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A STUDY OF FLORIDA GALLINULES, WITH SOME
NOTES ON A NEST FOUND AT CAMBRIDGE,
MASSACHUSETTS.

BY WILLIAM BREWSTER.

EARLY in June, 1889, while wading about in the Fresh Pond swamps on the outskirts of Cambridge, I heard one afternoon an unfamiliar bird cry. It was a succession of hen-like *cucks* given slowly, but in connected series, and sometimes ending with a prolonged, drawling *keé-ar-r*, *kréé-ar-r*, suggestive of discontent, if not positive suffering, on the part of the bird. The voice was so loud and strong that it might have been heard nearly or quite half a mile away. Several times afterward during the next few days this strange cry was heard, always in the same place—a bed of cat tail flags growing near the middle of a wide, flooded meadow. In company with Mr. Faxon and Mr. Torrey I made repeated efforts to find the bird but we failed to obtain any clue to its identity.

It was not until the evening of May 18, 1890, that we again heard this mysterious cry, this time in a swamp about an eighth of a mile from the marsh just mentioned. It was repeated at frequent intervals, and at length was answered by a second bird which Mr. Frank M. Chapman, who was with us at the time, at once declared to be a Florida Gallinule. The fact that this second cry was uttered immediately after the first, apparently in reply to it, and that, while differing in form, it resembled



EV. TIERSON, LITH.

KETTERLINUS, PHILADA.

ICTERUS NORTHROPI ALLEN.

1. ADULT MALE.

2. YOUNG MALE.

the first in tone, led us to conjecture that both birds were Gallinules, the variation in their notes being due to a difference of sex. This surmise proved correct, for both were seen before many days passed, and were watched in the act of uttering the cries just mentioned as well as making other sounds that will be described later.

Their chosen haunt was a swamp about five acres in extent, covered with dense beds of cat-tail flags and thickets of low willows, among which were many pools and ditches of open water three or four feet in depth connected by a network of muskrat run-ways. The only really dry places were the tops of the numerous large tussocks and scattered houses of the muskrats, for among the willows and cat-tails the water was everywhere from six to twelve inches deep. The swamp was bordered on one side by a railroad, on the next by a high knoll, on the third by partially submerged woods of dead or dying maples, while on the fourth side an expanse of marshy ground stretched away for hundreds of yards to the shores of a pond. The area covered most thickly with flags and willows was separated from the maple swamp by a ditch, broad, straight and practically free from all vegetation save duck-weed, which formed an emerald carpet on the surface of the brown, stagnant water.

The Gallinules, for reasons best known to themselves, paid frequent visits to the flooded woods, always crossing and recrossing the ditch at a certain spot where an island, or rather raft, of floating vegetation entangled among the stems of a half-dead bush, afforded some slight cover as well as a convenient place for feeding and basking in the sun. The knoll just mentioned commanded an unobstructed view of this ditch, and we soon found that by lying still on the grass or crouching behind a cluster of alders we could watch the birds from a distance of less than forty yards without danger of alarming them.

Sometimes one appeared, sometimes the other, but the male the more frequently. He was a truly beautiful creature. With the exception of the yellow tip, his bill was scarlet, and this color extended back over a broad frontal shield which at a little distance looked like the red comb of a laying hen. At every movement of the head this brilliant color flashed like a flame. When he swam in under the bushes it glowed in the dense shade like a living coal, appearing and disappearing as he turned

toward or from us, and often catching the eye when all other trace of him was lost. In the sunlight his breast appeared to be of a rich bluish plum color, at other times slaty. The legs were greenish yellow, the head black, the neck nearly so, the wings and back cinnamon or reddish brown.

He rarely crossed the ditch without stopping at the island to bathe. Standing at the water's edge, with a quick plunge and upward fling of the head he scattered the drops over his back in a shining shower, opening and trembling his wings as the water fell. After repeating this performance five or six times in rapid succession, he rested a moment, and then went through it once more. After his plumage became thoroughly soaked, he proceeded to dress it, running each feather separately through his bill. This elaborate toilet occupied a considerable time, often lasting as long as fifteen minutes. When it was completed to his satisfaction, he would start off to feed again.

His manner of swimming and of feeding from the surface of the water was very like that of a Coot. He sat high and accompanied the strokes of the feet with a forward-and-backward nodding motion of the head and neck, accentuated at times as he reached out to seize some tempting morsel. On land he walked like a Rail, threading his way deftly among the stems of the bushes and tall rushes, stepping daintily, lifting and putting down his feet slowly, and almost incessantly jerking up his tail with a quick, nervous motion which caused the under coverts to flash like the sudden flirt of a handkerchief. As he picked his food from the vegetation at his feet, the head and neck were shot forward and downward at intervals of about a second, with a peculiarly vivid, eager motion. His manner of walking and feeding also suggested that of the *Guinea*-hen, the body being carried low and in a crouching attitude, while the movements of the head partook of that furtive swiftness which is so characteristic of this barnyard fowl.

Our Gallinule at most times, whether in action or repose, was a bird of slender shape and graceful outline, his carriage light yet firm, the play of the body lithe and strong. While preening his feathers, however, his attitude was often stiff and awkward, and the ruffling of his plumage made him appear nearly as portly as a duck. Again, the motion of flight was ludicrously awkward and uncouth. When, frightened by a glimpse of us through the

flags, he rose and flew with legs hanging down, wing-beats feeble and labored, the whole bearing was indicative of strain and exhaustion, which received an added emphasis from the abrupt reckless drop into the bushes which ended the flight.

Late one afternoon we suddenly heard a great outcry, and soon our pair of Gallinules appeared; the female, who was much the plainer-colored in every respect, swimming swiftly, her tail lowered and about in line with the back; the male flapping his wings on the water in his eagerness to overtake her. This he soon succeeded in doing, but just as he clutched at her with open bill, evidently with amorous designs, she eluded him by a sudden clever turn. He then swam round her in a narrow circle, carrying his tail wide-spread and erect, his neck arched, his scarlet front fairly blazing and apparently much enlarged and inflated. Seeing that she would not permit his approaches, he soon gave over the pursuit and returned to his favorite raft, while the female swam into the bushes. During the chase one of the birds, presumably the male, uttered repeatedly the following cry: *ticket—ticket—ticket—ticket* (six to eight repetitions each time). This was doubtless a wooing note, for we heard it on no other occasion.

The calls of these Gallinules were so varied and complex that it seems hopeless to attempt a full description of them. I certainly know of no other bird which utters so many different sounds. Sometimes they gave four or five loud harsh screams, very like those of a hen in the clutches of a Hawk, only slower and at longer intervals; sometimes a series of sounds closely resembling those made by a brooding hen when disturbed, but louder and sharper. Then would succeed a number of querulous, complaining cries, intermingled with subdued clucking. Again I heard something which sounded like this: *kr-r-r-r-r-r*, *kruc-kruc*, *krar-r*; *kh-kh-kh-kh-kea-kea*, delivered rapidly and falling in pitch toward the end. Shorter notes were a single, abrupt, explosive *kup*, very like the cry given by a startled frog just as he jumps into the water, and a low *klöc-klöc* or *klöc-klöc-klöc*. Speaking generally, the notes were all loud, harsh, and discordant, and nearly all curiously hen-like.

At intervals of perhaps half an hour during the greater part of the day the two birds called to one another from various parts of the swamp, evidently for the purpose of ascertaining each other's

whereabouts. They were occasionally answered by a pair in a neighboring swamp and these in turn by a third pair further off. In the early morning and late afternoon their calls were frequent and at times nearly incessant. They ceased almost entirely after nightfall, for the Florida Gallinule is apparently much less nocturnal than any of the Rails, if not so strictly diurnal as most of our birds.

Thus far our experience had proved interesting to be sure, but hardly unique, since the Florida Gallinule has several times been observed within the borders of the State. On the morning of June 5, however, Mr. Faxon and I came suddenly on the nest of the bird, never before found in Massachusetts. It was in the midst of a low, half-submerged thicket of *Spiraea salicifolia*, intermingled with a few wild-rose bushes and alders, four or five feet in height. The foliage was scanty, and the tops of the bushes withered. Among their stems the water was from twelve to fifteen inches deep, quite free from grass, flags, tussocks, or any floating vegetation save a thin coating of duck-weed over the surface.

The uniform light color of the nest—a pale, bleached straw, nearly that of dead grass—thrown into relief against the background of dark water, rendered it so conspicuous an object that it caught my eye at a distance of fully twenty-five feet. Obviously the birds had disregarded, either deliberately or unconsciously, all considerations of protective coloring, and then, with apparently studied boldness, had rejected the safe shelter of tangled wild-rose thickets, dense beds of cat-tail flags and clusters of bushy-topped tussocks with which the marsh abounded, to build their home among scattered bushes in the centre of a nearly open pond!

With the exception of a little dry tussock-grass which formed a lining, the nest was composed wholly of cat-tail flags of last year's growth, all of which must have been brought by the Gallinules a distance of at least twenty-five yards, much of the way through bushes where the water was too deep for the birds to get any firm footing. As some of the stalks were nearly two feet in length, an inch thick at the base, and very heavy, the labor involved must have been great.

About the rim and outer edges of the nest the flags were broken or doubled in lengths of three to six inches, the ends of

which, projecting upward and outward, formed a fringe of blunt but bristling points that prevented the eggs from rolling, or being crowded, out. On one side this fringe was wanting for a space of two or three inches where a pathway about six inches in length led from the edge of the nest down a gentle incline to the water. This pathway was composed of broad flags from twenty to twenty-three inches long drawn out straight, with the slender tips firmly woven into the nest and the heavy water-soaked butts resting some distance away on the bottom. It was evident that these flags had been carefully selected and adjusted to form a sort of 'gang-plank' by means of which the bird might enter and leave the nest without disarranging or breaking the brittle material which formed its rim. The whole structure was saved from danger of submersion in case of a sudden rise of water by the buoyancy of its materials, but it derived its chief support from the stems of the bushes, among which it was firmly wedged. It certainly did not rest on the bottom, for I ran my hand under it and found everywhere a clear space of several inches in depth.

The measurements of the nest *in situ* were as follows: greatest external diameter, 20 inches; least external diameter, 13 inches; height of rim above the water, 4 inches; total height about 8 inches. The egg cavity was symmetrical but shallow ($2\frac{3}{8}$ inches in depth), and measured 7 inches across.

The twelve eggs composing the set filled the nest to the rim, but were arranged in a single tier—the ends pointing in every direction. They were perfectly clean, and there was no excrement in or about the nest. Three were fresh; a fourth contained a small embryo, dead and partially decomposed; the remaining eight were within a few days of hatching. When we found the nest the eggs were warm, but neither of the birds was seen although both came close about us at times under cover of the flags and bushes, uttering the frog-like *kup* and occasionally one or another of their louder cries; on the whole they made very little noise while we were in the swamp, much less, in fact, than on many occasions when there was nothing to disturb them. It should be mentioned, however, that for a week or more before the nest was found they had been getting more and more silent daily, and showed themselves less and less often. After the nest was taken—it was far too great a prize to be spared—there was another period of clamor and activity during which they appeared

to be building a second nest in a spot about fifty yards from the site of the first. Not caring to disturb them further we made no search for this second nest. Of its fate we know nothing definite, but there are good reasons for believing that the eggs were hatched and the young successfully reared.

A LIST OF BIRDS FROM NORTHEAST BORNEO, WITH FIELD NOTES BY MR. C. F. ADAMS.

BY D. G. ELLIOT.

(Concluded from Vol. VII, p. 359.)

FAMILY PICIDÆ.

50. *Xylolepes validus.*

Picus validus TEMM. Plan. Col. pls. 378, 402.

Megapicus validus MALH. Mon. Pic. I, p. 28, pl. 9, figs. 4-7 (1861).

Xylolepes validus CAB. & HEIN. Mus. Hein. IV, 2, p. 108 (1863). —SALV.

Ucc. Born. p. 44 (1874). —SHARPE, Ibis, 1890, p. 6.

[Sandakan. Iris reddish orange.—C. F. A.]

51. *Chrysophlegma mentalis.*

Picus mentalis TEMM. Plan. Col. pl. 384.

Chloropicus mentalis MALH. Mon. Pic. II, p. 112, pl. 75, figs. 4, 5 (1862).

Callolophus mentalis SALV. Ucc. Born. p. 49 (1874).

[Suanlamba River. Iris brown.—C. F. A.]

52. *Chrysophlegma malaccensis.*

Picus malaccensis LATH. Ind. Orn. I, p. 241 (1790).

Chrysonotus miniatus EYTON, Proc. Zool. Soc. 1839, p. 106.

Callolophus malaccensis SALV. Ucc. Born. p. 50 (1874).

Chrysophlegma malaccense SHARPE, Ibis, 1890, p. 7.

[Kinabatangan River. Iris red.—C. F. A.]

53. *Thriponax javensis.*

Picus javensis HORSF. Trans. Linn. Soc. XIII, p. 172 (1821).

Dryopicus leucogaster MALH. Mon. Pic. I, p. 47, pl. 13, figs. 4, 5.