

PARTIAL NIDIFICATION OF THE FLIGHTLESS CORMORANT

BY MALCOLM DAVIS

Plate 20

AFTER three years of courtship and several attempts at nesting, the pair of Flightless Cormorants (*Nannopteron harrisi*) that have lived in captivity for four years in the National Zoological Park, Washington, D. C., succeeded in completing a nest and depositing four eggs. The courtship that preceded this activity was unique and was for the first time witnessed by ornithologists as reported by Davis and Friedmann (*Scientific Monthly*, 560, June, 1936).

The pair of birds repeated this queer courtship during May and early June of 1936, and afterward attempted to build a nest. The site selected was at the foot of a willow tree near the border of the pond in which the birds were inclosed. Both sexes took part in the building of the structure, which was merely a heap of large twigs, feathers and straw that were introduced for this purpose. During the nest-building activity which was accompanied by much carrying of material in the beaks of the birds, and many guttural calls, copulation took place frequently. At times this act was completed in the water and again near or on the nest.

The first egg was deposited on June 1, the second on June 3, the third on the 4th and the last egg on the 8th. The female as she covered the eggs, gave promise of being a good mother. She left the nest in the morning for a swim, and again in the afternoon at about two o'clock, the feeding time of the pair of birds. Frequently she would refuse to leave the nest; therefore it became necessary for me to approach her while she incubated, and feed her from my hand. (The usual procedure of feeding is by tossing the fish into the pond, and the birds then make long underwater dives for the food.) The female would allow no one near her nest site. It became necessary to remove a pair of Mute Swans (*Sthenelides olor*) from the inclosure, as the hooked beaks of the cormorants are weapons to be respected. Two of the eggs were crushed by the large webbed feet of the female during incubation. In Nature the loss from this source is no doubt high, as the four toes are connected by a web, thus forming a damaging foot structure. The eggs were a pale bluish white, more or less overlain with chalky deposits of lime; size 2.50 by 1.50 inches. On several occasions I saw the bird turn her eggs by pushing them around with her long, hooked beak. It appeared a clumsy procedure. The female performed all the duties of incubation, while the male stood nearby, occasionally bringing in his beak a few offerings of straw or sticks which he gave to his mate. She accepted the material and placed this offering as an addition to the nest. Again, when the male came close to



FIG. 1.—IN 1936



FIG. 2.—IN 1935

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the nest the female would spar with him, using her beak in a vicious manner, although no wounds were inflicted. The male appeared bored while his mate performed the duties of incubation. His pastime consisted of swimming and diving after nesting material, a good portion of which he dropped before he reached the nest.

The nest site was on the edge of the pool in an exposed position which subjected the incubating female to the rays of the sun. Although the native home of the cormorants is in the equatorial Galapagos Islands, the bird appeared to suffer from the intense heat, as evidenced by the pulsating movements of the throat. The eggs remained in the nest for thirty days, and then were removed, examined and found to be infertile. The photograph (Plate 20, fig. 1) shows the incubating female, and the male on the edge of the pool. The female performed the entire duties of incubation. During courtship and the breeding activities the birds went through a molt. By July 15 and 16 after the removal of the infertile eggs, the birds made no further attempt to nest, and their molting was complete. There was no postnuptial molt, as is the rule among other birds. The above description of the nesting activities is probably the only one that is recorded in the literature of ornithology. We looked forward to the next spring with the anticipation that renewed sexual activity would be a real success, and that the National Zoological Park would have in its collection a brood of young Flightless Cormorants, but this, however, was not realized.

The previous year, 1935, the birds made an unsuccessful attempt to nest. After the courtship was completed, a nest was constructed at the base of the larger willow tree that occupies the inclosure. After a summer of nest building and much intense preparation, autumn arrived without the deposition of eggs. However, the female continued to sit on the nest until, due to the length of time that the birds allotted to nest building, it became a large and somewhat untidy affair. Plate 20, fig. 2, depicts the male in the act of courtship,—note the twisted neck. The female sits on the nest with material in her bill that her mate has offered her.

National Zoological Park
Washington, D. C.