

in Mexico. The observations reported here were made in northeastern Mexico at Rancho del Cielo, a biological station operated by Texas Southmost College. Rancho del Cielo is on the eastern slope of the Sierra de Guatemala about 40 km north of Ciudad Mante, Tamaulipas, in Mexico's northernmost cloud forest. The forest, at an elevation of about 1100 m, is a dense oak-sweet gum complex (Webster 1974).

On 18 March 1987, approximately one h after sunrise, we observed 5–7 male Golden-cheeked Warblers foraging near the crown of a large oak (*Quercus sartorii*). Observations through a telescope clearly revealed the combination of black back, throat, and dark line through the eye that separates the Golden-cheeked from other yellow-faced warblers. The warblers were part of a loose assemblage of 35–50 birds including Solitary Vireos (*Vireo solitarius*), Black-throated Green Warblers (*Dendroica virens*), Wilson's Warblers (*Wilsonia pusilla*), and Blue-gray Gnatcatchers (*Polioptila caerulea*). The progress of the flock was followed through several trees, most or all of which were flowering. An additional sighting of an individual was made later the same morning.

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- KENNETH W. JOHNSON, *Dept. Biology, Univ. Mary Hardin-Baylor, Belton, Texas 76513*; JOYE E. JOHNSON, *4501 Hickory Rd., Temple, Texas 76502*; RICHARD O. ALBERT, *1800 Newell Street, Alice, Texas 78332*; AND THOMAS R. ALBERT, *Box 421115, Del Rio, Texas 78842*. Received 9 Apr. 1987, accepted 20 July 1987.

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**Effect of substrate and ambient temperature on burrowing African Penguins.**—African Penguins (*Spheniscus demersus*), which breed more successfully in burrows than on the surface (Frost et al. 1976a), are subject to heat stress, which can cause them to desert their nests (Randall 1983, Williams and Cooper 1984). As burrow-nesting reduces the effects of ambient temperature extremes experienced by surface-nesting birds (Frost et al. 1976b), the incidence of surface-nesting would be expected to be higher in the austral summer than in winter when ambient temperatures are higher and insolation most intense. Also, as burrows in sandy soil are prone to collapse and flood during heavy rains (Frost et al. 1976b, pers. obs.), a higher incidence of surface-nesting would be expected in sandy areas. I tested these two hypotheses during visits to Dassen Island (33°25'S, 18°05'E), on the west coast of South Africa, where peak breeding occurs in the austral winter (June) and summer (November–December) (Cooper 1980).

From 1983 to 1985, two 200-m<sup>2</sup> burrow-nesting sites were checked for occupied nests.

Site 1 was in an area of sandy soil; Site 2 was in an area of firmly packed gravel. The numbers of surface nests and burrows in use at each site were counted during five visits in winter (June–August) and summer (February).

African Penguins nested on the surface at sandy Site 1 more frequently in winter (19 surface nests, 111 burrows) than in summer (3 surface nests, 60 burrows) ( $\chi^2 = 4.08$ ,  $df = 1$ ,  $P < 0.05$ ). Season had no effect on the number of surface nests at Site 2 ( $\chi^2 = 0.025$ ,  $df = 1$ ,  $P < 0.01$ ) (winter: 3 surface nests, 97 burrows; summer 3 surface nests, 85 burrows), which is not susceptible to burrow-flooding and collapse. In winter a significantly greater proportion of penguins nested on the surface at Site 1 (the sandy site), which was susceptible to burrow-flooding and collapse than at Site 2 ( $\chi^2 = 8.81$ ,  $P < 0.01$ ,  $df = 1$ ). In summer there was no significant difference in the proportion of surface nesters between the two sites ( $\chi^2 = 0.176$ ,  $P > 0.05$ ,  $df = 1$ ).

The results indicate that, for African Penguins, ambient temperature and insolation affect the proportion of the population that occupies surface nests. Sclaro (1984) found that Magellanic Penguins (*S. magellanicus*) show a tendency to nest in soils of high clay content compared to soils of low clay content. The results of this study confirm the tendency of penguins preferentially to burrow in suitable substrata and suggest that the quality of the burrowing substratum is important for spheniscid penguins.

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**A case of polygyny in the Black-throated Blue Warbler.**—Polygyny has been reported for only 12 of the some four dozen species of North American Parulinae (for a review, see Ford, Current Ornithol. 1:329–356, 1983). Here, we document the first reported case of polygyny in the Black-throated Blue Warbler (*Dendroica caerulescens*).