



## THERMOREGULATORY BEHAVIOR OF THE LAYSAN AND BLACK-FOOTED ALBATROSS

by G. Causey Whittow

The thermoregulatory behavior of the Laysan (*Diomedea immutabilis*) and Black-footed (*D. nigripes*) Albatross at Midway Atoll (lat. 28°13'N; long. 177°23'W) in the Northwestern Hawaiian Islands was described by Howell and Bartholomew (1961). I report observations, made at French Frigate Shoals (lat. 23°52'N; long. 166°17'W), largely confirming and also extending those of Howell and Bartholomew.

As noted by Howell and Bartholomew, juvenile albatross of both species rest on their heels when heat stressed. This allows them to raise their feet; thereby avoiding contact with the hot surface of the ground and also permitting convective heat loss from the upper and lower surfaces of the feet. The birds orient themselves so that their feet are in the shade of their own shadow; in this way, the feet gain less heat by solar radiation. The juveniles will seek any shade close to their nest. In addition to these observations, which confirm those made by Howell and Bartholomew, I noted that the juvenile birds at French Frigate Shoals periodically scrape away the surface layer of substrate of their nest pits, probably to expose cooler, moister material beneath. Some juveniles leave the nest pit to sit on its elevated rim, where there is more air movement; if the nest pit is in soil mixed with guano, it can become very hot (Whittow, 1978). They also allow their wings to droop, presumably to allow ventilation of the plumage, thereby promoting convective heat loss.

The behavioral repertoire of the adults is very similar to that of the juveniles and, again, the responses of the two species to heat stress are almost identical. The adult birds partially lower themselves to balance on their heels and raise their feet. According to Howell and Bartholomew (1961), "only one

of many thousands of adults which we have observed assumed the feet-in-air posture so typical of young birds." At French Frigate Shoals, most adults of both species were seen to rest on their heels, possibly reflecting the more southerly position of the Shoals and the hotter conditions there. However, the feet are not raised as far off the ground in adults as in juveniles, so that the behavior is less obvious. The juveniles are essentially pear shaped and the position of their center of gravity probably makes it easier for them to balance on their heels. On the other hand, the adult birds seem to be more skilled at orienting themselves so that their feet are in the shade of their own shadow. At French Frigate Shoals, I also noted that the adults will seek shade if any is available, and stand on vegetation, rather than the warmer sand or soil. The scapular feathers are raised and



Fig. 1. An adult Laysan Albatross shading its chick on Tern Island, French Frigate Shoals.

the wings allowed to droop. In addition to their own behavioral devices, the adults regularly shade their chicks, particularly the younger chicks. This is accomplished by the adult standing over the chick (Fig. 1) or sitting on its heels behind it, and it is quite distinct from the brooding behavior of the very young chick by the adult.

The varied thermoregulatory behavior of the juvenile and adult Laysan and Black-footed Albatross, in conjunction with their physiological responses to heat (Howell and Bartholomew, 1961), clearly enable them to tolerate conditions which are considerably warmer than those encountered by most other species of albatross.

#### Acknowledgments

The author is grateful to the U.S. Coast Guard, Fourteenth District, for transportation to French Frigate Shoals, and to the U.S. Fish and Wildlife Service for permission to work in the Hawaiian Islands National Wildlife Refuge.

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Department of Physiology  
John A. Burns School of Medicine  
University of Hawaii  
Honolulu, Hawaii 96822



A Black-footed Albatross at sea.

Photo by W.P. Dunbar

## ADDITIONAL RECORDS OF BLACK-LEGGED KITTIWAKES FROM THE NORTHWESTERN HAWAIIAN ISLANDS

by Roger B. Clapp, Chandler S. Robbins,  
and Karl W. Kenyon

Although various gulls wander to Hawaii with some regularity, one species seldom reported is the Black-legged Kittiwake (*Rissa tridactyla*). It thus seems worth recording two previously unreported specimens.

On 29 January 1965, Robbins found the remains of a kittiwake on Eastern Island, Midway Atoll. Most of the flesh had been eaten away but the feathers, including both wings, were largely intact. The bird (USNM 567293) was in second winter plumage. It belongs to the race *R. t. pollicaris* since it has more black in the primaries than do examples of the nominate race, *R. t. tridactyla*, with which it was also compared. That the specimen should belong to the race that breeds across the North Pacific (A.O.U., 1957) is not surprising. With the possible exception of some fragmentary remains from Laysan Island (Bryan and Greenway, 1944) this is, however, the first specimen that has been critically identified to the subspecific level.

Another specimen from the Northwestern Hawaiian Islands was obtained 19 February 1977 when Mark Rauzon and Kenyon found a dead, desiccated bird on the north beach of Trig Island, French Frigate Shoals. The head, with only a few feathers of the crown and neck remaining, was retained as a specimen (USNM 526075). The color and patterning of these feathers indicate that this bird was also less than fully adult. Only enough feathers were left to determine that it was in either the first winter or second winter plumage.

In Hawaii this kittiwake has been recorded previously only from four localities in the Northwestern Hawaiian Islands: Laysan Island (remains of one bird), Pearl and Hermes Reef (remains of three birds), Kure Atoll (four birds seen, one of which was collected and the remains of one other) (Clapp and Woodward, 1968), and Midway Atoll (Berger, 1972). The basis of the Midway record is not known; it may be the specimen noted above. In any case, this is the first documented report of the occurrence of the Black-legged Kittiwake on Midway Atoll and the first record from French Frigate Shoals.

## Acknowledgments

We thank Wayne A. Hoffman and Roxie C. Laybourne for comments on the specimens and Richard C. Banks and Richard L. Zusi for comments on the manuscript.

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U.S. Fish and Wildlife Laboratory  
U.S. Fish and Wildlife Service  
National Museum of Natural History  
Washington, D.C. 20560

Migratory Bird and Habitat Research Laboratory  
U.S. Fish and Wildlife Service  
Laurel, Maryland 20810

11990 Lakeside Place  
Seattle, Washington 98125

## GLEANINGS FROM THE TECHNICAL LITERATURE

## THE RED-WHISKERED BULBUL IN HAWAII

by Charles van Riper, III, Sandra G. van Riper, and Andrew J. Berger  
Wilson Bulletin 91: 323-328, 1979

If you have the feeling you've seen a lot more red-whiskered Bulbuls in the last couple of years, you're right. In this note, that pulls together information on this species in Hawaii, the authors show the dramatic increase in numbers between 1975 and 1976, as documented by the Hawaii Audubon Society Christmas counts. For the 10 years after this bulbul was first recorded on Oahu in 1965 only 0-7 individuals were seen on the count; in 1976, 77 were seen. That year the Red-whiskered Bulbul population apparently began a period of exponential growth.

The authors also discuss nesting of the species. Twenty-three nest records show that breeding activity peaks in the spring (April-May), but nesting occurs as early as February and as late as August. The list of foods enjoyed by this bulbul includes fruits of papaya, mango, autograph tree, banyans, loquat, avocado, octopus tree, mock orange, and many palms; nectar of bottle brush and coconut palm; and insects. No wonder the Red-whiskered Bulbul now feels so much at home in Honolulu!

C. P. Ralph

A NEW SUBSPECIES OF THE ELEPAIO *Chasiempis sandwichensis*, FROM THE ISLAND OF HAWAII

by Douglas Pratt

BULL. BRITISH ORNITH. CLUB 99: 105-108, 1979

When a beginning birder in Hawaii sees a "little brown bird" in the native forest, he will be told it was an 'Elepaio. When he then looks in his bird guide at the "Elepaio pictured there, he will shake his head, "This can't be." Yes it can, when you realize that males, females, and immature 'Elepaio can have different plumages. What's more, we now have five races of 'Elepaio, all distinguishable by plumage characters. In fact, three of these races, the Kauai, the Oahu, and the Hawaii Island, were at one time considered different species. The latest word from the taxonomists is that the Big Island has three races: *Chasiempis sandwichensis sandwichensis* in the drier parts of the island, *C. s. ridgwayi* in the wet forests on the windward side, and (described in this paper) *C. s. bryani* in the mamane-naio forest of leeward Mauna Kea above 1800 m. This last race is the 'Elepaio you would see in Palila habitat and is the palest and greyest of the races. It is named after Edwin H. Bryan, Jr., of the Bishop Museum, whom many of us know and greatly appreciate.

C. P. Ralph



## FIRST OBSERVATION OF THE EUROPEAN STARLING IN HAWAII

by Bruce G. Elliott

A recent observation of at least one and probably two separate European Starlings (*Sturnus vulgaris*) appears to constitute the first recorded occurrence of the species in the Hawaiian archipelago. On 1 July 1979, a student group under my direction from the University of California Santa Cruz Wilderness Studies Program was on the island of Hawaii to study the State's endangered avifauna. At a point approximately 3.1 miles south of the junction of the Kona and the Ka Lae road near South Point, we observed a European Starling crouched low against the ground alongside the road shoulder. The bird was observed at less than 20 yards with binoculars by myself and two other observers in my car and subsequently at a few yards more distant by other students in our party. After taking appropriate notes, we continued southbound, leaving the bird still perched on the ground and, approximately four minutes later, at a point 0.7 miles beyond the initial observation site, again noticed a starling. Again we paused to confirm the identity, and this time yet another five students in our third vehicle had caught up to us and they too studied the bird at this location.

At the time of these observations, we realized that the species was not listed on the Hawaii Audubon Society 1976 Field Checklist of the Birds of Hawaii, but erroneously assumed that the species probably had arrived subsequently. We did not then realize that ours may have been the first well-noted occurrence of the species in the State. It was not until July 4 that we mentioned the observation to Mae and Bill Mull during a chance encounter in the Alakai Swamp on Kauai and they pointed out the significance of the observation. We then notified Dr. Charles van Riper III by post and subsequently prepared this note at Dr. C. John Ralph's request.

At least four members of our party could be called well-experienced birders and have all had a long tenure of familiarity with the European Starling in portions of the mainland United States. As a Supervising Wildlife Biologist for the California Department of Fish and Game, I have had numerous dealings with the species in crop depredation situa-

tions, in addition to my 32 years as a birder afield in situations where the species is usually ubiquitous and often abundant. We have reviewed the Hawaiian avifaunal literature for some reference to another established species with which we may have confused this (these) bird(s) and found none.

Both birds, seen in good light with the sun behind us, were noted in my journal as follows: "Bill narrowly coniform and distally acute; color bright yellow (lemon) throughout except at commissural juncture where somewhat more whitish. Eye dark, narrowly ringed w/pale orangeish. Legs pink. Overall length est. eight inches; body chunky (chesty) with comparatively short tail (primaries appear to extend to tip of tail). Remiges edged with tan, inner webs as visible a darker brown or even black. Forehead, crown, chin and throat glossed with iridescent (sic) purple; belly and flanks dark with a few lighter spots on flanks (birds location and posture relative to overhead light makes ventral details diff. to observe). Wing coverts and dorsum drab dark color but w/ conspicuous brownish distal contour feather tips and out edges. Feathers of chin and sides of throat w/typical Starling spiky shape. Irridescent tones quite conspicuous as bird moves its head from side to side. No calls noted. Bird reluctant to fly and not at all spooky". Our notes further recorded that neither bird was banded and that, as well as could be determined, no indication of wear on either remiges or rectrices was noted. At the time of the observation, we did not suspect that the bird was new to Hawaii, but only that it did not appear on the local Check-list.

The occurrence and potential establishment of the European Starling in Hawaii may engender adverse effects on the local avifauna, although the extent of this is only surmise. Some native Hawaiian bird species are cavity nesters and the impact of competition by the starling for nest sites is possible. There is also the potential for disruption of nesting territories by the aggressive starlings where nesting territories of the latter overlap native birds. Also, the possibility of competition for food resources exists, although the food habits of starlings,

as currently understood, would appear to be non-competitive with most Hawaiian endemics. The potential for introduction of some parasitic or pathogenic agent by an invading species is always an alarming possibility.

Perhaps the most serious threat posed by the establishment of the European Starling would be its potential impact on some aspect of the local flora, either on native plants or a commercially valuable crop. Examples of this on the mainland are too well known and abundant to enumerate here, but the impact of large flocks of starlings (and associated Icterids) on certain fruit and grain crops in the eastern and midwestern states is a continuing problem for agricultural damage control authorities. It would be prudent for local observers in the southern portion of the island of Hawaii to continue monitoring the status of this species' occurrence. Local agricultural and natural resources protection agency officials should be advised of any indication of the species' establishment.

Members of our group participating in the observations of the starlings were: Linda H. Baker, Donna and Gerald Balistreri, Gwen Cooper, Maryann Danielson, Kenneth and Rhonda Gebhart, Robert B. Hansen, Joyce Marshall, Carol and Becky Negle, and Dennis and Cynthia Van Tassel.

My appreciation to Dr. Charles van Riper III and Dr. C. John Ralph for comments on an earlier draft of the manuscript.

*California Department of Fish and Game  
2201 Garden Road  
Monterey, California 93940*

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## THE BIG DAY BIRD COUNT

In conjunction with the 40th Anniversary celebration, before dawn on November 4, six rather sleepy birders gathered in Kapiolani Park. As curious joggers passed, we hung binoculars around our necks and discussed our plans for the day. We were setting out on a Big Day Count--to identify as many bird species as possible in the 11½ hours of light we would have. The organizer of our group was Bob Pyle. He was hopeful that we could top the high count of 53 species that he had recorded with Mike Ord and Rob Shallenberger. Mike Ord was with us also and we had three birders from the Big Island--Peter Paton, Laurie McIvor and Clarice Strang, who are engaged in forest bird research with the U.S. Forest Service there. As a malihini I was looking forward to some of Oahu's best birding in the company of some of the best Island birders.

By 6:30 the sky was light enough to start tracking down the exotic birds in the shadow of Diamond Head. Aided by Mike Ord's fine ear, we found 18 exotic species which have established themselves here plus White Terns and Golden Plovers. We also enjoyed seeing 3 spectacular species--a Bishop's Weaver, a Napoleon Weaver and 2 Red-crowned Parrots which are not established. After looking at the exotics we set out to find some of Hawaii's native forest birds.

At 8:00 we drove up into cloudy, wet Manoa Valley and climbed the muddy Woodlawn trail. A fallen tree blocked our path, but a flowery eucalyptus attracted some 'Amakihi and 'Apapane within view and an 'Elepaio made its presence known with its distinctive call.

Hurrying down out of the forest to Sand Island we set up spotting scopes on the shore of Keehi Lagoon and were rewarded with views of an 'Iwa (Great Frigatebird), Brown Boobies, Pomarine Jaegers and our first straggler--an Osprey that was fishing some distance away but still unmistakable with its five-foot wingspread.

Our next destination was the canefields and ponds of the Waipio Peninsula. The birds at Waipio kept us occupied until 12:45 and included some fine species. We spotted a European Wigeon, two Garganeys, two Dowitchers, two Dunlin and a Ruff. We also found the ibis which has been in the area for 3 years. One of the day's prettiest sights was a male Red Munia that loitered in plain view at the edge of an irrigation ditch.



Big Day birders at Waipio Peninsula.

*Photo by Laurie McIvor*

The next hour found us driving north into gusty trades and heavy weekend traffic as we headed towards James Campbell NWR. The birds around Kii Pond were rather sparse but two stragglers--a Least Tern and a Canada Goose were added to our tally as we turned back south towards Kaneohe MCAS. We were running late as our Marine escort, Sgt. Al Cox, took us to Ulupau Head for a splendid view of seabirds in the crater and on Moku Manu. We added five more species to the total. When we reached the Kaluapuhi Ponds on the Marine base it was 4:40 and time for Peter, Laurie and Clarice to leave to catch a plane for the Big Island. Just as we were totalling up our species, the distinctive shape of a gull appeared over the ponds and everyone scrambled into the cars and drove off to get a look at what turned out to be an immature Ring-billed Gull.

Our Big Island birders finally left for the airport while Bob Pyle, Mike Ord and I rushed off for one last species of the day--a Western Gull.

As we finally put our binoculars away, we had been birding for 11½ hours and had traveled 136 miles by car and 2 miles on foot. While the whole group was together we had seen 61 different species (not counting the non-established cage-birds) and everyone had seen at least 54 of the species. What made the day especially memorable was the number of unusual and unexpected species we had seen. Our trip had certainly lived up to its billing as a Big Day.

Peter V. Donaldson  
202-B First St.  
Hickam AFB, Hawaii 96818

## ANNIVERSARY BASH HIGHLIGHTS!

The weekend of 2-4 November, 1979, will be remembered by many HAS members for a long time to come. Months of preparation went into an event that was so packed with things to do that it took weeks to recuperate. The 40th anniversary celebration began with a banquet at Sea Life Park on Friday evening, 2 November. Thanks to a last minute phone campaign, the guest list reached 125 people. A full moon and clear sky provided a perfect end to a rainy week. After drinks and conversation, the program began with a special show at Ocean Science Theater. The porpoises and penguins performed admirably for the crowd, but the SLP trainers introduced a special treat arranged for the HAS Anniversary, an overgrown penguin named Priscilla. Hopelessly in love with SLP star penguin, Fat Fred, "she" took to the crowd to meet the people, and ended her performance debut with a swan (?) dive from the tower.

After the show, the hungry crowd headed up the hill for a super banquet. After the repeat line at the buffet table dwindled, HAS President Rob Shallenberger took the mike for the after-dinner program. Despite competition from a chorus of Sea Lions behind the stage, 'Elepaio Editor C.J. Ralph then appeared center stage for his introduction of our honored guest speaker, National Audubon Society Western Representative Richard Martyr. Dick was obviously delighted with the opportunity to make his first visit to the Islands for this festive occasion. He provided the audience with a unique perspective on the relationship between National Audubon and HAS, and inspired us to work together for common conservation goals.

Former HAS President Sheila Conant took over the mike for the presentation of Society awards to several people that have made outstanding contributions to the Society and to wildlife conservation in the State. Beginning with Charles M. Dunn, the man who started it all forty years ago, Maile Stemmermann pre-

sented plaques and leis to those honored members who were in the audience. Edwin Bryan, a charter member who had missed the 20th anniversary celebration, was present to receive his award. Other honorary life members not present to receive their awards were Margaret Titcomb, Grenville Hatch and Blanch Pedley. Ms. Titcomb's award was presented to her at her home shortly after the anniversary weekend. Her absence at the banquet was the unfortunate result of a lack of communication for which the Board of Directors is deeply sorry. Elected to honorary life membership at the banquet was Dave Woodside, State Fish and Game biologist who was a HAS junior member and field assistant to George C. Munro when the Society began. Awards for service to the Society were announced for Bill Mull, Mae Mull and Unoyo Kojima, but unfortunately none could be present to receive their awards. A special award for service to wildlife conservation in the State of Hawaii was presented to Eugene Kridler, recently retired U.S. Fish and Wildlife Service biologist. We were all pleased to see that George Munro's daughter Ruby Munro was present for the banquet.

The Society was particularly pleased to be able to award special door prizes at the anniversary banquet. Noted wildlife artist and ornithologist, H. Douglas Pratt, graciously donated two pen and ink drawings of the Hawaii Creeper and Puaiohi. With the assistance of Ulalia Woodside and Jonathan Burr, two lucky winners were chosen and went home with these valuable prizes. Doug Pratt's excellent artwork was also on display at the banquet; five original plates to be included in a field guide to Pacific island birds were shown for the first time. Phil Bruner, one of the authors working with Pratt on this field guide, was on hand to identify the many beautiful Micronesian birds that were unfamiliar to most of those present. After viewing these lovely paintings, those of us who encouraged Society involvement in the funding of this very worthwhile project, are even more enthusiastic about our decision.



Mr. &amp; Mrs. Charles M. Dunn



Mr. &amp; Mrs. Edwin H. Bryan, Jr.



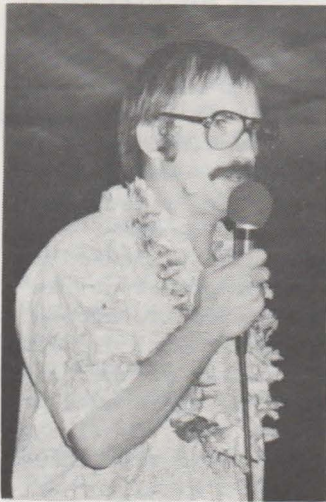
Priscilla's entrance



Priscilla, Fat Fred and friends



Priscilla's exit

President Rob Shallenberger  
trying to explain wet hair  
and penguin bite on cheekSheila Conant and John Burr  
decide who gets the Pratt  
Original door prizeNAS Western Representative  
Dick Martyr takes the podium  
with words of wisdom and  
inspiration

No shortage of food on the SLP banquet table

'Elepaio Editor C.J. Ralph  
with crib sheet in hand

AWARDS AND THINGS  
(or how Maile Stemmermann can  
kiss all the guys without  
looking conspicuous)



Dave Woodside



Our Founder, Charlie Dunn



Mike Ord



Ed Bryan



Gene Kridler



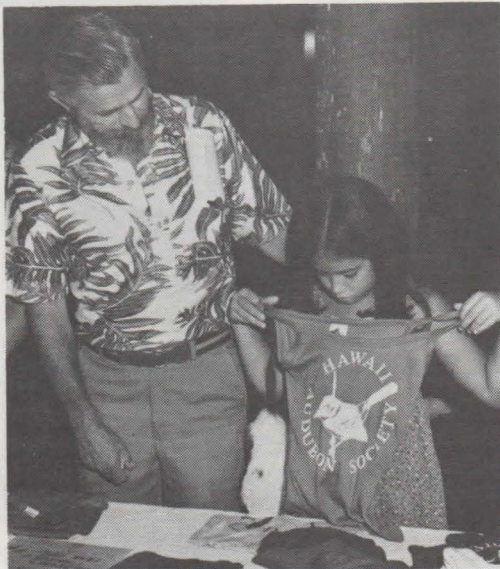
"Galapagos" filmmaker John Wilson

All banquet  
photos by  
Greg Vaughn



Dave and Leiana Woodside showing  
off their award to State Forester  
Libert Landgraf

The 40th Anniversary banquet was also the appropriate occasion to announce and display the Society's latest venture, our new T-shirts. Sporting the HAS emblem, T-shirts in several colors and styles went on sale on banquet night, and by the end of the weekend, nearly 100 had been sold. We anticipate that T-shirt sales will provide an important source of income for HAS conservation programs, so members are encouraged to purchase the shirts for themselves and friends. In the next issue of the 'Elepaio there will be an article that describes the various styles available, but until that time, T-shirts can be purchased at general meetings and by calling Sheila Conant (988-6522).



Dave and Ulalia Woodside trying T-shirts on for size  
(Photo by Greg Vaughn.)

The Anniversary weekend continued very shortly after the banquet ended with the most energetic in our midst catching a 7 a.m. pelagic seabird trip at Pokai Bay. The R/V Manta, owned and skippered by SLP Director Ed Shallenberger, was the vessel used for four half day pelagic excursions off the Waianae coast of Oahu. Nearly 50 HAS members and guests enjoyed splendid weather on these trips. Bird life was less abundant and diverse than was hoped, although many of the common seabird species were observed. Many were also treated to spinner dolphins, spotted dolphins, bottlenose dolphins, not to mention some big fish that were hoisted over the stern in the course of the weekend. We're all hoping that more pelagic trips will be scheduled in the future.



Pelagic cruise on the R/V MANTA  
(Photo by Pete Donaldson)

Many HAS members began their Saturday morning with a less glamorous excursion to the Kaelepulu Canal along Hamakua Drive in Kailua. In a three hour effort, most of the garbage in the canal was removed using a flotilla of boats, but the exercise stopped short when an active gallinule nest was discovered in the middle of the canal on floating vegetation. A few in the group of canal cleaners headed for the James Campbell National Wildlife Refuge (Kii Pond) in Kahuku in the afternoon.

The big story Saturday night was the lecture/film presentation entitled "Galapagos" by John Wilson of Canada. Jointly sponsored by the Hawaii Geographic Society, this spectacular show was presented at Mid-Pacific Auditorium both Saturday and Tuesday nights. The audience turnout was regrettably smaller than anticipated. It is unfortunate that so many missed this rare opportunity.

Sunday was also an even-filled day, beginning with pelagic trips from Pokai Bay, a field trip on Kipapa Trail in the Koolau Mountains, and for most enthusiastic birders, a Big Day event from dawn until dusk. The latter event is described in more detail elsewhere in this 'Elepaio (p. 102). Weather held throughout the day, putting a fine ending on a super weekend. All those who participated wondered why we had waited so long to hold the event, and hoped we would not wait as long to celebrate again.

## FIELD TRIP TO AIEA TRAIL

On Sunday, January 13, there will be a field trip to Aiea Trail to observe forest birds. There will be an excellent chance to see 'Elepaio, 'Amakihi, and 'Apapane, as well as several introduced forest birds, including the Shama Thrush and the Japanese Bush-warbler. Both 'I'iwi and the rare O'ahu Creeper have been reported from this trail in recent years. Hikers can take the entire loop trail or take the Aiea ridge trail that leads to the Ko'olau summit. The loop is an easy hike, the ridge trail somewhat more difficult.

The group will meet at 7 a.m. at the State Library on Punch bowl, just off South King, or at the mauka parking lot of Aiea State Park at 7:30 a.m. Bring water, lunch (if you want to take your time), binoculars, and be prepared for rain showers and a bit of mud. For more information call Omer Bussen (262-5506).

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Laura Carter, Peter Galloway, Cissie Koenig,  
Marilyn Milberger, Jack Mitchell, Cindy Shaw,  
Kammy Wong and Winnifred Yamashiro (plus the  
Editorial Committee).

RENEW LOCAL MEMBERSHIP DUES AND 'ELEPAIO  
SUBSCRIPTIONS IN JANUARY ---- \$3.00.

EVOLUTION IN HAWAIIAN DROSOPHILA  
FEATURED AT JANUARY MEETING

Like the Hawaiian Honeycreepers, Hawaiian *Drosophila* flies are one of the world's most spectacular examples of adaptive radiation. Dr. Hampton Carson, Professor of Genetics at UH Manoa, has been studying this group since he came to Hawai'i in the early 1960's. Dr. Carson will discuss how the isolation of populations seems to lead to shifts in behavior and thus possibly to the formation of new species. *Drosophila silvestris*, a particularly interesting species on the Island of Hawai'i, shows great variation in a leg character of males. The leg surface is actively used during courtship when sexual selection is likely to take place. Biologists are tracing the character by comparisons to other, closely-related species. In recognition of his outstanding research in genetics, Dr. Carson was recently elected to the highly respected National Academy of Sciences.

## NOTE TO CONTRIBUTORS TO THE 'ELEPAIO

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

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

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

## 'ELEPAIO VIA AIRMAIL

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

U.S. and Canada	\$ 3.25
Central America, Carribbean	7.00
South America, Europe, Mediterranean Africa	8.75
USSR, Asia, Africa, Pacific area	10.25

## HAWAII AUDUBON SCHEDULE OF EVENTS

(for details, see inside back page)

Jan. 7 (Monday) Board meeting at Rob Shallenberger's home, 169 Kuulei Rd., Kailua (261-3741), 7 p.m. All members welcome.

Jan. 13 (Sunday) Field trip to Aiea Trail. Leader: Omer Bussen (262-5506). Meet at the Punchbowl St. side of the State Library at 7 a.m., or mauka parking lot in Aiea State Park at 7:30 a.m.

Jan. 21 (Monday) General meeting at 7:30 p.m. Dr. Hampton Carson will talk on *Sexual Selection and Speciation in Hawaii Drosophila*. McCully-Moiliili Library, 2211 S. King St.

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

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