

first published record of the Whimbrel for Utah.—C. LYNN HAYWARD, *Department of Zoology, Brigham Young University, Provo, Utah, 27 September 1965.*

The Flight Song Display of Two Taxa of Vermilion Flycatcher, genus *Pyrocephalus*.

—Although it has been long known that the Galápagos Vermilion Flycatcher, *Pyrocephalus nanus*, gives a “butterfly-like” song flight (Gifford, Proc. Calif. Acad. Sci. 4th Ser. 2, pt. 2:198–200, 1919), the song flight and song seem never to have been described. While participating in the Galápagos International Scientific Project, I observed the song flight of this species inland from Academy Bay on Isla Santa Cruz (Indefatigable) on 23 January and 21 February 1964, and on both occasions was greatly impressed by its dissimilarity to the song flight and song of the mainland Vermilion Flycatcher, *P. rubinus*, which I had previously observed in southern Arizona.

Only a single song flight was seen 23 January, whereas several birds were seen displaying repeatedly on 21 February. On both occasions the details noted were essentially the same. The flycatcher, which perched well up in tall trees, rose 15 to 25 feet above the vegetation and in a strongly undulating song flight traversed a roughly circular path of variable length. During the song flight the leading edge of the wings was perpendicular to the long axis of the body; the primaries were widely fanned and the tail was closed. The wing motion was rapid but shallow as the flycatcher dipped and rose, and at the peak of each undulation of the song flight the wings were held at about 45 degrees above the horizontal, the flycatcher briefly gliding, then flapping and gliding anew. As the flycatcher neared the peak of each undulation, it gave its song, which can be readily imitated by loudly whispering *chew wit*. The song was followed by a sharp mechanical snap, which seemed to come on the first wing stroke after the short glide at the peak of each undulation of the song flight. The snapping sound may have been a single bill snap, although its timing suggests it may have been made by the primaries snapping together during the first wing beat, which is deeper than the following wing beats, of each bout of flapping. Examination of specimens reveals no modifications of the primaries for such sound production. Each undulation of the song flight was somewhat less than one second in duration, and the period of sound production occupied about one third of this.

In addition to the flight song, perched Galápagos Vermilion Flycatchers were heard to whistle a sharp *pew* note similar to the mainland bird and to give a song *chew wit*, much like, if not the same as, the flight song. “Bill rattling” was also noted, although the details were not recorded; such sounds are not infrequently heard during the feeding sallies of other flycatchers.

The song flight of the mainland Vermilion Flycatcher has been briefly described by Beebe (*in* Bent, U.S. Natl. Museum Bull. 179, 1942). To check on the details I visited the lower Colorado River Valley in southeastern California on 6 June 1964. Vermilion Flycatchers were less common than anticipated, and only three song flights were seen, two of which were in heavy wind obscuring some of the details. Nonetheless, those details noted were similar to Beebe’s account, to my earlier recollections, and to each other. The posture of the bird during the song flight and the flight path were similar to the Galápagos birds; one bird beginning from an elevated perch showed the undulatory flight of the Galápagos birds, whereas those beginning closer to the ground eventually rose to the same altitude and the flight was little or not at all undulatory. The mainland birds erected the red crown and body feathers during the song flight, a feature not recorded either positively or negatively in the Galápagos birds. The wingbeat was slow and deep and continuous through the entire song flight, the wings being raised conspicuously higher above the body than lowered below the body, producing a butterfly-like effect. No period of gliding was recorded except as the flycatcher dropped down to land after the song flight. The song was a strident, whistled *pt pt pre-ee-eeen*, repeated several times during each song flight and slightly longer in duration than the interval between songs. The interval from song to song, including the silent period between songs, was about one second. No snapping noise was recorded from any of the birds I observed. One bird observed giving the song flight appeared to be mated to a female with a one-egg nest. Another male feeding three well-grown nestlings was not observed to give the flight song; other than the “call note” the only vocalization recorded from this bird was a song

similar to the flight song as well as a more elaborate version of that song, both given while the male was perched on a wire fence and only for a short period between twilight and sunrise. No vocalizations even vaguely suggestive of the *chew wit* of the Galápagos birds were noted in any of the California birds.

The possibility exists that the flight song of the mainland Vermilion Flycatcher is geographically variable, the South American birds being like the Galápagos birds. On 3 March 1964 Vermilion Flycatchers were observed in arid coastal Ecuador near Playas, Guayas Province. The only song recorded was transcribed *pit pit pre-ee-eeen pre-ee-eeen pre-ee-eeen*, but no birds were actually seen while singing; quite likely they were perched at the time. As the flight songs of both the Galápagos and California birds were similar to their perch songs, I suspect the flight song of the Ecuadorian bird is of the California type. Alden H. Miller informed me that the flight song of Vermilion Flycatchers in central Colombia is also of the California type. Thus the rather scanty evidence available is not indicative of major geographic variation in the flight song of mainland Vermilion Flycatchers.

Finally there exists the possibility that the flight song of Vermilion Flycatchers is seasonally variable and that I have happened to observe birds in very different stages of the annual cycle. The breeding condition of two of the California birds was firmly established. Two males of the Galápagos bird taken by A. H. Miller on 23 January, as well as the increased incidence of song between that date and late February, suggest that the Galápagos birds were in the early part of the breeding cycle. My limited experience with postbreeding Vermilion Flycatchers in California indicates that they do not sing. The literature of *Pyrocephalus* flycatchers is of little help; most publications since Bent's *Life History* appeared concern vagrant individuals. It is perhaps significant to note, however, that although the behavior of the two California males was quite different, their songs remained quite similar.

The function of the flight song is unknown. Presumably it is important in the formation and perhaps maintenance of the pair bond. The Galápagos and mainland Vermilion Flycatchers are morphologically very similar, and not infrequently they are included in the same species. My observations suggest, however, that the behavior of these birds has diverged considerably more than their morphology. Such divergence in behavior could be indicated by the continued recognition of Galápagos birds as *P. nanus*, with the understanding that they are very closely related to the mainland birds; the ultimate test, of course, cannot be made. The populations of Vermilion Flycatcher on Isla San Cristobal (Chatham) of the Galápagos Archipelago in the past have been recognized as a distinct species, *P. dubius*. Its flight song, as well as that of the birds now included in *P. nanus* inhabiting the other islands of the Galápagos Archipelago, remains unknown.

The Galápagos International Scientific Project was sponsored by the University of California and supported by National Science Foundation grant GE 2370. I am additionally grateful to Alden H. Miller for advice concerning the preparation of this report.—PAUL DE BENEDICTIS, *Museum of Vertebrate Zoology, University of California, Berkeley. (Present address: University of Michigan Museum of Zoology, Ann Arbor, Michigan.) 14 August 1965.*

Cedar Waxwing Nesting in Southern California.—Grinnell and Miller (Distribution of Birds of California, Pacific Coast Avifauna No. 27) and more recent field observations by many persons agree that the southernmost breeding record of Cedar Waxwings (*Bombycilla cedrorum*) on the Pacific Coast occurs in the vicinity of Eureka, California. Yet, in July 1964, two of these birds, accompanied by an immature in August, were repeatedly noted at Doheny State Beach in Orange County. Just once, 24 July 1964, I had witnessed one carrying apparent nesting material.

As two waxwings remained through late June 1965, I alerted my neighbor, and we both watched for signs of nesting activity. Betty Berrigan discovered the nest as three fledglings were leaving it on 7 July 1965. One, apparently ill, did not survive the first night, but the others thrived on the abundant *Myoporum* berries fed by the parent waxwings. During the next two weeks, several other competent observers watched this process, concurring that feeding of obvious offspring