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A STUDY OF THE HOME LIFE OF THE SHORT-BILLED MARSH WREN (*CISTOTHORUS STELLARIS*).¹

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Plate XIV.

IN view of the general paucity of information regarding the exact distribution, breeding range, and home life of the Short-billed Marsh Wren, it is hoped the present contribution may not come amiss.

I first became acquainted with this Wren, at Hatley, Quebec, on May 21, 1917,² when I obtained a sight record of a bird in a damp meadow much overgrown with long grass, on a farm about one mile to the north of the village. Two years later, on September 10, 1919,³ I fortunately secured a specimen three miles south of the previous site, this record being the first published one for the species in the Province of Quebec, although, it afterwards transpired, that it had been observed by my friend Mr. Terrill,⁴ near Montreal, in 1911, but nowhere recorded at the time. Several years later, on July 7, 1926, I accidentally trod on a young bird just out of the nest, at Lanoraie, Que., about fifty miles north of Montreal.

Both the skin of this bird, and the one shot at Hatley, are now in the National Museum at Ottawa. Since coming to reside in

¹ Read before the American Ornithologists' Union, Semicentennial Anniversary, New York, Nov. 16, 1933.

² Auk, vol. xxxv, 1918, p. 305.

³ Auk, vol. xxxviii, 1921, p. 55.

⁴ Auk, vol. xxxix, 1922, pp. 112-15.



Photos. by H. Mousley.

SHORT-BILLED MARSH WREN AT NEST.

Montreal, several breeding sites have been visited from time to time, in the country surrounding the city, but owing to the secretiveness of the birds, and the difficulty in locating their nests, no attempt has been made to study the bird intensively, until the season of 1933, when an opportunity presented itself near St. Hubert, Que., a locality on the south side of the St. Lawrence River, and within easy distance of the city.

It was early in June, that a male of the species was observed—on several occasions—singing over a narrow strip of ground, eighty yards long by forty yards wide, covered with coarse herbage, rushes, and sedges, bounded on the north and south by cattail beds, on the west by a railway embankment, wide ditch, and bed of cattails, whilst on the east side, there was another smaller ditch with cattails, the intervening space being cross-drained, thus forming an ideal spot for the Wrens, as well as for myself, the area not being too large for successfully working. Not believing in unlucky numbers, I commenced operations on the thirteenth of the month, by secreting myself whilst watching the male as he sang from various points of vantage. It was not long before I discovered that he had three favourite bushes, from which he sang repeatedly, but it took some time before I eventually made up my mind which was the real favourite, and the one near which I hoped to find the nest. This was a dead thorn bush, within nine feet of which I soon found what I took to be a half-completed nest, the other two “singing” posts, being choke cherry bushes, one twenty-one, and the other twenty-seven feet, from the nest. Strange to say, no sham or false nests were located, either on this, or any other date.

I allowed four days to go by before again visiting the site, on the 17th, when I concluded the nest would be about finished. This proved to be the case, for on visiting it the next day, the first egg had been laid, with an additional one each day until the 24th, when the nest contained its full complement of seven eggs, no more being laid afterwards. It was not until July 8, that the young hatched out, the time in this case being fourteen days, the first record of the incubation period that I have so far been able to find. By this time, the rank herbage which in addition to the rushes and sedges—already mentioned—consisted for the most part of golden-

rod, had grown considerably since I first found the nest, so that by now, it was three feet in height, the nest being only two inches off the ground, and as if to make matters worse, the opening to it, faced northeast, so that the sunlight, even in the early morning, only reached one side of it. However, I made a start at picture taking on July 12, the young then being four days old, and very small at that, besides being almost hidden in the cattail down, of which the nest was heavily lined, their eyes appearing only through very tiny slits, so that the resulting pictures were not much to look at, they seldom are of very young birds. Three days later, I again visited the nest, obtaining some rather more interesting pictures of the young, the slits to whose eyes had now opened to their full extent, and as the light was better, I decided to try and obtain some of the parents at the nest. Much easier said than done, as I soon found out. To begin with, a lane had to be made in the tall herbage twenty feet in length opposite the nest, with a short length at right angles at the end of it, where I could hide and operate the shutter with a long release. This being accomplished, the worst part was yet to come, i. e., the laying down of the herbage in front of, and at one side of the nest, to let in as much light as possible, and so that it could be replaced again without leaving the nest exposed when I left. This was accomplished by pushing long sticks at short intervals into the herbage near the top, and then pressing them down, but by the time this was done, the light had become very indifferent, so that, even with the lens at its full aperture, I was only able to give an exposure of about one-tenth of a second, the resulting pictures of the female, owing to her exceedingly rapid and jerky movements, being nothing but a blurr. However, the experiment was productive of some very interesting facts concerning the home life of these very secretive little birds, during the six hours I spent with them. To begin with, it took little more than twenty minutes before the female became reconciled to the altered conditions and ventured to approach the nest, notwithstanding the fact that the camera was little more than two feet away. Altogether, the young were fed twenty-eight times in the six hours, or at the rate of once in every thirteen minutes, and this by the female alone, her partner contenting himself by always singing from his favourite station on the thorn bush, whenever

she approached the nest. My next visit was three days later, when I again took pictures of the young as well as of the female feeding them, the light on this occasion being somewhat better and allowing an exposure of one twenty-fifth of a second. The resulting pictures not being too bad although it was evident that an exposure of one-fiftieth of a second would have been better if all motion in this animated ball of feathers was to be stopped entirely. As on the 15th the female did all the feeding as well as keeping the nest clean, one of the pictures depicting her in the act of removing the excretory sac. The male again contented himself by accompanying his partner on her foraging expeditions and singing from the thorn bush as she fed the young. The song of the male never aroused the least enthusiasm in the young as did the "click" of the female on arrival near the nest, the young then becoming an excited and animated mass and incidentally putting me on my guard, since the female always made her approach from the back or side of the nest, and being so very small it was no easy matter, even with strong glasses, to detect her approach as she made her way mouse-like through the herbage. In fact I might here say that this has been the most difficult and trying study I have so far made of any bird, and I consider myself lucky in obtaining the pictures I have of the female feeding the young, which are probably the first ever to be presented of this particular phase in the home life of the species. At times it was only the song of the male that gave me any indication that his partner was near the nest, whilst at others I was more fortunate in observing her approach, as she flew just above the top of the herbage suddenly flopping down into it at some distance from the nest, when all trace of her would be lost until the actions of the young made me aware that she had arrived in the near vicinity of the nest, but where she would actually appear was another matter. Sometimes it was on top of the nest, sometimes at one side or the other, and yet again in front of it on the ground, her actions both then, as she slipped mouse-like through the grass, and whilst feeding the young, being more like an animated ball of feathers than anything else, making the release of the shutter at the right moment almost an impossibility. As showing her apparent disregard of the camera she on one occasion perched on a leg of the tripod.

The young on this occasion were fed entirely by the female at the rate of once in every fourteen minutes, during the six hours I was at the nest. So far I had refrained from handling the young for the reason that they were the most nervous youngsters I had ever seen, the least click of the shutter or any other slight noise or disturbance sending a shiver through their whole frame, which made a time exposure picture a very speculative affair. I have mentioned the fact of never having handled them, so that what took place on the 20th may not be ascribed to any interference of them on my part. Directly on my arrival they all, with one exception, left the nest as if shot out of it with a catapult, this being the thirteenth day after hatching. Losing no time I made frantic efforts to recapture some of them but all to no purpose, they simply faded away whenever I happened to catch a fleeting glance of one of them. Just imagine having to chase a mouse through thick herbage three feet high and you will get some idea of my efforts to secure one of these animated mites, which exactly resembled the color of the small dead leaves which lay on the ground at the foot of the golden-rod stems. After a time I gave it up as a bad business and set up the camera in the hope of obtaining some pictures of the female feeding the one young which, luckily, was still in the nest. It was fortunate I did so and risked giving an exposure of one-fiftieth of a second, the light being better than hitherto, as I obtained an excellent picture of the female with food in her bill, as she appeared at the nest, for the first and only time before finally succeeding in enticing this last youngster out into the wide world. Fortunately I managed to recapture it, and in so doing, found one of the others also, which gave itself away by a slight squeak. Placing both in a bag, I left them for a time to quiet down, but whenever I attempted to open the mouth of the bag, one would be out of it in an instant, before I could stop them and when recaptured, it was quite a business to hold both in one hand at the same time without injuring them owing to their wriggling and frantic endeavours to squeeze through my fingers. I shall never forget the time I went through in securing two pictures of one of them on top of the nest, and four others of both squatting in my cap, by which time they were about as much exhausted as myself, allowing themselves to be replaced in the nest where they

remained perfectly quiet, and eventually fell asleep. Arriving at the nest early the next morning they were still in it, but the moment I touched the herbage to have a look, they were out of it in a flash, but I managed to recapture one of them, and for a wonder secured four quite good pictures as it obligingly posed for a few seconds on top of the nest, before again making off, and this time I did not delay its departure. It was then fourteen days old and apparently the smallest and youngest of the family, little patches of natal down still remained on its head and back, more especially, the former, there being very little, if any in the case of the other bird. In addition to the natal down, the wings in their centers showed a small area in which the sheathing to the feathers had not yet burst. In no case, so far as I could judge, was there any indication of a pattern of white spots or pads on the tongue and palate of the young, as is the case in many other species, especially, young Cuckoos which excel in this respect.

As regards the streaking of the head and back in the nestling, if there really is any, as in the adult, it is certainly not pronounced; the feathers, especially on the head, seeming to be of an almost uniform color. In any event, it would be difficult to describe just the degree of this back streaking in so young a bird. According to the late Dr. Dwight, the young after the post-juvenal molt cannot be distinguished from the adult, and there is a complete spring molt. The nest, an almost globular structure with a small entrance hole on one side, was composed outwardly of narrow strips of dry cattail leaves whilst the inside lining consisted of a thick layer of cattail down and five white feathers of a Domestic Fowl. It was only two inches above the ground, at the foot of a clump of the common or soft rush (*Juncus effusus*), this being the more or less general situation. Its height was six inches, width five inches, whilst the inside diameter was three inches. The surrounding herbage consisted principally of lance-leaved golden-rod (*Solidago graminifolia*), Canada golden-rod (*S. canadensis*), intermixed with rushes (*Juncus effusus*) and sedges (*Scirpus rubrotinctus*), as well as clusters of asters (*Aster umbellatus*), and (*A. paniculatus*), spiked purple loosestrife (*Lythrum salicaria*), meadowsweet (*Spiraea salicifolia*), beggars-ticks (*Bidens frondosa*) and Roman wormwood (*Ambrosia artemisiaefolia*).

Summing up the results of this study, we find that it probably took at least seven or eight days, if not more, to build the nest; that, when this was finished, an egg was laid on each successive day until the clutch of seven was complete; that the incubation period occupied fourteen days, and that the young left the nest 13 days later. Their feeding—54 times in 12 hours, or once in every 13.33 minutes—being attended to entirely by the female, at least during the time I spent at the nest, but whether the neglect of the male in assisting to feed his offspring always holds good future studies will have to decide. As regards the arrival and departure of the species I find my earliest date, is May 21, and latest, September 11, although I fancy they often come a little earlier and leave somewhat later. In conclusion, it is hoped this paper may be the means of the Province of Quebec being included in the breeding range of this species in the next edition of the A. O. U. 'Check-List.'

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