NOTES ON A CAPTIVE VIRGINIA RAIL.

BY ALVIN R. CAHN.[1]

ON the night of October 21, 1913, Madison, Wisconsin, received its first touch of winter weather in the shape of a premature snowstorm, accompanied by high northwest winds. A university student, walking down State street near the Capitol after dark, picked up on the street an exhausted bird, which he put into his coat pocket. The next morning he brought the bird — still in the coat pocket — to the Zoölogical Laboratory for identification, and it proved to be a Virginia Rail (*Rallus virginianus*). The bird was undoubtedly migrating when overcome by the fury of the storm.

Examination showed the rail to be in remarkably good condition and it was decided to try various feeding experiments on it. The bird was accordingly placed in a room in the vivarium, where it could hide beneath the ferns and have plenty of exercise, yet find no food except that which was given it.

On the 22nd and 23rd the bird refused all food, and spent the days asleep amid the ferns, perched on one leg with its head buried under its wing. It showed no signs of fear, and slept undisturbed until actually touched, evidently regaining its lost strength. On the morning of October 24, a shallow dish of water containing ten good sized Amphipods (*Dikerogammarus faciatus*) was placed among the plants, and half an hour later the crustaceans had disappeared. From then on there was no question as to whether or not the rail would eat; the difficulty lay in obtaining an adequate supply for its insatiable appetite. From October 24 to November 1, inclusive, the bird was fed entirely on these Amphipods, together with caddice-worms (*Platyphylax designatus*) which had been removed from their cases. Thirty amphipods and fifteen caddice-worms were fed daily, and the rail was apparently in excellent condition, although its appetite was evidently not satisfied.

On the morning of November 2, the bird was placed in a glass show-case covered with wire, size 24 × 12 × 12 inches, having a

[1] Zoölogical Laboratory, University of Wisconsin.

sand floor covered with moss, in which a dish of water was sunk, and in one corner a clump of growing ferns was located to afford the bird shelter when desired. This cage was then placed on exhibition in the entrance hall of the Biology building, where hundreds of persons passed it daily. In this situation the rail grew remarkably tame, and was apparently far more contented when surrounded by noisy students than when left alone. The presence of people was evidently associated with the idea of food, for which it was constantly on the look-out. So tame did the bird become that after two days it was allowed to fly out of the cage and feed from the hand. The rail was on exhibition under these conditions from 8 to 5:30 o'clock daily from November 2 to 9, inclusive, and it was during this period that a careful record was kept of its food, as shown in Table 1.

TABLE 1.

November:	2	3	4	5	6	7	8	9	10
Caterpillar		2	1	1			1		
Stickleback		1	1					1	
Sunfish		2	2	3	5	2		2	2
Water-bug, Zaitha	2	4	11	3		1	3	3	2
Meal worm	20	11	12	18	50	30	25	22	12
Grasshopper	2	1	12	3	3			4	2
Amphipods	45	144	85	95	95	80	85	38	60
Crayfish				1	1				1
Snake (DeKay)				1					
Snake (Garter)					1				
Frog (*Acris*)				1		1		1	
Frog (*R. pipiens*)							1		
Hornet (*V. maculata*)		1	3	5	2	1		4	2
Bullhead					1	2	1		
Caddice-worm		22	15		6	32	10	14	12
Snails			2		4	3		5	
Water Scorpion			3		2	2			
Earthworm		6	6	11	5	6	8		4
House-fly			1	5	5		7	1	3

What proved to be perhaps the most interesting part of the food habits was the descrimination shown in the manipulation of the

various kinds of foods. In the case of the larger aquatic animals — the sunfish, stickleback, bullhead, crayfish, Zaitha, and water-scorpion — the victims were immediately removed from the water and carried to the far end of the cage, where they were swallowed entire. Once caught, they were never dropped, but were dextrously juggled in the beak until the proper position for swallowing was obtained. The bird apparently realized the danger of allowing a captured fish to drop again into the water, and proceeded to eliminate the possibility of escape by taking the victim as far as possible from the water. It experienced no difficulty whatsoever in making away with the sunfish and stickleback, and the bullheads went down easily enough — with the exception of one which succeeded in extending its pectoral spines at the moment of passing down the narrow throat, and stuck fast. Strangulation might soon have followed had not the fish been removed, as the bird was utterly unable to dislodge it, although it made desperate efforts to shake it out. The fish was removed with forceps, whereupon the bird undaunted by its narrow escape, proceeded to make another, and this time successful attack on the same fish!

The crayfish, once caught, were pecked and shaken violently until practically all the legs had been dislodged, and the victim, thus rendered entirely helpless, was swallowed easily. After disposing of the body, the bird proceeded to search out the isolated legs, and sent them after the body.

In the case of the smaller aquatic forms, the victims were swallowed on the spot. The caddice-worms and snails (*Physa gyrina*) were left untouched while in the case, the bird making no attempt to swallow them, contenting itself with merely poking at them whenever they moved. However, when the worms and snails were removed from the cases, they were eaten greedily. Amphipods were devoured as fast as they could be caught — which was faster than they could be fed the bird — and seemed to be one of the favorite foods. The rail showed remarkable skill in the capture of these little animals, and almost never missed its aim.

On the other hand, all non-aquatic forms were promptly brought to the water and soused until soft and pliable enough to be swallowed with ease. The larvæ of the Isabella Tiger-moth (*Pyrrharctia isabella*) which were large, well developed specimens, were

manipulated the longest of all the foods except the garter snake, the largest caterpillar being soused continuously for a period of twenty-one minutes. At the end of this time the caterpillar was greatly reduced in size, as the bristles had become softened and broken, and the body limp. The frogs were hammered into insensibility in the water, where there was less chance of escape for them than on land. It took but a very few — usually less than six — vigorous thrusts of the long bill to put the frog in so helpless a condition that its escape was impossible, yet much poking and shaking followed before it was finally devoured.

The surprise, however, came when the bird was given a DeKay's snake (*Storeria dekayi*) measuring seven and one half inches in length. It was hardly expected that the bird would attempt to eat it, yet not only was the attempt made, but it proved successful and apparently easy. The snake was attacked with vigorous thrusts of the bill, and in a very short time was entirely helpless, whereupon the Rail devoured it, beginning with the head. The whole performance occupied less than fifteen minutes — less time than was required for the caterpillar — and was witnessed by a large crowd of noisy students.

The next day a second snake, this time the common Garter variety (*Thamnophis sirtalis*) was introduced. This individual measured just twelve inches when fully extended. The Rail attacked it at once, but had a great deal of trouble subduing it. After half an hour of intermittent attacks the first attempt was made to swallow the snake. The first few inches went down easily, but then quite suddenly the dazed victim managed to loop its body. Further progress being thus rendered impossible, the bird proceeded to recall what it had already swallowed, and for a few minutes stabbed violently at the snake with its beak. Satisfied by the passivity of the victim that all was now well, a second attempt was made, with the same results and sequel. Many unsuccessful trials followed in the next hour and a half, during which time the bird exhibited great concern over the constant twitching of the last inch of the snake's tail, and it was not until two strenuous hours had elapsed that the reptile was finally swallowed. After gasping a few times and settling the enormous meal into as comfortable position as possible, the bird — now a most distorted individual —

settled down for a sleep. It may be said that the only time the rail seemed perfectly satisfied was during the hour following the consumption of these two snakes. After the hour, however, it was ready once more for food, though evidently not particularly hungry.

Attempts were made to feed the rail on a less carnivorous diet, but all proffered rice and cracked corn was refused, even when the bird showed marked signs of hunger. Finely chopped liver was likewise ignored, and small pieces of bread were merely played with.

GENERAL NOTES.

Concealing Posture of Grebes.— The note under this heading in the last number of 'The Auk' by Mr. Delos E. Culver recalls to my memory a similar and yet different experience with a Pied-billed Grebe (*Podilymbus podiceps*) on August 22, 1911. Near Addison, Illinois, is a slough of about five acres area and around the edge a fringe of open water, which is two to four feet deep in spring, but becomes shallower as the season progresses, until, in very warm summer, there is sometimes no water left. In the center is a large area grown up with rushes, tall sedges and marsh grasses. On the above-named day I went into this slough, crossed the open water, which now had almost disappeared, then through the large grassy center space. When near the farther edge of this, I noticed a grebe, which was frantically trying to hide itself. Had I come from the shore near which it was, it would have had no difficulty in getting into the grassy wilderness in the center, but since I came from the other direction, it could not do so without being in my vision. When all attempts at diving proved unavailing, it nevertheless suddenly disappeared from view, although I was only fifteen feet from it. Trying to get to the bottom of this remarkable phenomenon, I looked closely and saw that it had swum as closely as possible to a small tussock of grass and stretched its neck and upper part of the body over this. The color of its plumage matching well in general effect the brown and green of the grass, the bird became next to invisible. It remained in this position until I approached to within about ten feet, when it splashed away and performed the same maneuver on another tussock.— C. W. G. Eifrig, *River Forest, Ill.*

The Double-crested Cormorant in the Chicago Area.— November 20, 1914, I saw a Double-crested Cormorant (*Phalacrocorax dilophus dilo-*