

- heads and Ruddy Ducks. *J. Wildl. Manage.* 38: 112-119.
- ODIN, C. R. 1957. California Gull predation on waterfowl. *Auk* 74:185-202.
- REARDON, J. D. 1951. Identification of waterfowl nest predators. *J. Wildl. Manage.* 15:386-395.

VERMEER, K. 1970. Breeding biology of California and Ring-billed Gulls: a study of ecological adaptations to the inland habitat. *Can. Wildl. Serv. Rept. Ser.* 12.

Accepted for publication 4 April 1974.

EXTERNAL DIFFERENCES BETWEEN NEWLY HATCHED CUCKOOS (*COCCYZUS AMERICANUS* AND *C. ERYTHROPTALMUS*)

VAL NOLAN, JR.

Department of Zoology
Indiana University
Bloomington, Indiana 47401

Yellow-billed Cuckoos (*Coccyzus americanus*) and Black-billed Cuckoos (*C. erythrophthalmus*), although nonparasitic, do from time to time lay their eggs in the nests of each other and of various passerines (Bent, U.S. Natl. Mus. Bull., No. 176, 1940; Todd, Birds of Western Pennsylvania, Univ. Pittsburgh Press, 1940; many others). In view of the widespread occurrence of obligate brood parasitism in cuckoos, the occasional anomalous egg-laying behavior of these two cuckoos merits investigation. One prerequisite of such an investigation is the ability to distinguish between nestlings of the species, but the literature is almost silent on that subject. Long ago, Herrick (*J. Exp. Zool.* 9:198, 1910) published a description of the newly hatched Black-billed Cuckoo and also made cursory reference (p. 207) to an oral, and accurate, report he had received about the neonatal plumage of the Yellow-billed Cuckoo. Herrick's descriptions do not appear in standard works of reference and for practical purposes seem to have become lost.

This paper describes characters by which nestling Yellow-billed and Black-billed Cuckoos can be distinguished. It is based on a small collection that I made at Bloomington, Indiana, before I discovered Herrick's paper. The nests from which I took the birds presented no anomalies. The eggs in each were substantially uniform, and their shapes, colors, and sizes were typical for the species of the adults that were incubating (Bent, U.S. Natl. Mus. Bull., No. 176:57, 73-74, 1940). When the eggs hatched, the nestlings within each clutch looked alike. I have examined many eggs and young of both cuckoos in the field and think it safe to attribute my specimens to the species of the adults associated with them.

Young Black-billed Cuckoos have snow-white, hair-

like, sheathed down feathers on the dorsal surface and thighs. This white down contrasts strongly with the blackish skin and readily distinguishes Black-billed from Yellow-billed Cuckoos, whose sheathed down is dusky gray, so similar to the color of the skin that it might pass unnoticed. Most of Herrick's description of other aspects of the plumage of young Black-billed Cuckoos is confirmed by my specimens and will not be repeated, but I would modify or supplement his statements as follows: Ventrally, birds about 12 hr old bear no down on the cervical region and the regions anterior to it. There is a little whitish down on the posterior segment of the abdominal region, but the down on the remainder of the ventral tract is gray rather than white and is somewhat shorter than 3 mm. Dorsally, the capital tract bears down only on the coronal, superciliary, and occipital regions. Turning to the Yellow-billed Cuckoo, the down is distributed about as on its congener, but my specimens have less of it on the ventral tract and hand.

As for other interspecific differences, the frontal apterium of my Yellow-billed Cuckoo nestlings is of a paler color than either the bill or the surrounding skin and down and therefore stands out as a light gray spot. In the Black-billed Cuckoo that apterium is as dark as the bill, and its color shades imperceptibly into the color of the skin. The complex patterns of the creamy white structures on the palate and tongue are alike in both species, and I detect no interspecific differences in their shapes or sizes. The preserved birds reveal no difference in the color of the spots; the background color is somewhat variable, but not as between species. In the field I have noted no differences in mouth colors but have not compared live nestlings side by side. Herrick's figure (p. 201) does not adequately depict the markings in the mouths of any nestlings that I have examined. The spots are not round disks, as he showed all except those deep in the throat to be; rather they are somewhat asymmetrical, as suggested by the picture of the right-hand bird in Allen's photograph in Bent (1940: pl. 10).

I thank Richard L. Zusi for calling my attention to Herrick's paper. This is contribution no. 955 from the Department of Zoology, Indiana University.

Accepted for publication 4 April 1974.