## THE EGGS OF THE BLACK HAWK-EAGLE

## by Lloyd F. Kiff Western Foundation of Vertebrate Zoology 1100 Glendon Avenue Los Angeles, California 90024

There appears to be no published account of the eggs of the Black Hawk-Eagle (Spizaetus tyrannus). Therefore, it seems worthwhile to place on record the descriptions of four infertile eggs recently laid by two females of this species in the Los Angeles Zoo. The birds were obtained by the zoo in approximately 1968 and were probably captured in Ecuador (Frank Todd pers. comm.). The eggs are now in the collection of the Western Foundation of Vertebrate Zoology (WFVZ).

On 5 February 1978 one female laid an egg (WFVZ 42,004) which is white with heavy scallop-shaped markings and splotches of reddish-brown on the large end and a dense sprinkling of fine reddish-brown streaks and dots over the remainder of the surface. The egg is short oval in shape (Preston *in* Palmer, *Handbook of North American birds*, vol. 1, Yale Univ. Press, New Haven, 1962), and not glossy, and it measures  $57.42 \times 47.18$  mm. The empty dry shell weight is 5.222 g.

The same bird laid another egg on 10 March 1978, or 34 days after the first egg. The second egg (WFVZ 42,005) does not differ markedly from the first in color, shape, or texture, and it measures  $58.06 \times 48.06$  mm. It weighed 73.522 g on 11 March before preparation, and the empty dry shell weight is 5.699 g.

The other female laid single eggs on 7 February and 10 March 1978, or 32 days apart. The 7 February egg (WFVZ 42,007) is white with heavy smudges of reddishbrown towards the small end and sparse scrawls and dots of reddish-brown over the rest of the surface. The egg is subelliptical (Preston *in* Palmer op. cit.), and not glossy, and it bears two small calcareous tubercles on the large end. It measures 62.28  $\times$  48.86 mm with an empty dry shell weight of 7.356 g.

The 10 March egg (WFVZ 42,006) laid by this female is similar in most details to her first egg, except that the pattern of superficial markings is reversed with the heavy reddish-brown smudges being located nearer the large end than the small end. The egg measures  $63.44 \times 48.65$  mm, and had a whole weight of 81.551 g on 11 March. The empty dry shell weight is 6.050 g.

The laying schedule of these captive birds suggests a clutch size of one, as is the case for several Old World species of *Spizaetus* (Brown and Amadon, *Hawks, Eagles, and Falcons of the World*, vol. 2, New York, McGraw-Hill, 1968). However, a Black Hawk-Eagle nest observed by Smith (1970, *Condor* 72:247-248) in Panama in 1965 and 1968 contained two young in both years.

I am very grateful to Michael Cunningham of the Los Angeles Zoo for making these eggs available for study, to Ed Harrison for preparation of the specimens, and to Michael Morrison for his assistance in various ways.