# 'ELEPAIO

Journal of the Hawaii Audubon Society



For the Protection of Hawaii's Native Wildlife

# VOLUME 49 NUMBER 7 First Record of the Little Tern, Sterna albifrons, from Hawaii

**JULY 1989** 

Roger B. Clapp

For many years the Least Tern (Sterna antillarum) from the New World and the Little Tern (Sterna albifrons) from the Old World were considered conspecific, but the A.O.U. (1983) followed Massey (1976) and considered them separate species. Massey pointed out that nominate S. albifrons has a longer wing than S. antillarum; that there are some consistent differences in behavior and vocalizations between the two; and that the rump and tail of S. albifrons are white or very pale gray, whereas in S. antillarum they are a darker gray.

A specimen sent for identification by the Bernice P. Bishop Museum (BPBM 161866; female, largest ovum 1 mm) is Sterna albifrons, a species hitherto unknown from the United States. The bird was collected at Tern Island. French Frigate Shoals, in the Northwestern Hawaiian Islands on 2 June 1985 by L. Martin. It is in breeding plumage and measures as follows: wing chord 171 mm, tail 71 mm, tarsus 16.0 mm, and exposed culmen 25.8 mm. Chord, tail, and culmen measurements understate maximum lengths in life because the tail and wing are worn and abraded and the tip of the bill is broken off. Judging from the recently prepared skin, the bill, legs, and feet were bright yellow in life. The bill has no discernible black tip; if present, it must have been only a few millimeters long. The black of the crown tapers to a point in front, the white eye stripe extends well behind the eye, and the underparts are immaculate white. The outer two primaries are black, but these and all other primaries have white shafts. The two outermost tail feathers are pure white, but the rest are very pale gray. The gray of the tail and rump is distinctly paler than the markedly darker gray of the mantle.

The races of *S. antillarum* all have dark shafts on their outer primaries, and the gray on the rectrices is concolor with the rump and back, although the tail may appear somewhat lighter due to the white edging of these feathers. The combination of white outer primary shafts and pale rump and tail contrasting with darker back unquestionably identifies the bird from French Frigate Shoals as a Little Tern, *Sterna albifrons*. Despite many sightings of these small *Sterna* in Hawaii, and scattered sightings elsewhere in the central Pacific, the present record is the only one for Hawaii based on a specimen and is the first certain record of the occurrence of the Little Tern in Hawaii and the United States.

There is no recent study of the variation in S. albifrons throughout its range, and the number of races has not been adequately resolved. Peters (1934) listed seven races of the Little Tern in the Old World: S.a. albifrons from Europe and western Asia; S.a. guineae from western Africa; S.a. innominata from the near east and islands in the Persian Gulf: S.a. saundersi from the southern coasts of the Red Sea, the southern Persian Gulf and Somalia; S.a. pusilla from northern India, Burma, Java and Sumatra; S.a. sinensis from Korea and Japan south along the coast of Asia through the Philippines to New Guinea; and S.a. placens from Australia. Two of these races are currently in synonomy-placens with sinensis (Condon 1975) and innominata with albifrons (Vaurie 1965)—and one, saundersi, is sometimes treated as a distinct species (Vaurie 1965, Condon 1975, Ali and Ripley 1981). Sterna a. pusilla has been subsumed in S.a. sinensis by a number of authors either explicitly (Junge 1948, Gibson-Hill 1950, Checklist Committee of the Ornithological Society of New Zealand 1953, Condon 1975) or implicitly (Hitchcock 1959) but was retained as a distinct race by Vaurie (1965) and Ali and Ripley (1981.)

The races of S. albifrons are distinguished largely by subtle variations in color of rump and tail and by the color of the shafts of the primaries. Nominate albifrons, guineae, and saundersi have horn to blackish shafts on the outer primaries. Thus the white-shafted Hawaiian bird can only belong to the Asiatic sinensis or, if distinct, pusilla. Stuart Baker (1928) stated that the outer primary shaft of pusilla is pale brown and that the second primary shaft is darker. That form is also said to have a more slender bill than sinensis, and the rump and upper tail coverts are a darker gray than in sinensis. Junge (1948) considered the birds of Java and Borneo to be sinensis because the outer primary shafts were whitish, but he ignored the differences in rump and tail color. Gibson-Hill (1950) did not believe that pusilla was distinct from sinensis but gave no reasons for his opinion. Nadler (1976) kept pusilla distinct but used the name to refer to the terns breeding from Pakistan and northern India south to Ceylon and Burma. According to Nadler these birds are intermediate between nominate albifrons and sinensis. Cramp et al. (1985) pointed out that the birds of the Philippine and Sunda islands are sometimes separated as *pusilla* and cited the difference in rump color from *sinensis*, but they did not comment on the alleged differences in the primaries.

Five U.S. National Museum specimens of *albifrons* in breeding plumage, all collected in the Philippines in June and all labeled *pusilla*, have rump and tail coverts considerably darker gray than 21 *sinensis* in breeding plumage (11 from China, 5 from Thailand, 4 from Korea, and 1 from the Ryukyu Islands). The shafts of the outer three primaries of all these birds are white and do not display the differences in color indicated by Stuart Baker (1928).

Measurements were seldom mentioned in the various papers consulted, but Stuart Baker (1928) indicated that stoutness of bill is one of the characteristics distinguishing the Palearctic races of *S. albifrons*. Accordingly, I examined all the *albifrons* in breeding plumage at the USNM and measured exposed culmen, bill depth and width (measured at the posterior edge of the nostril), and tarsus. I did not measure wing and tail because they were frequently so abraded that comparisons derived from their measurement might have been misleading. Measurements of all the races of *S. albifrons* (Table 1) are larger than those of the races of *S. antillarum*; sinensis and pusilla are the largest forms. Measurements of males slightly, but consistently, exceed those of females.

The bill measurements of the Hawaiian bird agree with both pusilla and sinensis, but the tarsus seems small for those forms. The bill depth (Figure 1) of the Hawaiian bird (6.4 mm) exceeds that of all female S. antillarum measured and nearly all males (Table 1). The dimensions are also large for nominate albifrons. The gray on the rump and tail feathers of the Hawaiian bird (Figure 2) is extensive enough to tentatively assign it to pusilla (sensu Cramp et al. 1985).

Weights of S.a. pusilla are not available, but the minimum weight for 23 females of the similarly sized sinensis is 44 g (Cramp et al. 1985). The Hawaiian bird weighed only 33 g, less than any of the 59 nominate albifrons (a smaller race) listed by Cramp and less than an "exhausted" albifrons (38 g). The low weight of the Hawaiian bird suggests that it was starving when collected.

The farthest east in the Pacific that Sterna albifrons has been previously recorded with any certainty (and on the basis of a sight record) is Kwajalein Atoll in the Marshall Islands where Schipper (1985) not only described the bird well but also indicated his awareness that two species might be involved. Two other sight records nearly as far east, at Upolu, Western Samoa, and at Banaba (Ocean Island), Kiribati, were also considered records of Little Terns by Pratt et al. (1987) but seem less reliable. The stronger of these records is Child's (1979) report of a Little Tern at Upolu that mentioned gray back and white tail and rump, but it is not clear that Child thought to exclude S. antillarum when he identified the bird. The record for Banaba is based on Pearson's (1962) report, which provided no details.

There are now nearly 50 reports from Hawaii of "Least" Terns or of terns that were regarded as either Little or Least terns. All were published in 'Elepaio or American Birds and all were sight records. One additional record is a bird in breeding plumage (Figure 3) present at French Frigate Shoals from 28 June to 5 July 1980 (Schulmeister pers. comm.). Most reports before 1983 were of "Least" Terns. The possibility that either of two species might have been present was first mentioned in Peter Pyle's (1984) account of sighting a number of small Sterna on Kure and Midway atolls in the Northwestern Hawaiian Islands. Since then most reports of Least or Little terns in Hawaii have indicated some doubt as to which species was seen.

I thought it worthwhile to examine these records to determine whether any may safely be attributed to either S. albifrons or S. antillarum and to summarize the occurrence of these birds in the Hawaiian Islands. Most of the birds in the main Hawaiian Islands are from Oahu, whence there are about 20 records involving perhaps 37 individuals. There are also four records from Maui (five birds) and one from Hawaii (one bird). Nine records from the Northwestern Hawaiian Islands involve 20 individuals: three records from French Frigate Shoals (five birds including the one reported here), two from Laysan (two birds), two from Pearl and Hermes Reef (seven birds), one from Midway Atoll (five birds), and one from Kure Atoll (one bird). These totals may include a few records of the same bird on different islands (Kure and Midway, Oahu and Maui), but for the most part these records are presumably of different individuals.

These terns have been seen in all months but February and March, but there is only one record from (late) April and January and only two from December. The pattern of occurrences, particularly sighting of multiple birds, indicates a distinct peak from late June to mid-September and perhaps another in mid-May.

Examination of earlier reports of "Least Terns" in Hawaii revealed that the possibility that albifrons might occur there had not been considered, nor was anyone aware that Palearctic birds could be distinguished from Nearctic birds in the field. I could not unequivocally assign any of the earlier reports to either Least or Little terns. Reports for birds seen in May 1953 (Pyle 1953), July 1964 (Kridler 1966, Woodward 1966), and August 1973 (Kridler 1973) state that the tail was white (and thus were of Sterna albifrons). None noted that the tail was not light gray, a color that could appear white at a distance or in poor light. Consequently, these records do not demonstrate that the birds seen were S. albifrons. A tern reported in late August 1969 (Mull and Mull 1969) was said to have a gray tail but the soft part colors (i.e., dark bill) suggest an immature; immatures and winter adults of both S. albifrons and S. antillarum have gray tails.

Since the "splitting" of albifrons and antillarum, a few Hawaiian birds have been tentatively identified as Least Terns on the basis of call (Pyle 1987a), and Pratt et al. (1987) stated, with no further details, that "birds we have seen on Oahu gave definite Least Tern vocalizations." A bird seen on Oahu in late April and early May 1987 was said by Pyle (1987b) to have the pale gray of the mantle extending to the central tail and was likely a Least Tern, but observers believed the calls inconclusive evidence of either species.

#### **ACKNOWLEDGMENTS**

Richard C. Banks, M. Ralph Browning, Gary R. Graves, Richard Zusi, and Robert L. Pyle made helpful comments on early stages of the manuscript, and the last called my attention to the specimen reported herein. R.P. Schulmeister kindly loaned me the slide from which Figure 3 was prepared.

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Fig.1 Comparison of bills of Least Terns (left) and Little Terns (right). The Hawaiian Little Tern is in the middle.



Fig. 2 Dorsal surfaces of Least Terns (two on left) and Little Terns. Third specimen from the left is the Hawaiian specimen, the fourth is a *Sterna albifrons pusilla*, and the fifth and sixth are *S.a. albifrons*.



Fig. 3 Unidentified S. albifrons or S. antillarum roosting with a White Tern (Gygis alba) at French Frigate Shoals.

TABLE 1 Culmen and tarsus measurements of races of Least and Little terns1.

MALES:		Culmen						
	N	Mean	SD	Range	Mean	SD	Range	Source <sup>2</sup>
Sterna albifrons		in the		MIE P.	ik Elmayi		1000000	Second as
sinensis								
SE Asia	12	30.3	1.54	28.1-32.8	16.8	0.79	15.6-17.6	(1)
pusilla								
Ceylon	8	[30.3]	-	30 -30.5	[17.3]	-	16 -18.5	(2)
Philippines	3	28.9	1.79	27.8-30.9	16.7	0.23	16.4-16.8	(1)
albifrons								
Italy, Egypt	2	28.9	1.06	28.1-29.8	16.5	0.28	16.3-16.7	(1)
NW Europe	13	30.2	1.72	27.8-33.1	16.8	0.67	16.6-17.8	(3)
Sterna antillarum								
antillarum								
Eastern US	38	29.2	1.23	26.5-31.5	15.1	0.59	13.8-16.2	(1)
Caribbean	17	29.0	1.09	27.3-30.4	15.0	0.51	14.2-15.9	(1)
Gulf Coast US	14	28.0	0.90	25.9-29.2	15.2	0.36	14.8-15.7	(1)
athalassos	15	27.7	_	26.0-29.3				(4)
Interior US	11	27.4	1.46	25.8-30.0	14.7	0.67	13.7-15.5	(1)
staebleri	6	[27.2]	-	26.5-28				(5)
"browni"	14	[27.5]	_	26.7-28.3	_			(6)
California, Baja	11	27.5	1.25	25.5-29.7	14.9	0.52	13.8-15.5	(1)
mexicana				,				
Sonora	4	[25.3]	-	24.6-26				(6)

Races are listed from largest to smallest. Figures in brackets are the midpoint of a range stated in the literature.

<sup>&</sup>lt;sup>2</sup>Sources: (1) USNM specimens, (2) Whistler in Ali and Ripley 1981, (3) Cramp et al. 1985, (4) Burleigh and Lowery 1942, (5) Brodkorb 1940, (6) van Rossem and Hachisuka 1937, (8) BPBM specimen.

FEMALES:		Culmen			Tarsus			
	N	Mean	SD	Range	Mean	SD	Range	Source <sup>2</sup>
Sterna albifrons								TOTAL STATE OF
sinensis	10	28.9	1.52	27.0-29.2	16.8	0.49	16.0-17.4	(1)
pusilla	5	[29.5]	_	28.5-31.5	[16.7]	_	16 -17.5	(2)
Philippines	2	28.5	0.57	28.1-28.9	16.7	0.14	16.6-16.8	(1)
Hawaiian bird		>25.8			16.0			(8)
albifrons	4	29.3	2.00	27.4-31.1	16.0	0.58	15.4-16.7	(1)
NW Europe	17/18	28.7	1.13	26.7-30.8	16.6	0.72	15.1-17.8	(3)
Sterna antillarum								
antillarum								
Eastern US	15	27.4	1.05	25.6-29.0	15.1	0.67	14.0-16.2	(1)
Caribbean	13	27.4	1.37	25.2-30.4	14.8	0.45	14.0-15.5	(1)
Gulf Coast US	12	27.2	1.29	24.3-28.7	15.3	0.44	14.8-15.9	(1)
athalassos	6	25.3	_	24:4-27.2	_			(4)
Interior US	2	26.6	0.57	26.2-27.0	14.8	0.64	14.4-15.3	(1)
staebleri	4	[29.5]	_	28 -31	_			(5)
"browni"	7	[26.5]	-	26.1-27.0	_			(6)
California, Baja	6	25.8	0.99	24.1-26.9	14.8	0.48	14.4-15.7	(1)
mexicana								
Sonora	3	[25.0]	-	24.9-25.2				(6)

TABLE 2 Bill depth and width in races of Least and Little terns.

MALES:	N	Bill Depth			Bill Width			
		Mean	SD	Range	Mean	SD	Range	Source <sup>1</sup>
Sterna albifrons		Tax B						all the ball
sinensis								
SE Asia	12	6.7	0.41	6.2-7.5	4.5	0.21	4.2-4.9	(1)
pusilla								
Philippines	12	6.7	0.41	6.2-7.5	4.5	0.21	4.2-4.9	(1)
albifrons								
Italy, Egypt	2	6.3	0.00	_	4.2	0.28	4.1-4.5	(1)
NW Europe	16	6.5	0.17	6.2-6.8	_	_		(2)
Sterna antillarum								
antillarum								
Eastern US	38	6.0	0.25	5.6-6.5	4.4	0.21	4.0-4.9	(1)
Caribbean	17	6.1	0.22	5.8-6.4	4.4	0.18	4.1-4.7	(1)
Gulf Coast US	14	6.0	0.21	5.8-6.4	4.3	0.24	4.0-4.9	(1)
athalassos								
Interior US	11	5.8	0.25	5.1-6.1	4.3	0.30	3.8-4.8	(4)
"browni"								
California, Baja	11	6.0	0.19	5.7-6.2	4.5	0.30	4.0-4.9	(1)

Sources: (1) USNM specimens, (2) Cramp et al. 1985, (3) BPBM specimen.

FEMALES:		N	Bill Depth			Bill Width			
			Mean	SD	Range	Mean	SD	Range	Source <sup>1</sup>
Sterna albifrons	(III 1987 197	-Chapten	a quitab	(EFFEN)	CHI (DATE LINE)	O TODALLA IS	) ASES	THE PROPERTY OF THE	Explinite:
sinensis									
SE Asia		10	6.5	0.36	5.8-7.1	4.4	0.20	4.2-4.7	(1)
pusilla									
Philippines		2	6.7	0.00	_	4.6	0.42	4.3-4.9	(1)
Hawaiian bird		1	6.4	_	_	4.3	_		(3)
albifrons									
Europe, Egypt		4	5.6	0.05	5.5-5.6	4.1	0.13	3.9-4.2	(1)
NW Europe		18	6.0	0.28	5.3-6.3	_	-	_	(2)
Sterna antillarum									
antillarum									
Eastern US		15	5.7	0.25	5.3-6.1	4.2	0.31	3.7-4.6	(1)
Caribbean		13	5.9	0.12	5.7-6.1	4.4	0.18	4.1-4.7	(1)
Gulf Coast US	- 6	12	5.8	0.22	5.3-5.9	4.7	0.35	3.8-4.5	(1)
athalassos									
Interior US		2	5.6	0.42	5.3-5.9	4.7	0.35	4.4-4.9	(1)
"browni"									200
California, Baja		6	5.4	0.25	5.0-5.7	4.0	0.32	3.8-4.5	(1)

# **BEQUESTS**

A bequest to Hawaii Audubon Society is an excellent way to help in our conservation efforts. George Munro, tireless and enthusiastic field ornithologist and naturalist provided for a fund to be used exclusively for the protection of native dry forests. Today, the George C. Munro fund provides monies for research projects on dry forest.

Although an attorney should be consulted in the drafting of your will, a model clause for bequests is set forth below.

"I hereby, give, devise and bequeath to the Hawaii Audubon Society, Honolulu, Hawaii, the sum of

dollars (or set forth a description of the property), to be used for the general purpose of said organization."

For more information and asssistance, contact Hawaii Audubon Society, 212 Merchant Street, Suite 320, Honolulu, Hawaii 96813.

# HAS JULY FIELD TRIP

The field trip for July will be to the Booby colony at Ulupau crater on Sunday, July 9. RESERVATIONS ARE REQUIRED. This trip is limited to 25 people. Call 599-4795 for reservations. Participants should bring binoculars and sunscreen, and wear comfortable outdoor clothing. Meet at 7:30 AM in front of the State Library or 8:30 AM at the H-3 gate to Kaneohe Marine Corp Air Station.

#### HOOMALUHIA BIRD WALKS

Learn the common birds of Kaneohe on a bird walk at Hoomaluhia. Walks are scheduled for Saturday, August 19 and Sunday August 20 from 7:00 to 9:00 AM. Participants must wear comfortable, sturdy walking shoes, bring their own binoculars and mosquito repellent. Walks start from the Hoomoluhia Visitor Center. RESERVATIONS ARE REQUIRED. For reservations and more information call 235-6636.

#### HAS JULY PROGRAM

Mrs. Peggy Hodge will speak on "The Amazon River" on Monday, July 17 at 7:30 PM at the B.P. Bishop Museum's Atherton Halau. Mrs Hodge is part Brazilian, her great grandfather was an architect who helped plan the city of Rio de Janeiro. Her trip ventured 1600 miles inland from the coast, exploring native villeges and the forests.

## **NWF FELOWSHIPS**

The National Wildlife Federation is now accepting applications for environmental conservation fellowships for 1989-1990. Fellowships are for graduate students with advanced study in fields relating to wildlife, natural resource management, and protection of environmental quality. All research supported by the program must relate directly to specific and continuing activities of the Federation and its affiliates, as outlined in application materials. For applications, write to: President, National Wildlife Federation, 1400 Sixteenth Street N.W., Washington D.C. 20036-2266, Attention: Environmental Conservation Fellowships. Applications must be postmarked before July 15, 1989.



As Hawaii Audubon Society celebrates its fiftieth anniversary, photos of past HAS activities will be printed in the Elepaio. Recognize anyone? Readers are invited to jot down names and activity details and send them in to 'Elepaio, 212 Merchant Street, Room 320, Honolulu, Hawaii 96813. These historical tidbits will be added to the future issues.

### CALENDAR OF EVENTS

July 9 Field trip to Ulupau Booby Colony.

RESERVATIONS ARE REQUIRED.

Call 599-4795 for reservations.

July 10 (Mon.) Board Meeting at HAS office at

7:00 PM . Call Bruce Eilerts for

details, 599-4795

July 17 (Mon.) General Meeting at Atherton Halau, Bishop Museum at 7:30 PM.

Program: The Amazon River with

Mrs. Peggy Hodges

# MAILING ADDRESS CHANGE

Please note that HAS mailing address is

changed to:

212 Merchant Street, Room 320, Honolulu, Hawaii, 96813. Mail will no longer be received at HAS PO box.

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