

## SHORT COMMUNICATIONS

**Avifaunal Records from Eniwetok Atoll, Marshall Islands.**—Eniwetok is a coral atoll in northeastern Micronesia consisting of 42 recognized islands in a ring about 50 km in diameter. The average elevation of the islands is 1.7 m above mean high tide, and the dimensions of the individual islands are from 5 km long by 1 km wide to 0.5 km long by 0.15 km wide.

The native names of these islands recognized by the Eniwetok Marine Biology Laboratory will be used in this report, with the military names given parenthetically. The military names from Alice to Zona, in alphabetical order, apply to the northern half of the atoll, and Alvin to Rex the southern half, going clockwise in both cases.

From 3 February 1965 to 3 May 1965 we observed 20 species of eight families of birds and were able to make a comparison of bird populations and fluctuation for this period between the years 1962 and 1965 using Woodbury's (1962) report and consultation with John Bushman, a member of Woodbury's field party. Baker's (1951) Avifauna of Micronesia and Woodbury's report proved to be invaluable in determining the range and status of several species seen during our period of observation on Eniwetok.

### ANNOTATED LIST OF SPECIES

*Puffinus* spp. Shearwaters were seen frequently in flocks of 20 to 500 individuals from 30 March until the time of our departure. In marked contrast to Woodbury's (1962:56) observations of Wedge-tailed Shearwaters (*Puffinus pacificus*) in similar numbers and dates, we saw only dark-bellied shearwaters with silverish wing linings. Because of the range and date, Charles A. Ely (personal communication) assumes that these were probably either Sooty Shearwaters (*P. griseus*) or Slender-billed Shearwaters (*P. tenuirostris*) or both.

*Phaethon* spp. Red-tailed Tropicbirds (*Phaethon rubricauda*) and White-tailed Tropicbirds (*P. lepturus*) were both present. *P. lepturus* was uncommon, being seen and photographed only on Igrin (Glenn). On 30 March two adults were observed circling and frequently landing in the crown of a coconut tree. The birds were very agitated by our proximity. Two adults were seen at this same site on 20 April. From a nearby elevation the birds could be seen sitting in among the base of the fronds, but we did not attempt to locate a nest.

On 20 April a third individual with adult plumage, but lacking the long central tail feathers, was observed on Igrin (Glenn).

Woodbury (1962:59) recorded one sight record of a single *P. lepturus* on 17 March on Muzin (Kate), and Baker (1951:72) reported that this species is quite unusual on the low atolls, preferring the high cliffs of the volcanic islands of western Micronesia.

*P. rubricauda* appeared to be gregarious, as it was found on only two sites, Muzin (Kate) and Pokoni (Irwin), with nine and 13 adults, respectively. Two nests, each with a large but flightless young bird, were found in the dense undergrowth of *Pemphis* on Pokoni on 30 March, while the more open *Scaveola* bushes of Muzin on 8 April facilitated the discovery of six young. The nests were all on the ground in leaf litter, at the base of the vegetation.

*Sula leucogaster*. Brown Booby. This was the only sulid seen, and was limited to four records during the period of observation. Two of these sightings were of single individuals flying over the lagoon, 15 February and 11 March; one was seen flying along the ocean reef on Igrin (Glenn) on 13 March; one was found dead on Rigili (Leroy) on 14 April. No evidence of the large roosting colony (200 birds) reported by Woodbury (1962:59) on Ribaioni (James) could be found. Baker (1951:75) reported seeing several Brown Boobies and Red-footed Boobies (*Sula sula*) 20 miles east of Eniwetok on 7 January 1945.

*Fregata minor*. The Great Frigatebird was found roosting on one small site, Ribaioni (James), where approximately 250 individuals were present. Of these birds about 75 per cent were in adult female plumage, about 20 per cent in immature plumage, and the remaining 5 per cent in adult male plumage. As had been observed by Woodbury (1962:61), there appeared to be no nesting activity, and these birds probably represent a nonbreeding population overflowing from some other area.

*Demigretta sacra*. The Reef Heron was present in three adult color phases. From estimates

made during the three-month period, about 50 per cent of the population was mottled phase, 30 per cent white phase, and 20 per cent dark phase. The large percentage of mottled phase is probably due to the fact that often the immature birds of this species will retain a mottled plumage before molting into either the dark or white phase. Each site in the atoll, depending on its size and if inhabited or not by man, averaged two or three individuals.

*Pluvialis dominica*. Golden Plover. Seen commonly throughout the period of observation.

*Arenaria interpres*. Ruddy Turnstone. Seen commonly throughout the period of observation.

In addition, two other charadriids have been recorded for Eniwetok. These are the Black-bellied Plover (*Squatarola squatarola*) and the Ring-necked Plover (*Charadrius dubius*), both recorded by Gleize and Genelly (1945:221).

*Numenius tahitiensis*. Bristle-thighed Curlews were seen commonly and regularly on the majority of the sites we visited. From February to the first week in April individuals of this species were generally seen alone or in pairs. Around 5 April larger flocks of up to 15 birds were noticed frequently. On some sites this species appeared to be the wariest of all birds; on other sites, usually those most infrequently visited by people, it was common to have one or two of these birds investigate us from a vantage point three to five meters away.

*Numenius phaeopus*. The Whimbrel did not appear until 30 March, about the same time that the increase in the *N. tahitiensis* population was noticed. From this time on, *N. phaeopus* was seen frequently on all sites, usually in flocks averaging eight individuals.

*Limosa lapponica*. Bar-tailed Godwit. On 1 March an individual of this species was observed and photographed on Runit (Yvonne). Its size was estimated to be about three-quarters of that of *Numenius tahitiensis*. The tail was light-colored into the rump, with distinct and well-spaced barring on the outer tail feathers with the overall plumage being grayish-brown. Two other individuals of this species were observed by Knudsen on the same day in the same locale. Baker (1951:140) lists this bird as a "regular migrant in western Micronesia and probably an uncommon visitor to eastern Micronesia since it occasionally reaches Hawaii."

*Heteroscelus incanum*. The Wandering Tattler was abundant during the entire period of field work. Unlike the other shorebirds, which showed a change from nonbreeding to breeding plumage by the time of our departure, *H. incanum* displayed no recognizable changes in habit or plumage.

Differences in call note led me to suspect that two tattlers observed 17 April and 25 April on Biiijiri (Tilda) and Parry (Elmer), respectively, were Polynesian Tattlers, *Heteroscelus brevipes*. Unlike the two common calls of *H. incanum*, both of these individuals had a call phonetically resembling, *tree-a, tree-a, tree-a*, with the first syllable of the first phrase being prolonged. Besides this aberrant call note, the plumage differed from that of *H. incanum*, in that the eyeline appeared to continue over the upper mandible, and a distinct, inverted "V" of light gray extended up the breast with its vertex almost into the throat region. The plumage was generally much lighter gray than that of *H. incanum*, and the tail had considerable barring toward the rump. As it was impossible to collect either of these individuals at the time, the presence of *H. brevipes* must remain hypothetical for Eniwetok. Baker (1951:144-145) lists the Marianas and the Carolines as the eastern extreme of the range of *H. brevipes*.

*Erolia acuminata*. On 8 April one adult Sharp-tailed Sandpiper was seen on Engebi (Janet). Woodbury (1962:71) reported three observations of this species in flocks of two to 10 individuals from 8 March to 2 May. Baker (1951:152) lists this Asiatic species as regular in western Micronesia and as an uncommon visitor to eastern Micronesia. Further observations will probably indicate that *E. acuminata* should be regarded as an uncommon but regular migrant.

*Tryngites subruficollis*. Buff-breasted Sandpiper. A specimen collected by Knudsen as a fresh road kill on Eniwetok (Fred), the operations center for the atoll, on 6 April was tentatively classified as an immature *Erolia acuminata*; but closer inspection led to the conclusion that the specimen was a Buff-breasted Sandpiper. Dr. Charles Ely of the United States National Museum confirmed the identification. The specimen, a female with considerable subcutaneous fat, is now deposited in USNM no. 487491; total length, 196 mm; wing length, 123 mm; exposed culmen 18 mm; tail length, 49 mm; ovary, 10 × 2 mm, with the largest follicle 0.8 mm in diameter.

This species winters in Argentina and migrates through the Great Plains area of North America to nest in the Nearctic tundra. It is casual on the west coast of the United States, and

no record is known for *T. subruficollis* from Hawaii. Other than a record of this species from Japan by Hartert (1920:1598), no date given, our specimen represents the only known record of a range extension for *T. subruficollis* in the Western Pacific area.

Although Baker (1951:150) records the Sanderling (*Crocethia alba*) as a regular visitor in eastern Micronesia, we did not observe this species in 1965, and Woodbury (1962:70) reports only two individuals, 13 March and 19 April.

*Sterna sumatrana*. Black-naped Terns were common throughout the period and were found nesting from 8 March to 1 May along the beaches of many sites.

*Sterna fuscata*. Sooty Terns were seen flying over many areas of the atoll, but the large nesting colony of 20,000 birds reported by Woodbury (1962:71) on Rojoa (Ursala) was not present in 1965, possibly due to a significant increase in vegetation; indeed, we saw no more than 50 individuals on any one day and were unable to locate any further nesting activity of this species.

*Thalasseus bergii*. A Crested Tern was first observed on 13 March at Iгурin (Glenn). Mottling on the back made it apparent that it was immature. This species was observed more and more frequently into April and May. Two immatures were seen on 28 March at Aniyaanii (Bruce); three immatures and one adult were seen 30 March at Iгурin (Glenn); one adult was seen at Engebi (Janet) on 8 April; one adult was present on Rigili (Leroy) on 14 April; five immatures and one adult were observed on 21 April at Iгурin (Glenn).

*Anous* spp. Brown Noddies, *A. stolidus*, and White-capped Noddies, *A. tenuirostris*, were common nesters throughout the period on sites with more than a minimum amount of vegetation. *A. tenuirostris* was found as a colonial nester in trees scattered through the interior of the individual sites. *A. stolidus* nested generally in the leaf litter of small clearings and openings, but approximately one out of 30 nests was found built about one meter above the ground in low bushes. When this occurred, it was noted that the shallow cup of the stick nest was invariably lined with dead coral and discarded mollusk shells, upon which the single egg was laid.

*Gygis alba*. Fairy Terns were present everywhere, and numerous "nests" of single eggs balanced precariously on branches were found throughout the period on almost all of the sites.

Woodbury (1962:72, 75) reported the presence of two additional larids during his period of observation—Gray-backed Tern (*Sterna lunata*) and Blue-gray Noddy (*Procelsterna cerulea*). Woodbury collected a specimen of the former species in March, and he observed an individual of the latter species on 22 February. *S. lunata* is widespread throughout Micronesia due to its pelagic habits; *P. cerulea* is accidental. Baker records eight specimens taken by Yamashina (1940:678) at Bikar Atoll, Marshall Islands, as the only previous known record for *P. cerulea* in Micronesia.

Our observations, together with the additional records from other observers, constitute the known occurrences of the various species of birds on Eniwetok, including 30 species of 10 families.

#### LITERATURE CITED

- BAKER, R. H. 1951. The avifauna of Micronesia, its origin, evolution, and distribution. Univ. of Kansas Publ., Mus. Nat. Hist., 3:1-359.
- GLEIZE, D. A., and D. GENELLY. 1945. With the colors. Bull. Mass. Audubon Soc., 29:221-222.
- HARTERT, E. 1920. Die Vögel der paläarktischen Fauna. Heft XI-XII:1345-1600.
- WOODBURY, A. M. 1962. A review of the ecology of Eniwetok Atoll, Pacific Ocean. Univ. of Utah Biol. Series, pp. 1-137.
- YAMASHINA, Y. 1940. Some additions to the "List of the birds of Micronesia." Tori, 10:673-679.
- DAVID L. PEARSON and JENS W. KNUDSEN, *Department of Biology, Pacific Lutheran University, Tacoma, Washington 98447, 14 February 1966.*

**Orientation of Zugunruhe in the Rose-breasted Grosbeak, *Pheucticus ludovicianus*.**—On 20 May 1964, while netting Indigo Buntings (*Passerina cyanea*) near Ann Arbor, Michigan, for use in migratory orientation studies, I captured an adult female Rose-breasted Grosbeak (*Pheucticus*