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THE FIRST OBSERVATION OF THE NEST OF THE OAHU 'AMAKIHI

by Stephen M. Russell and C. John Ralph

The nests of the various races of the 'Amakihi (Loxops virens) have all been found, save that of the Oahu Amakihi (L. v. chloris) (Scott et al. 1980, Berger 1981). This exception is surprising because the species is often the most common native species encountered in the native forests of Oahu, the island with the highest population of potential observers.

On June 22, 1980, while observing birds on the Waahila Ridge Trail east of Manoa Valley, we found the first nest of the race. The site was at about 400 m elevation about 1.5 km along the trail from the picnic area above St. Louis Heights. The forest is mixed introduced vegetation with a good proportion of o'hi'a (Metrosideros collina) with some koa (Acacia koa) in the vicinity.

We first observed a male carry nest material into an o'hi'a tree (Fig. 1). A few minutes later a female was seen begging from the male in the same tree. As we watched the behavior, we spotted a nest only 0.3 m from their courtship site.

NEST SITE AND MATERIAL

Although we could not approach the nest closely we could observe it from 5-10 m with 10x binoculars. The inner portion of the nest was constructed of thin fibrous plant material interwoven into a cup shaped container. The outer portion of the nest was composed of small (3-5 mm diameter) twigs. We estimated the outer diameter of the nest to be between 12 and 15 cm. The site was 7 m above the ground in the outer canopy of an ohia tree 12 m high and 40 cm d.b.h. The nest was situated among twigs 1-3 cm in diameter just below the terminal leaves of a major limb. The nest was about 0.5 m from the outermost canopy of the tree and fairly well hidden among a cluster of leaves and small branches, putting it well away from potential ground predators.

BEHAVIOR AT THE NEST

Between 08:55 and 09:48 a. m. we observed the pair of birds at the nest. We stationed ourselves in thick cover about 20 m from the nest, each of us about 90° from the other in relation to the tree.

Female Attentiveness.--During the observation period, the female visited the nest a minimum of 13 times. During at least seven of these visits, she brought small amounts of fibrous plant material. The trips came in four bouts of activity lasting 6 minutes (4 trips); 4 minutes (3 trips); 5 minutes (3 trips); and 2 minutes (3 trips). These bouts of nest attentiveness were spread out more or less evenly over the observation period. In approaching the nest, the female usually flew into the tree, perched about 0.5 m below the nest for 1-3 seconds, then flew to the nest. She then proceeded to work the material into the inner lining of the nest with a series of jabs with her bill, pausing occasionally to settle down into the nest and move around as if shaping the interior with her body.

Male Attentiveness.--The male visited the nest three times at irregular intervals over the observation period. On at least two occasions, he brought nesting material to the female. After bringing the material, performing a courtship display,

and copulating, the male moved off and sang in the vicinity.

Courtship Display.--On two of the three visits by the male, we could see the birds clearly enough to observe the sequence of behaviors. With minor variations, the male brought some nesting material, apparently small twigs, to the female's vicinity while she was working on the nest. The female then moved a short distance off the nest and began to crouch in an apparent begging display that involved fluttering her wings and gaping. Although we could not be sure, it appeared that faint "wheeze" vocalizations were being made at this time by the female. The male, holding the nest

Fig. 1. Arrow indicates location of 'Amakihi nest on Oahu ridge top.

Photo by C. J. Ralph

material, circled the female three or four times while she continued to crouch and beg. The male then approached the female, gave her the nest material, mounted her, and copulated with her. The entire sequence took about a minute.

SUBSEQUENT OBSERVATIONS

When CJR and others visited the site 10 days later, no sign of the nest could be found. The 'Amakihi were in the vicinity, but there was no activity in the former nest tree. It is not unusual for some species of birds to move a nest site one to several times before settling on nuptial quarters; in some cases the birds dismantle the old nest to reassemble it in another place (Welty 1975:292).

DISCUSSION

The nest site selected by the birds, at the outer end of a branch, was one that offered a good view of the surrounding area, as is typical of the species as a whole (Berger 1981; Ralph et al., unpublished data). This view could provide an early warning system of the approach of ground-based predators. If this site proves typical of those selected by the race, then the unconspicuous location will explain why the nest has eluded observers for so many years. The fact that most Oahu-based ornithologists to expend their natural history talents on the neighbor islands may also account for the long delay in the observation of a nest.

ACKNOWLEDGMENTS

We thank C. Kepler, C.P. Ralph, J.M. Scott for their helpful comments on the manuscript.

LITERATURE CITED

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Welty, J.C. 1975. The life of birds. Philadelphia: W. B. Saunders Co.

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FIELD TRIP TO WAIPIO PENINSULA

The field trip to Waipio Peninsula on Sunday, September 15th was taken under partially cloudy skies with one or two sprinkles that were more refreshing than annoying. Sixteen members and guests toured the main pond areas among the Oahu Sugar Company's cane fields and found several unusual birds along with large numbers of the familiar migrant shorebirds.

First stop was at the Skylark Field south of the east settling ponds. At least 4 Skylarks, and probably more, were seen flying and calling, but none were heard singing. Several Red Munias flew overhead, and a female Ring-necked Pheasant flushed from the back edge of the field.

Proceeding to the large Central Pond, the group spent nearly two hours scanning and scoping the mudflats along the west edge. Among the hundreds of Golden Plovers and Ruddy Turnstones, were at least 2 Black-bellied Plovers, 6 Pectoral Sandpipers, several Wandering Tattlers and many Sanderlings. The Pectorals were scanned carefully, but none could be positively identified as a Sharp-tailed Sandpiper despite a couple that initially appeared to be likely candidates. More than 100 Hawaiian Stilts scattered over the flats, numerous Hawaiian Coots in the water, one adult and one immature Hawaiian Gallinule together, and at least 3 Koloa provided a clean sweep of Oahu's Endangered wetland species. Pairs of Koloa flying overhead on at least three occasions may have been the same two birds. No migrant ducks were found. The single White-faced Ibis, which has never developed a white face in its 5 years of residency at Waipio (see Pratt, *'Elepaio*, 41:6, December 1980), was there today.

In the adjacent West Ponds complex, the group worked north along the main central dike to cover most of the basins, then returned along the western boundary dike. Several hundred Cattle Egrets were roosting at a few spots on the dikes. Large numbers of the regular migrant shorebirds, probably including some flushed from the Central Pond, were in the basins with exposed mud. Among these were 3 Ruffs seen well through scopes by most of the group. One was patterned gray above and bright white below with conspicuous orangish-yellow legs. It showed the white tail spots in flight. With it was a noticeably larger Ruff, much darker brown above and below with dark sooty legs. A third bird in another basin was pale buffy on the head and chest, brown above and light below. These were good examples of the variety in plumage and size that can be expected in this species in fall and winter.

Another bird in one of the West Ponds, studied well through several scopes including Peter Donaldson's Questar, was either a Spotted (North America) or Common (Eurasia) Sandpiper. The characteristic plumage and teetering that separates these two closely-related species from all others, were seen clearly. However, the two are very difficult to distinguish from each other in winter plumage. Some well-marked barring on the folded wing and the distinctly yellowish legs suggested this bird probably was a Spotted Sandpiper.

Highlight of the trip for some in the group was seeing the spectacular Bristle-thighed Curlew. First one, then a pair (perhaps including the one) were seen in flight, and then at rest on a distant dike. Two in flight were seen on several occasions as the birds moved about. One observer reported definitely seeing at least 4 individuals. One Little Tern (formerly called Least Tern) in off-season plumage was seen in rest and in flight.

A few of the group continued on to Kii Pond in the James Campbell National Wildlife Refuge near Kahuku. The pond had ample water, but no migrant ducks had yet arrived. Two Koloa and 1 Hawaiian Gallinule were in the pond along with the Hawaiian Coots. One coot in the adjacent canal was seen to have the dark ring on the bill and a small dark red spot above the bill shield. About 15 Black-crowned Night Herons and a few Hawaiian Stilts were in the area. The Lowe Aquafarm ponds were full with no mud exposed. A stop at Kuilima Pond yielded one Red-eared Waxbill but only a few coots on the pond itself.

Robert L. Pyle

REPRINTS OF ARTICLES

Reprints of articles in the *'Elepaio* are available to authors and others at the following rate. For 100 copies, $10 per page of the article. For each additional 100 copies, add $3 per page.

TAYLOR SCHOLARSHIP WINNERS

Yvonne Ching and Mae Ikawa were each recipients of a Rose Schuster Taylor Scholarship for the academic year 1981-82. The scholarship was endowed in 1976 by University of Hawaii retired Professor of English Dr. Yao Shen in honor of her friend Rose Schuster Taylor. Scholarships are awarded to undergraduates pursuing a course of study in some aspect of Hawaiian natural history.

Both recipients have been actively involved in the Hawaii Service Trip Program of the Sierra Club Hawaii Chapter. This program provides high school and college students an opportunity to actively participate in conservation activities including feral animal and noxious weed control, fencing of sensitive plant communities, and trail building. The individual projects are planned and executed almost entirely by young people like Ms. Ching and Ms. Ikawa, although more experienced naturalists provide advice.

Both women plan to pursue careers involving environmental education and research on native Hawaiian biota, and both are active members of environmental organizations here in Hawaii.

Ms. Ching is majoring in Zoology and hopes to carry her interest in and research on native stream organisms into a graduate program. One of her recent projects involved the preparation of a slide/lecture presentation on the effects of feral pigs on Hawaiian ecosystems. She also enjoys leading nature hikes for intermediate and high school students.

Ms. Ikawa is a Botany major who is particularly interested in natural resource management in Hawaii, and is pursuing a course of study which will increase her understanding of resource management, as well as prepare her to develop materials and techniques for environmental education. She continues to be very active in the Sierra Club, providing leadership in high school hiking programs. She also gives talks on Hawaiian natural history to her young hikers. She hopes to enter a graduate program in Botany after graduation from UH Manoa.

To date four of the five recipients of this scholarship have come to UH from active participation in Sierra Club activities for high school students. They all agree that the Sierra Club has been a strong stimulus for their interest in Hawaiian natural history. I congratulate and encourage the advisors of these students, especially Mr. Loren Gill (whom they all mention and respect as a dedicated naturalist and teacher), for encouraging and inspiring these young people.

Sheila Conant

NEW OFFICERS NOMINATED

In accordance with Article VII of the Constitution and By-Laws of this Society, the Nominating Committee nominates the following persons as candidates for officer and director positions in 1982:

President	Peter Galloway
1st Vice-President	David Woodside
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Director	Sean McKeown
Director	Audrey Newman

As provided by Article VII , this report will be presented to the membership at the November meeting and voted in at the December annual meeting.

George Campbell,
Chairman

NEW PACIFIC REPTILE BOOK

"Reptiles of the Solomon Islands" by Michael McCoy is a well-illustrated, 80-page handbook, treating all of the reptiles known from the Solomon Islands (including Bougainville Is., which is part of the nation of Papua New Guinea). Seventy-two species are described with information on distribution, characteristics, color in life, ecology, and life cycle. There are keys to all the species. Many of the species are illustrated, some in color. In addition, there are diagrams to assist in the use of the keys and descriptions. There is a glossary, a bibliography, instructions for preserving specimens, and an index. This is handbook No. 7 by the Wau Ecology Institute and is available for $5.60 postpaid. Order from: Bishop Museum Press, Box 19000-A, Honolulu, 96819.

ALOHA TO NEW MEMBERS

We welcome the following new members and encourage them to join in our activities.

Local: Louise Aldridge, Kailua; Shirley Bennett, Honolulu; Perry Y. Jackson, Honolulu; Donna Kelsey, Lahaina; Mark D. Merlin, Honolulu; Audrey Newman, Honolulu; Marshall Palmer, Honolulu; Neil Reimer, Honolulu; Trude V.V. Ridley, Honolulu; Mike Seeger, Kamuela; Charlene Talbot, Honolulu.

Subscriber: Glenn Crane, Mesa, Arizona; John Cushing, Santa Barbara, California; Bruce D. Eilerts, Caldwell, Indiana; Steve G. Hilliard, Baton Rouge, Louisiana; Jerry Kumery, Chicago, Illinois; Milton L. Seibert, Sunol, California; Randy Vener, Thousand Oaks, California.

Junior: Linda Vannatta, Honolulu.

New Exchanges: Bird Watcher's Digest, Marietta, Ohio; Percy Fitzpatrick Inst. of African Ornith., Rondebosch, South Africa; Instituto Nacional para la Conservacion de la Naturaleza, Madrid, Spain.

Susan Schenck

'ELEPAIO ABSTRACTED IN RUSSIAN

Readers of the *'Elepaio* may be interested in the following abstract recently received from an abstracting service in Russia that is informing Soviet scientists about articles appearing in HAS's journal.

C.J. Ralph

6.72.684. Новые наблюдения за птицами, находящимися под угрозой исчезновения, в национальных парках Гавайских островов [США]. Conant S. Recent observations of endangered birds in Hawaii's National Parks. «Elepaio», 1981, **41**, № 7, 55—61 (англ.)

В 1976—1979 гг. в двух нац. парках Гавайских о-вов проводились исследования биологии и состояния популяций птиц, находящихся под угрозой исчезновения. В их число входят в основном эндемичные виды и подвиды. Большинство лесных птиц, особенно воробьиных изучено плохо и поэтому трудно планировать меры по их охране. Надежное планирование возможно для гавайского гуся и темнохвостого буревестника, для которых имеется достаточно сведений по их биологии. В качестве первоочередных мер по охране предлагается расширение контроля над хищниками, истребляющими гусей и буревестников в местах гнездования, контроль за популяциями одичавших коз и свиней, контроль за применением пестицидов и расширение исследований по биологии угрожаемых видов птиц. 3 карты 3 табл. Библ. 27. А. Головкин

NATIONAL AUDUBON ESTABLISHES WASHINGTON WILDLIFE STAFF

The National Audubon Society has appointed three specialists to its Washington, D.C. office to strengthen the Society's programs to protect birds and other wildlife and their habitats, according to a news release from New York on October 21.

C. Eugene Knoder, former Director of the Society's Western Environmental Science Program in Denver, has been appointed Director of Wildlife Affairs.

Kenneth Berlin, formerly head of the legal staff of the U.S. Department of Justice charged with defending the nation's wildlife and marine resources laws, was appointed Counsel and Legislative Director for Wildlife.

Amos S. Eno, formerly Technical Information Specialist with the U.S. Office of Endangered Species and, prior to that, an aide to former Assistant Secretary of the Interior Nathanial P. Reed, was appointed Assistant Director of Wildlife Affairs.

"The protection of birds and other wild creatures has been the central concern of the National Audubon Society since its founding in 1905," said Russell W. Peterson, Audubon President. "While the Society is now involved in all aspects of environmental protection, we continue to devote the greatest percentage of our resources to wildlife work. Today, at a time when federal laws, agencies, and programs established to protect wildlife are threatened by an Administration that fails to understand the basic principles of ecology, having a strong wildlife team in our Washington office has become an urgent necessity."

ART EXHIBIT SLATED ON KAUAI

A showing of original paintings by Sheryl Ives Boynton will commence with an opening at the Stones Gallery in Lihue, Kauai, on December 5, 1981. Ms Boynton, whose 1981 Wildlife Week poster accompanied a previous *'Elepaio*, strives to inspire people's appreciation of Hawaiian wildlife with her paintings of native birds and plants. Additional works by the artist are on display at the Kokee Natural History Museum, which commissioned Cheryl to renovate their bird and geology exhibits. For more information call Cheryl at 335-5008 or write to P. O. Box 651, Waimea, Kauai 96796.

GLEANINGS FROM THE TECHNICAL LITERATURE

SUBSPECIES OF THE 'ELEPAIO FROM THE BIG ISLAND

Intra-Island variation in the 'Elepaio on the island of Hawaii

by H. Douglas Pratt
(Condor 82:449-458), 1980

This excellent article is a follow-up to Pratt's naming of a new subspecies of the 'Elepaio from the upper elevation mamane-naio forest in a range largely coincident with that of the Palila (Pratt, H.D. 1979. Bull. Br. Ornithol. Club. 99:105-108). Overall, Dr. Pratt presents a really excellent summary of the taxonomic status of the species.

Dr. Pratt describes the variation on the Big Island between the mamane-naio bird (subsp. *bryani*) and the wet forest birds (*ridgwayi* and *sandwichensis*). I have reproduced Pratt's Figure 5 below to show the approximate range of these birds.

Quite clear is the separation of *bryani* from other subspecies. Males of this race have generally white eyestripe and sides of head, olive brown backs and auriculars, and brownish olive crowns. The other two races tend to be a mixture of characters.

In this regard, I do have a minor criticism. Pratt, as do many authors, separates out several characters and gives each individual bird collected a score for that character. Each character is graded on a scale of 1 to 5, presumably from one end of the spectrum to the other. However, the progression for the particular scale isn't always quite clear. For instance, the scale for breast streaks in males is as follows: 1= no streaks, uniform color; 2=breast band broken posteriorly; 3=complete streaks, in center only; 4=heavily streaked; and 5=streaks confined to sides, center clear. Although I am fully confident there is a logical progression here, it isn't obvious to me. If there is not, I presume that future investigators will reanalyze his data with an eye toward this problem.

As an aside, I have observed many individuals approaching *bryani* in head color along the Mauna Loa Strip Road in habitat very similar to that occupied by *bryani* on Mauna Kea. Yet, this is in Pratt's area of the *ridgwayi* x *sandwichensis* intergrades. I should mention that Dr. Pratt, upon seeing the above remarks, wrote to me saying "Don't be too sure until you have the bird in the hand and compare it directly...with specimens of *bryani*". In any event, if these birds are similar to *bryani*, then the picture may actually be more complex than Dr. Pratt describes, a not uncommon occurrence in biology.

C. John Ralph

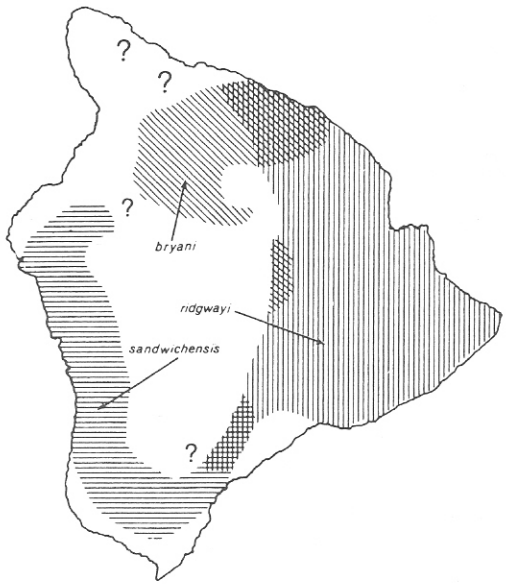

FIGURE 5. Approximate distributions of the three subspecies of *Chasiempis sandwichensis* on the island of Hawai'i. Question marks indicate areas where 'Elepaios are known to occur but which are not represented by specimens. Locality 18 (Fig. 1) is represented by a single enigmatic specimen and is thus not included in any of the ranges shown. Cross-hatching indicates intergradation.

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 especially material from the various Pacific Islands, such as the Trust Territories, Guam, 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, Hawaii 96822.

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SEE YOUR NAME IN PRINT!

The *'Elepaio* would like to publish a brief report on the monthly meeting program, so that members unable to attend could at least know the highlights. Would you like to be our reporter? Please call 988-6921 if you would.

DECEMBER PROGRAM: NATURE IN NEW ZEALAND

Our December speaker will be Dr. Mark Merlin of the General Science Department at the University of Hawaii, Manoa. He will present an illustrated talk, "Man and Nature in New Zealand: Past and Present", on the ecological impact of human activity in New Zealand and its relevance to the insular environments of the Hawaiian Islands. Mark will focus on the effects of both pre-historic Polynesian and historic European adaptation and exploitation of New Zealand's unique natural resources. He will also show some slides taken during his recent visit to that insular country on his way to attend the XIII International Botanical Congress in Sydney, Australia this past summer. 7:30 p.m. at the McCully-Moiliili Library at 2211 South King Street.

Members are strongly urged to attend this meeting as we will vote on new officers and the revisions of the By-Laws. A quorum is needed for such votes.

CHRISTMAS BIRD COUNTS

In December the Society's field activities are concentrated on the annual Christmas Bird Count. This year six counts are scheduled: three on Kauai, two on Oahu, and one on the island of Hawaii. No Maui count has been scheduled this year, but a Waimea/Kokee, Kauai count has been added. This Kauai count offers the opportunity to see a wide variety of native forest birds, including some not easily seen on other islands. See page 60 for the Compilers and dates for each count. More birders, beginners as well as experienced, are needed to help with all counts, especially those on the outer islands. The areas for most of the counts extend from the mountains to the sea, and some urban areas are included. Aside from the regular counters, people who can count around their homes and/or bird feeders, or at sea while fishing or sailing on count day, are invited to participate. Perspective participants should contact the appropriate count compiler directly. There is a participant's fee of $1.50, which goes to National Audubon Society to help (only partially) defray the costs of publishing all of the nationwide counts in the July issue of *American Birds* magazine.

HAWAII AUDUBON SCHEDULE OF EVENTS

(for details, see inside back cover)

Dec. 7 (Mon.). Board meeting at the home of George Campbell, 1717 Ala Wai Blvd. #2303 (941-1356), 7:00 p.m. All members welcomed.

Dec. 18 (FRIDAY) Annual Meeting (Note day change). *Man and Nature in New Zealand: Past and Present* by Mark Merlin, and election of officers at 7:30 p.m., McCully-Moiliili Library, 2211 South King St.

Dec. 19 (Sat.). Lihue, Kauai Christmas Bird Count. W. Sears, Compiler (822-3045).

Dec. 20 (Sun.). Honolulu Christmas Bird Count. R. Pyle, Compiler (262-4046).

Dec. 27 (Sun.). Waimea/Kokee Christmas Bird Count. D. Boynton, Compiler (335-5008).

Dec. 27 (Sun.). Waipio, Oahu Christmas Bird Count. M. Stemmerman, Compiler (949-3430).

Jan. 2 (Sat.). Kapaa, Kauai Christmas Bird Count. W. Villaneueva, Compiler (for information call W. Sars, 822-3045).

Jan. 3 (Sun.). Volcano, Hawaii Christmas Bird Count. A. Taylor, Compiler (935-7370).

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