

FROM FIELD AND STUDY

Notes on the Philippine Brown Hornbill.—During a three-month military assignment (August, September, October, 1945) near the city of Zamboanga, Mindanao, I regularly observed wild flocks of Brown Hornbills (*Buceros hydrocorax*) which inhabited the tree-top level of the dense mountain forests lying a few miles inland from the city. Being large, strikingly colored and noisy, they would have been indeed difficult to overlook during their early morning and late afternoon foraging expeditions when they flew from tree to tree or from hillside to hillside, calling as they went and alternately soaring and beating their heavy wings. The regularity of these excursions is such that their sonorous calls serve to waken the natives in the morning and summon them home from the hillside fields at the end of the day. During the warmer part of the day the hornbills are silent and inactive and, unless unduly disturbed, remain hidden in the foliage of the highest jungle trees.

Throughout the period in which I was able to observe them they flew in small groups which averaged from three to seven in number. Although they were sometimes observed only in the company of others of their species, they were more commonly to be seen amid the much larger flocks of another tree-top species, the White-headed Hornbill (*Aceros leucocephalus*), which seldom flew in groups of less than twenty individuals and were by far the most common hornbills of that region. The White-headed Hornbill was differently colored and marked and considerably smaller than the Brown Hornbill so that the two species were easily distinguishable when they flew in mixed flocks. They associated not only in feeding, but also in their foraging flights over the jungle and in roosting. Despite the well known irritability of hornbills, the relationship seemed to be a peaceable one and on no occasion did I observe any signs of incompatibility. A third species of hornbill, the Tarric Hornbill (*Penelopides panini*) was never seen to mix with flocks of either of the other two but remained in the central and lower levels of the forest and at that season apparently lived a solitary existence.

During the three-month period the wild birds seemed to feed mainly on insects, wild figs, and feral guavas, which comprised the chief components of stomach contents of several specimens collected. However, feeding preferences expressed by a captive bird then in my possession would indicate that during seasons when more succulent fruits are available to wild birds such may be preferred as a food source. Of the fruits offered, the captive hornbill, an adult male, invariably chose those which were high in both water and sugar content, preferring such types as mango, papaya, sweet sop, tangerine, orange, and mangosteen to drier fruits such as wild figs, guava, marang, and banana or relatively tart ones like pomelo, lime, and tomato. In his choice of fruits, color seemed to play an important part. A variety of papaya with red flesh was always preferable to one of an orange hue, just as any orange colored fruit was always eaten before any interest was evinced in one of a yellow or cream color. Canned fruit salad mix, in which the fruits were diced to a more or less uniform size, seemed to confirm the theory the foregoing observations suggested. Upon being introduced to this artificial mixture of fruits unknown to him, the hornbill immediately selected first the sections of cherry, then those of peach, and last those of colorless pineapple and pear sections and grapes, and when offered the mix on subsequent occasions he never failed to eat its ingredients in exactly the same order. His greatest enthusiasm was expressed for any food of animal origin such as bird eggs, locusts, grasshoppers, frogs, lizards and snails. As he accepted such fare, his head would wobble with excitement much in the manner of a young bird when fed by its parents. The food was taken in the tip of the bill, tossed up and then swallowed, a process accompanied by a convulsive gulp and an erection of the bird's crest. Upon accepting any large insect such as a four- or five-inch grasshopper or a walking stick of similar dimensions, he would run it back and forth through the tip of his beak, crushing the heavy exoskeleton with a series of rapid snappings of his powerful bill. Only when he had rendered it a soggy, shapeless mass, would he attempt to swallow it. In addition to the insects which we caught and carried to him, he was quick to seize any which flew into his cage and he caught them in midair with a speed amazing for so large a bird.

The call of a wild bird in flight was a repeated, clear and resonant honk which in character and timber resembled somewhat that of a large goose. The sound of a flock of calling hornbills carried for miles through the still air of the jungle. When confronted with food, my captive bird usually emitted a single harsh squawk and he gave a short coarse bark whenever he was angry or frightened. This last note he reserved mainly for stray dogs which wandered into our yard and to which he held unmistakable aversion.—KEN STOTT, JR., *San Diego Zoo, San Diego, California, July 17, 1946.*

The Great-tailed Grackle in the Upper Rio Grande Valley.—The Great-tailed Grackle (*Cassidix mexicanus*) has been reported as nesting in New Mexico in the vicinity of Las Cruces, Dona Ana County, and Carlsbad, Eddy County (Bailey, *Birds of New Mexico*, 1928:658). Peterson (Condor,