

TABLE 1. Entrance orientation and success of nests of late-breeding Cactus Wrens.

Direction <sup>a</sup>	Entrance orientation		Hatching success %	Fledging success %	Nestling success %	Nest success %	Nests totally successful %	No. nests in success analysis
	N	%						
0-30	13	10.3	62.1	24.1	38.9	33.3	22.2	9
40-70	6	4.7	94.4	55.6	58.8	66.7	16.7	6
80-110	11	8.6	66.7	47.6	64.3	71.4	28.6	7
120-150	10	7.8	81.5	29.6	36.4	50.0	12.5	8
160-190	10	7.8	45.0	40.0	88.9	42.9	0.0	7
200-230	26	20.3	89.1	76.1	85.4	75.0	68.8	16
240-270	28	21.9	79.2	60.4	76.3	73.3	60.0	15
280-310	15	11.7	70.2	59.6	84.8	71.4	42.9	14
320-350	9	7.0	71.4	42.9	60.0	50.0	50.0	4

<sup>a</sup> In 30° intervals.

TABLE 2. Nesting success of Cactus Wrens in relation to nest-entrance orientation.

Orientation	Hatching success %	Fledging success %	Nestling success %	Nest success %	Nests totally successful %	No. nests
210-300 <sup>a</sup>	77.8	63.7	81.9	72.1	55.8	43
310-200 <sup>b</sup>	71.1	40.0	56.3	53.7	20.9	43
$\chi^2$	1.6	15.6 <sup>c</sup>	15.2 <sup>c</sup>	3.2	9.6 <sup>c</sup>	

<sup>a</sup> 100 continuous degrees containing the most nest-entrances.<sup>b</sup> 260 continuous degrees containing lower concentrations of nest-entrances.<sup>c</sup> Significant at the 0.05 level.

Hatching success is per cent of eggs laid to hatch, fledging success is per cent of eggs laid to fledge, nestling success is per cent of eggs hatched to fledge a young, and nest success is per cent of nests to fledge at least one young.

## RESULTS AND DISCUSSION

Entrances of nests of late-breeding (May-August) wrens were oriented significantly to the southwest, with a mean entrance direction of 246° (table 1). Such orientation was also found by Ricklefs and Hainsworth (op. cit.) who suggested that nests were built to face the predominant wind direction during the warm part of the breeding season as an adaptation to moderate nest climate. I have observed similar nest orientations for the Verdin (*Auriparus flaviceps*), which also builds an enclosed nest (Austin, unpubl. data).

The factors controlling nest placement and the significance of placement and orientation are largely unknown. The striking change in orientation of Cactus Wren nests between early and late portions of the breeding season (Ricklefs and Hainsworth, op.

cit.), apparently in relation to a single environmental factor (wind), provides an opportunity to study the effects of this single factor on nesting success.

I have success data for 86 nests of breeding Cactus Wrens (table 2). Nests oriented in the predominant direction were significantly more successful than those oriented otherwise. Thus orientation of the nest entrance appears to have an affect on its success, apparently acting at the nestling stage (table 2). These data add support to the contention that orientation into the wind during the hot part of the breeding season is an important factor in providing a suitable nest climate.

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## A MELANISTIC WHITE-TAILED TROPICBIRD

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Since Clapp and Huber (Condor 73:123, 1971) have reported an imperfect albino of the Red-tailed Tropicbird (*Phaethon rubricauda*), it seems worthwhile to put on record a melanistic individual of the White-tailed Tropicbird (*Phaethon lepturus*), especially inasmuch as it has some bearing on geographic variation in the species. The bird in question (Yale Pea-

body Museum, YPM 44055) is an adult male taken on 3 April 1926 at the island of Fernando de Noronha, South Atlantic Ocean, by the "Blossom" Expedition of the Cleveland Museum.

The specimen differs most markedly from the normal plumage of the species in having nearly the whole crown and nape black rather than white (fig. 1). In normal specimens, the feathers of the crown and nape have black bases and the white feathers of the upper back, throat, and upper breast have black shaft streaks of varying width. Crown feathers of juveniles are normally spotted with black and a few adults show some similar spotting but none of the many specimens examined at YPM, the American Museum of Natural History (AMNH), or the National

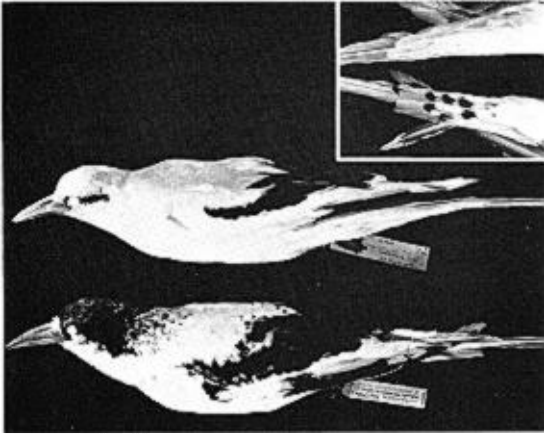


FIGURE 1. Melanistic *Phaethon lepturus*, YPM 44055, Fernando de Noronha (below) compared with normally plumaged bird USNM 434284, Ascension (above). Inset: ventral view of rectrices with melanistic bird below, normal bird above.

Museum of Natural History (USNM) shows any real approach to the condition of the melanistic bird. In the latter, some of the normally unpigmented greater and lesser secondary coverts are black and some of the scapulars are tipped with black, both combining to make the black wing bar wider. The primary coverts and the outer webs of the alular feathers are mostly black rather than white as in normal birds. The tip of each rectrix, except for the elongate middle pair, bears a conspicuous black spot (fig. 1, inset) and the shaft of each is also pigmented.

The melanistic specimen belongs to the subspecies *ascensionis* which includes the populations of Fernando de Noronha, Ascension Island, and the Gulf of Guinea. This race, as Murphy (Oceanic birds of South America, Am. Mus. Nat. Hist., N.Y., p. 802, 1936) states, has "never been satisfactorily distinguished from the typical or Indian Ocean race." However, he goes on to say (p. 803), "birds of the Bermuda-West Indies subspecies, *Phaethon lepturus catesbyi*, differ from the equatorial and South Atlantic representatives in that the black area on the outermost primary extends close to the tip; on the second and fourth from the outermost it practically reaches the tip; while the third from the outermost quill is entirely black or no more than very narrowly tipped with white. There

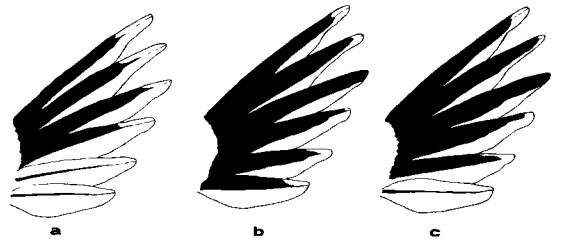


FIGURE 2. Outer primaries of *Phaethon lepturus*. a. normal *ascensionis* YPM 44061, Fernando de Noronha. b. melanistic *ascensionis* YPM 44055, Fernando de Noronha. c. normal *catesbyi* USNM 316316, Haiti.

is also much more black in the fifth from the outermost quill. All of these black marking of the remiges are remarkably conspicuous when the birds are in flight." With respect to the five outermost primaries, the melanistic specimen of *ascensionis* is identical to *catesbyi* (fig. 2). The sixth from the outermost primary has the outer web almost entirely black. The base of this web may be black in some individuals of *catesbyi* and to a lesser extent in *ascensionis* as well. The seventh from the outermost primary of the melanistic bird has a broad (4 mm), black median streak extending to within 18 mm of the tip. This primary was unpigmented, except for the shaft itself, in other specimens of the species examined.

The precise duplication of the *catesbyi* pattern in the melanistic individual of *ascensionis* suggests that this racial character of *Phaethon lepturus* may be the result of a simple melanic allele that is expressed in one population and not in the others. The presence of melanin in primaries appears to reduce wear (Averill, Condor 25:57, 1923), but it is difficult to believe that the primaries of *catesbyi* are subject to greater wear than those of all other populations of the species. Therefore the selective advantage, if any, of the allelic shift in *catesbyi* is not apparent.

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## THE USE OF WESTERN HARVESTER ANT MOUNDS AS STRUTTING LOCATIONS BY SAGE GROUSE

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On 7 April 1972 between 05:30 and 07:00, 12 male Sage Grouse (*Centrocercus urophasianus* Bonaparte) were observed strutting on mounds of the western

harvester ant (*Pogonomyrmex occidentalis* Cresson) in a grassy area of Bedell Flats, Washoe County, Nevada, at 1370 m elevation.

The 1-ha strutting ground was located in a 16-ha burned area on a flat, alluvial fan located in a basin sagebrush (*Artemisia tridentata*) dominated plant community. The burned area was dominated by cheat grass (*Bromus tectorum*) and tumble mustard (*Sisymbrium altissimum*), with small patches of invading *A. tridentata*. The grouse were often partially obscured from view by the dense tumble mustard, which averaged 0.5 m in height. A windmill at the western edge of the burned area, which is the major water source for the locality, was not functional for the first time in many years. The strutting area contained 30 *P. occidentalis* mounds per hectare with an average