden to ensnare, entrap or to kill by any means the birds known as the OO and the MAMO, on the private lands of his Majesty Kamehameha V. All persons found engaging in such practices will be liable to be prosecuted (Hawaiian Gazette 1865).

The notice seems to have been the basis for an exchange of letters and petitions concerning the freedom of residents of such lands to catch birds (Lyman 1866; Manuia, Mahoe, Mahoahoa, et al., n.d.). Apparently bird catchers continued to catch birds and divide the feathers between the King and themselves (Lyman 1873; Caton 1880). The prohibition would have restricted Mills in his collecting of the two birds, although bird catchers could apparently have procured birds for him.

J. D. Mills was not part of the missionary social circle which hosted many of Hilo's prominent visitors. Nor was he a correspondent of the major international zoological associations, nor a member of Hawaiian organizations such as the Royal Hawaiian Agricultural Society. The result is few first-hand reports of Mills' collections to help determine when the collection was made.

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Two rails, collected by Mills, now in the Bishop Museum.

Bishop Museum Photo

## HAS ANNIVERSARY CELEBRATION

The 40th Anniversary Celebration is scheduled for the weekend of 2-4 November 1979, to coincide with mailing of the anniversary issue of the 'Elepaio. The celebration will include a variety of events that you won't want to miss.

### Wildlife Film

A wildlife film program is planned for Friday night, hopefully to include a National Audubon Society guest lecturer.

### Field Trips

Field trips are planned for Saturday and Sunday and will include waterbirds at Pearl Harbor and Kahuku, forest birds in the Wai-nae Mountains (hopefully at Mt. Kaala), and half-day pelagic trips for seabirds aboard the R/V MANTA out of Pokai Bay. The pelagic trips have proven particularly good for resident and migratory shearwaters (including Newell's) and petrels. Jaegers, White Terns, White-tailed Tropicbirds, and others are also regularly seen. The pelagic trips usually turn up a variety of interesting cetaceans as well, not to mention the marlin and ahi over the stern that help pay for the trips.

### Other Events

Other day-time events will include another Kaelepulu Canal cleanup in Kailua, and for those interested in competition, a "Big Day" birders event to compile the longest lists of species. At that time of year, migratory waterfowl and shorebirds will account for an important part of the list.

### Banquet at Sea Life Park

A banquet dinner is planned for Saturday night at Sea Life Park. We are particularly pleased that either Mr. Paul Howard (Senior Vice President, National Audubon Society) or Dr. Russell Peterson (President, NAS) are planning to attend the banquet, and hopefully to participate in some of the other weekend events as well. We expect there will be some other surprises at the banquet, so put it on your schedule.

### More Information

Special notice for the Anniversary, with additional information and signup sheets, will be sent out by separate mailing in September to Hawaii residents only. However, we encourage participation by mainland members and friends that may be able to schedule their visits to the Islands around this event. Contact R. J. Shallenberger (261-3741) for information.

## A PAVED ROAD TO THE MAUNA KEA SUMMIT?

The State Board of Land and Natural Resources held at public hearing in Waimea, Hawaii Island, on March 22, 1979 on proposed amendments to the Mauna Kea Plan concerning the summit access road. As Society representative and member of the Mauna Kea Advisory Committee involved in making recommendations for the Mauna Kea Plan in 1975-1976, my testimony, excerpted below, questioned the consequences of large-scale urban "improvements" on the singular natural resources of the mountain.

"The Board of Land and Natural Resources adopted the Mauna Kea Plan in final written form on June 9, 1977. The first proposed amendments to the Plan on the access road appear in print only in the briefly-worded legal public hearing notice. There seems to be no proposal on how the exact wording would be revised in the section of the Plan on SUMMIT ACCESS ROAD.

"The Plan (p. 8) presently reads: 'The summit access road from Hale Pohaku shall not be paved but shall have road safety devices. Vehicular use shall be limited to four-wheel drive vehicle from the picnic area above Hale Pohaku to the summit.'

"The public hearing file of the Department of Land and Natural Resources contains letters from the University of Hawaii requesting road improvements and access controls. This material indicates what the Institute for Astronomy wants. A February 23, 1979 letter from the UH Director of Administration contains the statement: 'We are anxious to see the Master Plan revised to allow for a paved road.'

"We ask the Board to look at the potential impacts of a paved summit road and more technological development.

"1) The beauty and uniqueness of Mauna Kea is recognized in its designation as a National Natural Landmark. The mountain dominates this island--a superb and priceless natural resource of Hawaii's people.

"2) Governor Ariyoshi directed in 1974 that the Mauna Kea Advisory Committee represent a broad spectrum of Big Island residents and users of the mountain. The strongest recommendations of the committee concerned astronomy development. "The committee recommended in 1979 that the number of observatories be limited to the six already approved by the Board and that there be no further expansion. It was the committee's finding that the present telescopes 'appear to be adequate for the presently known needs and functions of the Institute for Astronomy in research and graduate training.' The committee also said that 'Limiting development to six observatories will preserve the

remaining scenic profile and visual qualities of the mountain.'

"Another strong recommendation was that 'the public should be allowed access under certain conditions to the summit throughout the year,' in 4-wheel drive vehicles only, and that road safety devices be installed, but the road 'should not be paved.'

"We continue to give full support to those recommendations -- for a safe, unpaved road with costs and maintenance shared by the principal users.

"A paved road will result in unwanted traffic increase to the summit, along with more litter, pollution and degradation of that fragile alpine region. Several years ago the astronomers pointed out the human health hazards from rapid climbs at high elevations.

"Inevitably, a paved road will lead to demands for more observatories, more support facilities downslope and power lines running from the Saddle Road to the summit. Would that be in the best interest of that magnificent natural treasure and of the people who live here permanently?

"3) The three newest telescopes under construction are not yet in operation, but newspaper accounts tell of three more being planned for Mauna Kea:

- (1) a Vienna (Austria) University Observatory
- (2) a National Radio Astronomy Observatory
- (3) a California Institute of Technology Observatory.

"We read that Mauna Kea has been named by Cal Tech as the 'prime candidate' for locating the world's largest millimeter-wave telescope. We read that the National Radio Astronomy Observatory 'has selected Mauna Kea as the site for a 25-meter radio telescope'.

"4) Consider the impact of radio astronomy installations on other scientific and communications uses of Mauna Kea. On January 13, 1978 the Board approved a Conservation District Use Application submitted by the National Weather Service for improvements in their telemetry system at Mauna Kea to upgrade the reliability of the tsunami warning system for a maximum of five years. At the request of the Institute for Astronomy, the permit carried the restriction that 'removal and relocation of the system will occur sooner should the University complete installation of a highly sensitive radio telescope which will necessitate the phase-out of all radio frequency transmissions from Mauna Kea's summit.'

"Should communications uses of Mauna Kea for disaster warning systems for tsunami, earth-

quakes, floods and volcanic eruptions -- or ordinary radio and television transmission -- be denied to Big Island residents?

"5) What are the predictable consequences of a two-lane paved highway to the summit for the ancient Hawaiian adze quarry, pristine Lake Waiau and the Mauna Kea Ice Age Natural Area?

"6) What are the likely impacts of urban 'improvements' on native ecosystems -- the mamane forest, endangered species habitats, and the plant and animal communities above treeline?

"7) Six observatories and their support facilities on one small oceanic island already is an overwhelming contribution to international astronomy. Further domination of Mauna Kea by a single-interest group will create a precarious overload.

"Governor Ariyoshi called Mauna Kea 'one of Hawaii's most precious natural resources.' Let us treat it that way -- with respect and aloha."

*Mae E. Mull*  
P.O. Box 275  
Volcano, Hi 96785

#### ALOHA TO NEW MEMBERS

The Society welcomes the following new members and hopes that they will join in our activities to further the protection of Hawaii's native wildlife:

Joint with National: Darlene Babin, Ewa Beach; Beverly Beer, APO San Francisco; Tomasa F. Bunkley, Kailua-Kona; Betty Callahan, Honolulu; Cathy Ching, Kahului; Daniel Dzurisin, Volcano National Park; Dr. Charlotte M. Florine, Honolulu; William Gilluly, Agana, Guam; David S. Gorham, Honolulu; Maja Gossom, Pahoa; Erin M. Hall, Honolulu; R. Henderson, Hilo; R. S. Henderson, Kailua; Patty S. Iwamoto, Honolulu; Myrtle K. Kaapu, Hauula; Dr. G. R. Ludwig, Hilo; Walther Matell, Honolulu; Mr. and Mrs. James W. Mazurek, APO San Francisco; Edward J. McClellan, Waianae; Gary L. Naftel, Honolulu; Sue Peabody, Hoolehua; Annie K. Puaa, Honolulu; William H. Sage IV, Honolulu; James Sankey, Wailuku; Mr. and Mrs. Thomas M. Shields, Kailua; M. Simabuku, Honolulu; B. Stuhlmacher, Honolulu; James C. Tahan, New York; F. A. S. Waldron, Kamuela; and Opal Virginia Weakley, Honolulu.

Local Regular: Arno Peiterson, Kaneohe.

Local Junior: John Bloss, Honolulu.

Subscriber: James Kenney, Watertown, MA.

MAHALO NUI LOA to longtime Life Member Frances Campbell DeGear who has sent a generous contribution to the Society-

## MILLS COLLECTION: continued from p.36

In 1859 William Harper Pease, surveyor and conchologist, visited fellow naturalist Andrew Garrett in Hilo. Pease left Honolulu on the KINAU December 31, 1858 (Pacific Commercial Advertiser 1859a) and returned to Honolulu on the MARIA January 21, 1859 (Pacific Commercial Advertiser 1859b). This is the only known trip W. H. Pease made to the island of Hawaii (A. Kay pers. commun; J. C. Mann pers. commun.). Pease may have been recalling events of this trip when he wrote to Dr. J. E. Gray in 1861: "I notice in a late number of the 'Annals of Natural History' a description of a species of bird living in our islands. . . /of/ the genus 'Moho'. . . there is a wingless bird of small size living in the island of Hawaii, which the natives call 'Moho' . . . I have seen but a single specimen" (Gray 1862). Although it is possible that Pease saw a live bird in the field, the wording of the letter to Gray infers that the bird was in the form of a skin or mounted specimen (A. Ziegler pers. commun.). In 1890 Scott B. Wilson, British ornithologist, theorized, on the basis of the Pease-Gray correspondence alone, that Pease was describing a Mills' specimen (Wilson 1890-1899). The probability that Pease saw the Mills' birds is enhanced by the fact of the Hilo trip and that Pease met Garrett in Hilo. It seems a strong possibility that Garrett would know Mills and have introduced Pease to him.

Samuel C. Damon, publisher and editor of *The Friend*, mentions the Mills collection in an article describing a family vacation to the island of Hawaii in July 1868. Damon wrote: "While at Hilo, we saw two dried specimens of these birds [Hawaiian Rail] in the collection of Mr. Mills. They are quite a curiosity. In the same collection we also saw fourteen other species of Hawaiian birds. . ." (Friend 1868). Damon's description of the collection indicates that Mills had already acquired a goodly number of specimens.

Between February and November 1874 J. W. Boddam-Whetham visited the Volcano during his tour of the Hawaiian Islands. In Hilo, Boddam-Whetham attempted to purchase, presumably from Mills, specimens of Hawaiian Rail. Boddam-Whetham (1876) wrote, "I saw two stuffed specimens, but their owner would take no sum of money which I could offer for them. . ."

In 1876 Hawaii contributed to the centennial exhibition at Philadelphia. In January 1876, exhibit materials were being gathered

and the local Centennial Commission reported that Mills would loan his bird collection (Hawaiian Gazette 1876a.) The collection was termed "a beautiful and interesting affair", "ingeniously" arranged (Pacific Commercial Advertiser 1876a). The birds were contained in a case where they were "artistically mounted in such varied position (sic) as are best calculated to display their peculiar plumage" (Fig. 1) (Hawaiian Gazette 1876b). In Philadelphia the Mills cabinet of birds must have been an eye-catching entry. One description of the Hawaii display noted that "over a case of birds of rare species is a wreath of ferns with words interwoven and reading 'God Bless You'" (Pacific Commercial Advertiser 1876b). The unlabeled birds were accompanied by a two-page description prepared by Sanford B. Dole (1876), then a young lawyer and amateur ornithologist.



Fig. 1. Various native birds collected by Mills shown at the 1876 Philadelphia Centennial Exhibition.

*Photo from Bishop Museum Archives*

Dole's 1876 list provides insight into the composition of Mills' collection of Hawaiian birds. The list is also the source of confusion concerning two birds, the Nēnē (*Branta sandvicensis*) and the 'Alalā (*Corvus tropicus*). Dole's list includes the Nēnē although a newspaper noted that the Mills exhibit lacked a Hawaiian goose (Pacific Commercial Advertiser 1876a). The list fails to include the 'Alalā, although this bird can be clearly seen in the left foreground of a cabinet of birds believed to be the centennial display. In Dole's 1879 revised "List of the Birds of the Hawaiian Islands", he often refers to a Mills specimen as his source in describing a particular species. The "List. . ." corrects the error of attributing a Nēnē to the Mills collection but continues to omit the 'Alalā. Nor does Dole cite the 'Ula-'ai-hāwane as from Mills although it was on his 1876 list. Dole described this bird, and named it *Fringilla anna* for his wife (Dole 1878).

By 1877 Mills had greatly curtailed his collecting efforts, if not ceased them entirely. Edward P. Ramsay, zoologist at the Australian Museum, Sydney, asked Dole about acquiring Hawaiian birds for the Museum. Dole replied:

In regard to procuring the bird skins from here; there is no one in the collecting business except perhaps M. Ballieu the French Commissioner and he collects only for his correspondents at home. Mills has collected a good deal for himself but I think does not do much as of now. But if I can obtain any definite information on the subject I will let you know (Dole 1877).

Additional information about collecting dates, albeit second-hand, comes from two British collectors. Scott B. Wilson, after talking with Hilo resident Luther Severance and bird catcher Hawelu, made the general statement that Mills collected some thirty years ago or more (1860). For the Mamo, Wilson says more specifically "about 1859" (Wilson 1890-1899). Attempts I have made to locate Wilson's diaries have been unsuccessful.

George C. Munro assisted H. C. Palmer on an 1890's collecting trip for Lord Rothschild. Munro's *Birds of Hawaii* contains several references to the 1859 collecting date for Mills' specimens. For the Hawaiian Rail, Munro (1944) cites a collecting date of "about 1864". Unfortunately, Munro gives no source for his statements.

#### Bishop Museum

In March 1884 the Board of Genealogy of Hawaiian Chiefs took testimony and visited

historic sites on the island of Hawaii. A month later, the Board's *Report* noted that specimens of the Hawaiian Rail "have lately been seen in Hilo among Mr. Mills (sic) collection of birds of the Hawaiian Islands" (Poomaikelani 1884).

About this time (1884) Charles Reed Bishop began planning a museum. By October 1887, Mr. Bishop had obtained permission from the Trustees of his wife's estate to build a memorial museum on the grounds of the Kamehameha School for Boys in Kalihi (Bishop Estate 1887). The years 1884-1887 would have been the right time then for C. R. Bishop to be collecting Hawaiiana such as the Mills birds. Any attempt to determine when Bishop acquired the Hawaiian birds is frustrated by 1887 Hilo auctions whose contents are not known (Hawaiian Gazette 1887b). Two of the five Hawaiian Rails, definitely part of the estate, were sold at the Honolulu auction, May 29, 1889 (Hawaiian Gazette 1889) (Fig. 2). Purchased by Port Surveyor F. Turrill for \$260, they were resold in August to Lord Rothschild for \$1000 (Daily Bulletin 1889). One of these birds is now at

## EXECUTOR'S SALE

By order of the Executor's of the Estate of the late James D. Mills, I will sell at Public Auction at my Salesroom, Queen street,

**On Wednesday, May 29**

AT 10 O'CLOCK A. M.,

— The following property —

## THREE VOLCANO PICTURES

(By Mills),

2 Pastels "Bridal Veil Falls" and "Redwoods,"  
1 Pastel by Tavernier.

— Lot of —

## SHELLS, CORAL & CURIOS!

Large Cases of Stuffed Birds, comprising

2 Cases Australian Birds,  
2 " Malay Archipelago Birds,  
2 " American Birds,  
1 " China and Japan Birds,

— Also —

## 2 Very Rare Hawaiian Birds!

The "Moho" or Wingless Birds.

☞ **TERMS CASH!**

**JAS. F. MORGAN,**

Auctioneer.

Fig. 2. Handbill advertising auction of Mills estate in 1889.

Photo from Bishop Museum Archives

American Museum of Natural History, New York (AMNH 546232). The other bird is at the British Museum (Natural History) (BMNH 1939.12.9.553).

Scott B. Wilson provides the earliest reference to C. R. Bishop owning Mills' birds. Wilson arrived in Honolulu in April 1887 (Pacific Commercial Advertiser 1887) to make a comprehensive collection of Hawaiian birds. After collecting in the field, Wilson returned to Honolulu on March 16, 1888 (Pacific Commercial Advertiser 1888). He must have immediately contacted Charles R. Bishop. On March 19th Bishop wrote to Molokai resident Rudolf W. Meyer, asking if the Mamo could be found there, as Wilson had not found it on Hawaii or Kauai (1888a). A week later Bishop wrote again to Meyer saying, "I have given Mr. Wilson, the ornithologist, two rare birds which he has been unable to find, and he gives me four which were wanting in my collection" (1888b). There were other exchanges, for in *Aves Hawaiienses* Wilson thanks Bishop for five Mills specimens: two Mamo and one each 'Ula-'ai-hāwane, Kioea, and Hawaiian Rail. One of the Mamo was donated by Wilson to the Museum of the University of Cambridge, England, where it was remounted (Cambridge catalog 27/Dre/2/b/1). The Kioea (27/Mel/6/a/1) and the Hawaiian Rail (15/Ral/38/a/1) were also placed at Cambridge (Wilson 1890-1899). The second Mamo (now BMNH 1939.12.9.52) came into the possession of Lord Rothschild as did the 'Ula-'ai-hāwane (now AMNH 459008). Both were added to the Tring Museum (Rothschild 1893-1900).

Although Bishop Museum was founded in 1889, a public opening was not held until June 22, 1891 (Bishop Museum 1891-1898). It is not known exactly when the Mills birds were transferred to the Museum from the Bishop home on Queen Emma Street. Palmer and Munro saw the collection at the Museum on May 21, 1891, while they were in Honolulu between field trips. Munro describes the visit:

We went out to Palyarma (sic Palama) today on invitation to see Bishop's Museum. We were shewn through by Mr. Brigham the Curator, who is a fine jolly old fellow. They have a fine array of Hawaiian Curios of all sorts, but they are not yet arranged. Saw a case of mounted birds from Mills' collection among which were the saddle backed Oo, the Fringilla Anna, & the Hawaii wing-rail. . . (Munro 1891).

In 1893, Bishop Museum published Part IV of the *Preliminary Catalogue* which included the most detailed description of the Mills forest birds to date (Brigham 1893). In later years as work continued on the ornithological

collections, the shore and sea birds were added to the Museum's catalogs.

At Bishop Museum, the Mills collection has figured in three exchanges:

- 1894, Kioea (*Chaetoptila angustipluma*) to Rothschild at Tring, formerly BBM 18 now AMNH 458995 (Bishop Museum 1894);
- April 1903, Hawaii 'Ākepa (*Loxops coccinea coccinea*) to the Rijksmuseum, Leiden, Netherlands, formerly BBM 67 now Leiden 3 (Bishop Museum 1903);
- May 1922, female Hawaiian Gallinule (*Gallinula choropus sandvicensis*) to the American Museum of Natural History, formerly BBM 88 now AMNH 193234 (Bishop Museum 1922).

#### In Review

The birds could have been collected any time between Mills' arrival in 1851 and his death in 1887. Nineteenth century researchers have stated that the collection was made around 1859-1860. In the very earliest years, building a successful business would have occupied a good deal of his time. Certainly during 1861-1867 while Mills was agent for Native Seamen, he would have been loosely tied to Hilo and opportunities for extended field trips would have been restricted. Although Mills visited the Volcano House in May 1872 (Volcano House 1865-1908), it is likely that by 1876, having reached the age of sixty, he was no longer active in the field. His continued acquisition of birds through Hawelu or other bird catchers is, however, a possibility. Some time between the March 1884 Board of Genealogy trip to Hawaii and the Wilson-Bishop exchanges in March 1888, C. R. Bishop became owner of many of the Hawaiian birds formerly in the collection of J. D. Mills. Nothing more definite can be said. Despite its limited documentation, however, the collection has been an historically important resource for the study of Hawaiian birds and remains so today.

#### Acknowledgements

For encouragement, advice, and guidance, I thank Dr. A. C. Ziegler, Dr. Frank Howarth, and many others.

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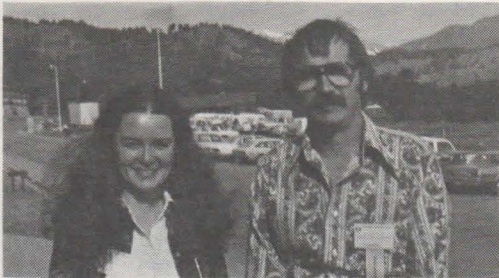


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## DELEGATES ATTEND NATIONAL CONFERENCE

President Rob Shallenberger and member Sheila Conant were delegates at the National Audubon Society (NAS) Conference at Estes Park, Colorado, June 29 to July 1, 1979. Representatives from 48 states attended, and Hawai'i received an especially warm welcome from other delegates and officers of NAS, who showed a strong interest in current Hawaiian conservation issues. The Conference provided opportunities for delegates to hear from and consult with representatives from government and industry (e.g., National Park Service, Corps of Engineers, Fish and Wildlife Service). Hawai'i delegates were able to discuss Hawaiian conservation issues with speakers and NAS officers and staff, and several NAS staff members approached Hawai'i delegates about specific problems. It is clear that the regional and national offices of NAS are aware of and eager to assist with the Hawai'i Chapter's special needs. It is equally clear that to provide this assistance NAS relies heavily on the Hawai'i membership to provide information and advice about its numerous and distinctive conservation needs.



Delegates Sheila Conant and Rob Shallenberger at Audubon Conference.

Photo by Jerome Pratt

## SYNTHETIC DEBRIS OBSERVED ON A HAWAIIAN MONK SEAL

by George H. Balazs

Injury and mortality to northern fur seals (*Callorhinus ursinus*) resulting from entanglement in scraps of net and other synthetic debris have been well documented and appear to be on the increase in recent years (Fiscus and Kozloff 1972, Kajimura 1976, Roppel et al. 1978). Kenyon and Rauzon (1977) and Fiscus et al. (1978) have suggested that such entanglement may represent a significant threat to the endangered Hawaiian monk seal (*Monachus schauinslandi*), particularly with the advent of greater commercial fishing activity in the animal's breeding and foraging habitat of the Northwestern Hawaiian Islands. Although Kenyon and Rauzon (1977) recorded two monk seals at French Frigate Shoals with long narrow scars suggestive of extended contact with lines, no direct observations have been reported of lines or other synthetic items actually tangled around a seal in the Northwestern Hawaiian Islands. The purpose of this paper is to document such a case, which I have observed during the course of field studies of the Hawaiian green turtle (*Chelonia mydas*).

On 3 October 1974 a subadult monk seal with synthetic debris wrapped around the base of its neck was observed on Whale-Skate Island at French Frigate Shoals (Fig. 1). The material was approximately 1.5 cm wide and consisted of a continuous band into which the seal had apparently placed its head. The predominant forward motion of the animal while swimming undoubtedly served to slide the band to a tight position. Except for the presence of this band, the seal appeared to be in good condition with no signs of respiratory distress or emaciation. It was not possible to determine how long the band had been on the seal; however signs of fraying and deterioration indicated that it would probably eventually break and fall off.

On a number of occasions I have observed debris of this type along the shorelines at French Frigate Shoals, Lisianski and Kure Atoll. According to McMaster and Carr (1975), these bands are manufactured from polypropylene for use in securing crates and other cargo. The boxes of frozen bait carried by Japanese longline fishing vessels are known to be secured with bands of this type. Although some of these boats operate in off-

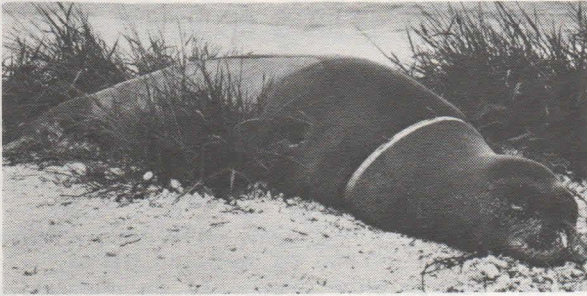


Fig. 1. Seal on Whale-Skate Is., with polypropylene banding around its neck.

Photo by George H. Balazs

shore waters of the Northwestern Hawaiian Islands, the bands could conceivably have drifted from any of numerous locations throughout the North Pacific where they were discarded.

The seal observed on Whale-Skate Island has not been recorded during subsequent trips to French Frigate Shoals. However, if the band fell off and did not leave a scar, there would be no way of recognizing this particular animal. Since the initiation of my research at French Frigate Shoals in June of 1973, I have recorded two seals with deep distinctive scars which probably resulted from lines or other entangling debris (Figs. 2 and 3). Photographs presented by Kenyon and Rauzon (1977) reveal that one of the animals that I observed was the same individual seen during the course of their field work.

#### Acknowledgements

These observations were conducted in conjunction with grants received from the State of Hawaii (Office of the Marine Affairs Coordinator) and the University of Hawaii Sea Grant College Program (04-7-158-44129). I am grateful to the Fourteenth Coast Guard District for logistical support and assistance and to the U.S. Fish and Wildlife Service, management authority of the Hawaiian Islands National Wildlife Refuge, which encompasses French Frigate Shoals. I also thank Drs. G. C. Whittow and E.W. Shallenberger for making helpful suggestions during the preparation of this manuscript.

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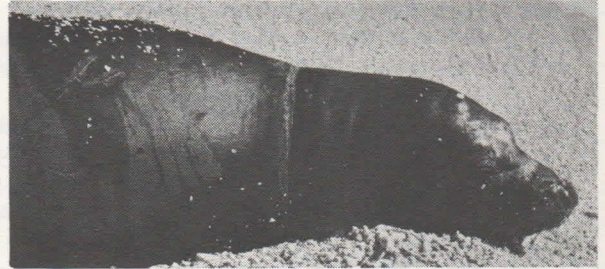


Fig. 2. Seal at East Island, Sept. 1977. A narrow scar extends around the animal's neck.

Photo by George H. Balazs

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Fig. 3. Seal on Trig Is. with abdominal scar.

Photo by George H. Balazs

## CRITICAL HABITAT REVIEW FOR WETLAND AREAS

The U.S. Fish and Wildlife Service recently distributed for review a proposed determination of critical habitat for the Hawaiian Stilt, Hawaiian Coot, and Hawaiian Gallinule. The proposal is the outcome of planning efforts of the Hawaiian Waterbird Recovery Team, of which HAS President, Robert Shallenberger, is a member. Depending upon the response to this review document, a formal proposal for critical habitat determination will appear at a later date in the Federal Register. Under the Endangered Species Act of 1973, as amended, critical habitat designation has the effect of prohibiting Federal agencies from authorizing, funding, or carrying out any action which would result in the destruction or adverse modification of those elements in the specified area necessary to the species' normal needs. The action would not automatically prohibit all actions, nor does it imply Federal land acquisition. In most cases there would be few, if any, changes in current land use patterns.

The document sent to HAS and others for review contains 17 proposed habitat areas on Niihau, Kauai, Oahu, Molokai, Maui, and Hawaii. The list includes five existing Fish and Wildlife Service refuges (Hanalei, Huleia, Pearl Harbor, James Campbell, and Kakahaia) and three other wetland areas that now receive some form of state or federal protection (Kaneohe Marine Corps Air Station ponds, Kaneohe Pond, and Kealia Pond). Other areas in the document are: Niihau (intermittent wetlands); Kauai (Mana Ponds, Lumahai estuary, Wilcox ponds, Waita reservoir, and Puu Ka Ele reservoir); Oahu (Kawainui Marsh, Pouhala Marsh at Pearl Harbor, and Ukoa Marsh); Hawaii (Opeula Pond and Aimakapa Pond).

The Society is basically in support of the critical habitat recommendations and has made suggestions only for minor revisions in the proposed boundaries. We have, however, pointed out that designation of critical habitat for these sites will, in itself, do little to insure the continued survival of the species or to maintain their present distribution in the State. We have stressed the need for expanded life history studies, leading to the formulation and then implementation of effective management measures. This is particularly important for the federal refuge program, where habitat management has lagged far behind the acquisition effort.

*R. J. Shallenberger*

## ALOHA

We are losing some friends of wildlife and the society of the continental U.S. this summer. We wish to say a word or two in gratitude for their efforts for conservation in Hawaii.

EUGENE KRIDLER recently retired from a distinguished Federal career in wildlife management, the last 15 here in Hawaii. Gene is a native of Wisconsin. After five years in the Army and Air Force, and armed with a degree in wildlife management, he spent 12 years on Fish and Wildlife Service refuges in Montana, California, Washington, and Oregon. Before coming to Hawaii in April 1964, Gene was refuge manager at Malheur National Wildlife Refuge in southeastern Oregon. He was the first permanent Fish and Wildlife Service employee assigned to Hawaii. From his small office in Kailua, he wore the many hats of refuge manager, endangered species biologist, and law enforcement officer that are now shared in the Federal building by dozens of permanent Fish and Wildlife Service employees. Gene was Wildlife Administrator until October 1973, when he took on the newly created position as Endangered Species Coordinator of the Pacific. He protected the Hawaiian Islands National Wildlife Refuge like his own backyard and was the guiding force behind an ambitious Fish and Wildlife Service wetland acquisition program that now includes national wildlife refuges on Kauai, Oahu, and Molokai. His influence has also spread to numerous other islands in the Pacific, most recently to the island of Saipan, where he was able to capture a pair of very rare Marianas Mallards at Lake Susupe. Gene gained the respect and admiration of his associates and the HAS for his unwavering adherence to strong conservation policy in the face of growing demand for conflicting use of wildlife habitat. Gene and his wife Edna will be moving to Washington state for a long deserved retirement, but it is likely that his constructive influence will be felt in the Pacific for many years to come.

J. BRENT GIEZENTANNER, the blue grass devotee of the refuge set, has left the Honolulu office of the Fish and Wildlife Service to take a position at the Regional office in Albuquerque, New Mexico. Brent began his work with the Service in 1963 as a student trainee biologist in Casper, Wyoming. He moved like a bouncing ball before coming to Hawaii, with time spent in Colorado, Oklahoma, Arizona, Utah, and Texas. He also managed to pick up a Master's degree in Wildlife Management at

Colorado State along the way. He came to Hawaii in 1976 as assistant Refuge Manager and took on full management responsibility in 1977. Brent successfully steered through the turmoil of waterbird habitat acquisition and the tri-party cooperative study in the Northwestern Hawaiian Islands. He initiated and pushed along a particularly controversial plan for acquisition of Kealia Pond on Maui and the turnover of Tern Island at French Frigate Shoals from the Coast Guard. Brent's successor will be in for some interesting times, but will greatly benefit from his work. Hopefully Brent will have a few moment's peace in his new position. We're going to miss Brent and Sherry, and their son Jay, and wish them the best of luck.

*R. J. Shallenberger*

**KAELEPULU CANAL CLEANUP**

On June 2, a dedicated group of HAS members gathered at 9 A.M. on Hamakua Drive in Kailua to lend their time and talents to a quick and dirty cleanup of Kaelepulu Canal. This small wetland site, which has become such a favorite gathering spot to watch our endangered waterbirds, has become a garbage dump as well. Manning a motley flotilla of boats, the clean up crew toiled several hours and, in the end, filled a pickup truck with garbage bags and assorted junk higher than the cab of the truck. Curious onlookers pitched in as well to help us remove everything from bottles to grocery carts. Several of us noted that MacDonal'd's products made up well over half of the paper garbage. Judging from the rate at which garbage has accumulated again since the cleanup, it looks like we'll have to attack the site on a repetitive



Canal cleaners (l to r): Bill Bustard, Susan Schenk, Al Ziegler, Bob Pyle, Rick Coleman (back), Jaan Lepson and Omer Bussen.

*Photo by R.J. Shallenberger*

basis. However, those who did participate enjoyed the day and were pleased with their accomplishment. Perhaps the only upset soul that day was the gallinule that left a nest of seven eggs long enough for us to clean up her yard. Many thanks to those who helped, particularly to the U.S. Fish and Wildlife Service for the loan of their truck.

*R. J. Shallenberger*



Audubon Navy patrols canal for litter.  
*Photo by R. J. Shallenberger*

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### SIERRA CLUB MANANA ISLAND TRIP

On 22 April, over an absolutely flat ocean, Sheila Conant and I took 20 Sierra Club members on a trip to Manana, or Rabbit Island. For some of those along, it was the first return to the island for more than 40 years, but for most it was a first experience. With a thin cloud layer and light wind to cushion the effects of the sun, we covered much of the island during the three-hour visit. Prolonged rains during the winter have left the island burrgrass green and seeding much longer into the spring than usual. Sooty Terns had flattened much of the vegetation with their nesting activities, but it did appear that the dense ground cover was inhibiting the normally crowded nesting that usually characterizes the west slope of the island. Most adults were on eggs, although in some sub-colonies nearly a third of the eggs had hatched, and chicks as old as three weeks were observed. Fortunately, there was enough space along the edge of the colony on the northwest rocky slopes to allow our group to pass to the crater rim with a minimum of disturbance.

One cooperative Bulwer's Petrel was in a crevice nesting hole near the beach cave. Although no egg was present yet, the leg band number of the bird revealed that this was a resident from the same burrow I first recorded on Manana in 1969. Presumably he (she?) had used the same or nearby site for several years before that, as he was banded by the Smithsonian Pacific Program in the mid-sixties. A few Wedge-tailed Shearwater pairs conveniently remained at the burrow entrances in the colony above the cave, so everyone had a good look at birds that are far more common at night. From the crater rim, we could see many more shearwaters on the portion of the crater floor that was bare of vegetation. It was surprising to note that the rain has encouraged the spread of tobacco to a point where it now covers most of the east crater slope and much of the floor.

Brown Noddys were surprisingly scarce for this time of year, although those that were present were on eggs on the rocky slopes near the northwest crater rim. While the group was watching the noddys at the crater rim, one Red-tailed Tropicbird appeared on cue. Another was seen later in the day on the south side of the island, but no evidence of nesting was noted. We moved to the northeast peak of the island, hoping to see humpback whales under absolutely perfect viewing conditions. Again on cue, a pod of 4 or 5 whales, including one calf, soon appeared

east of the island. Slowly moving north, they began to jump and frolic at the surface, with long pectorals waving in the air. Most agreed that the elevation of our viewing site made it one of the best and longest views we have had of whales. Trying to compete for our attention, two Red-footed Boobys passed close by the peak, but I suspect that many of the group did not even notice them.

We did not see any Black-crowned Night Herons during our visit, but tracks in the sand betrayed their recent presence. The many hatching Sooty Tern chicks are particularly vulnerable to heron predation at this time of year. We were surprised to see a flock of 21 Cattle Egrets pass close by the west side of the island, mobbed all the way by Sooty Terns. I never recorded Cattle Egrets on the island during extensive studies between 1969 and 1972, but the exploding population of this species throughout the state suggests we may see them again at the site.

No rabbits were observed during our short visit, but at least three skeletons were seen. We did not visit their favorite haunts in the crater, where I suspect they are thriving in the lush vegetation.

*R. J. Shallenberger*

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## FIELD TRIP TO POAMOHO TRAIL

Twenty-three hikers met on May 13 for the H.A.S. hike to Poamoho Trail. We met at the State Library on King Street, then reassembled at the Dole Pineapple Stand. We then drove through pineapple fields and the beginnings of native rain forest to our parking spot, about a mile from the trail-head. Probably the most numerous bird was the spotted Munia. It was often seen and heard in small flocks along the road and trail. At the parking spot we heard a Japanese Bushwarbler, and heard and saw several House Finches there along the road. Shortly after we set out we heard and saw a Shama. Further along the road we heard more Shama, as well as some 'Apapane. We also heard and saw a few Northern Cardinals. At about 9:30 we saw one of the highlights of the trip--an Oahu 'Elepaio. It was in an 'ohi'a-lehua tree next to the road. Next to the tree with the 'Elepaio was an unusual yellow-flowered 'ohi'a tree. Along the trail we heard more 'Apapane, but saw few. The 'Apapane on this trip were rather uncommon as compared to our last trip up there. Not too far along the trail, at 10:35, we heard strange calls which we tentatively identified as belonging to a couple of Shamas. Further along the trail, at 11:25, about 45 minutes before the Helemano crossover (at 1900 feet), we heard a few unusual calls that might have been the rare and elusive 'I'iwi. We were watching some 'Apapane in the 'ohi'a above when we heard a strange squeak. The 'Apapane calls were somewhat squeaky, but this one was louder, about twice as long (two seconds), and noticeably squeakier. We heard it a few more times before it flew off, but no one got a look at it. It sounded very much like the often-used description of a rusty hinge. Unfortunately, no one in our group was familiar with the 'I'iwi, so we couldn't be sure about it. After about 25 minutes we saw another highlight. Not a bird this time but a rare and endangered *Achatinella* tree snail. 'Amakihi were heard only rarely and not seen at all, but the ubiquitous Japanese White-eye was, as usual, easily seen. Near the top, only white-eyes and 'Apapane were found. When we reached the crest we were greeted by an incredible panorama of the Windward side from a vantage point high above Punaluu Valley. There we found some 'ohelo plants and an *Achatinella* and a *Succinea* snail, both on a puahanui plant. The trip down was uneventful, but the 'Apapane seemed more

common. All in all, the 'Elepaio, possible 'I'iwi, and rare tree snails made for a successful and extremely enjoyable hike.

Jaan Lepson

## RECENT GLEANINGS FROM THE FEDERAL REGISTER

From time to time, "gleanings" from the scientific literature are published in the 'Elepaio to keep our readers up on pertinent research. However, in our conservation role, the most important document to watch for potentially significant changes to fish and wildlife laws and regulations is the *Federal Register*. Notices of intent to prepare federal environmental impact statements and proposed changes to lists of protected species are also published in the F.R. None of us has the time to read a document that often runs hundreds of pages each day, but members of HAS are usually aware of the most important notices in the F.R. Some of the more pertinent notices that have appeared in recent issues of the F.R. include:

(1) Interim Rules on the Endangered Species Review Board and the Endangered Species Committee (published June 8, 1979). These rules describe the functions of review boards and the E.S.C., established as a result of 1978 amendments to the Endangered Species Act of 1973. These amendments established a process by which a Federal agency could apply for an exemption to section 7 of the Act, the section which prohibits a Federal agency from authorizing, funding or carrying out an action which jeopardizes the continued existence of endangered or threatened species or results in adverse modification or destruction of critical habitats. These rules describe the criteria under which an exemption application is reviewed.

(2) Review of the Status of ten birds and two mammals from Guam (published May 18, 1979). As a result of a petition from the Dept. of Agriculture, Government of Guam, the Fish and Wildlife Service published this notice in the F.R. to obtain pertinent information on these species to aid in determining whether or not they should be formally proposed for listing as threatened or endangered species. The proposal is the result of research data on Guam wildlife accumulated over several years, but the most intensive field work has been conducted over the last year by Mark Jenkins, an ornithologist em-

ployed by the Guam Aquatic and Wildlife Resources Division. Results of a recent study by Ralph and Sakai ('*Elepaio* 40:20-26, 1979) also shed light on the condition of Guam wildlife. As a result of many factors, including some that are very poorly understood, the native forest birds of Guam are now confined for the most part to a narrow strip of limestone forest around the northern half of the island.

(3) Notice of Status Review for Wildlife Classified as Endangered or Threatened Prior to 1975 (published May 21, 1979). The Endangered Species Act of 1973, as amended in 1978, requires the Fish and Wildlife Service to conduct a status review of all listed species at least once every five years. The purpose is to insure that the listing accurately reflects the current status of the listed species. As a result of information received, the Secretary of the Interior is authorized to reclassify species on the list or to remove them altogether. It is unlikely that there will now be substantive changes, if any, to the group of Hawaiian species that are presently on the Federal list. However, in view of the surge in forest bird and waterbird research in the last few years, we can probably expect some status changes in listed species at the next list review. We are particularly concerned that the list not include species or subspecies that do not require the extra protection that the Act affords, so that the credibility and effectiveness of the Act can be assured.

(4) Notice of Proposed Rulemaking: Fish and Wildlife Coordination Act (published May 18, 1979). This notice has more long-term significance than the others described here. The intent of the proposed rulemaking is to establish uniform procedures for federal agency compliance with the Fish and Wildlife Coordination Act (FWCA). This Act, originally passed in 1934 (and amended in 1946 and 1958) required federal agencies which propose or authorize projects or actions involving diversion, impoundment or other control of any body of water to provide wildlife conservation equal consideration with other features of the project. These agencies must also consult with state and federal wildlife agencies to determine how the anticipated adverse impacts to fish and wildlife can be reduced or compensated. The agency in Hawaii most directly affected by this Act is the U.S. Army Corps of Engineers. Under existing procedures, several thousand dollars are transferred from the Corps to the Fish and Wildlife Service each year to conduct field studies and prepare assessments on Corps civil works projects.

The rulemaking, if finalized as written, would clarify the coordination procedures that are unclear in the FWCA. It would also insure that the coordination process be compatible with new Council of Environmental Quality regulations that were recently adopted to implement the National Environmental Policy Act. Of particular significance to HAS is the provision in the FWCA rulemaking that wildlife agencies invite public participation in the process of developing FWCA reports and recommendations when significant wildlife resources are involved. Traditionally, the public has been largely excluded from the coordination process between federal agencies, so this proposed change, if adopted, would make it possible for HAS to play a more influential role than in the past. Our involvement will also be improved by a provision that allows wildlife agencies to request that action agencies hold a public hearing if there are unresolved differences between the two federal agencies regarding the implementation of recommendations to conserve fish and wildlife.

R.J. Shallenberger

## SEPTEMBER FIELD TRIP TO WAIPIO

On September 9 there will be a field trip to Waipio peninsula to observe native and migrant shorebirds and waterbirds. August and September are traditionally good months for sightings of accidental species, and so far this year has been no exception: both the ibis and a Little Blue Heron have been seen there. Recent changes in the ponds should provide several new birding locations. All interested persons should contact leader Mike Ord (737-3323) for more information.

## LAYSAN ISLAND BIRDS SEPTEMBER TOPIC

Eric Knudtson and Maura Naughton will present a talk on *Seabirds on Laysan Island*, on Monday, September 17 at the McCulley-Moiliili Library at 7:30 p.m.

These researchers have spent the last six months on remote Laysan working for the U.S. Fish and Wildlife Service doing research on a variety of seabirds, their diets and life histories. This work is a very exciting advance on our knowledge of the wildlife and will provide important information on the factors affecting the survival of these important parts of our Hawaiian native ecosystems. The talk will be illustrated.

HAWAII AUDUBON SCHEDULE OF EVENTS

\*\*FOR DETAILS, SEE INSIDE BACK COVER\*\*

September 9 (Sunday) Field Trip to Waipio Peninsula and other Pearl Harbor areas. Leader: Mike Ord (737-3323). Meet at Hawaii State Library at Punchbowl and King Streets at 7 a.m.

September 17 (Monday) Regular Meeting at 7:30 p.m. at McCulley-Moiliili Library, 2211 S. King St. Topic will be *Seabirds on Laysan Island* by Eric Knudtson and Maura Naughton.

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