

NESTING BEHAVIOR OF WILSON'S SNIPE AND SPOTTED SANDPIPER<sup>1</sup>

BY HENRY MOUSLEY

*Plate 7*

AFTER the publication of my paper on 'Nesting Habits of the Spotted Sandpiper' (Auk, 54: 445-451, 1937) giving the views of Dr. H. Friedmann, Dr. Douglas Dewar, and the Rev. F. C. R. Jourdain on the much-vexed question of the so-called 'injury-feigning' in birds, it struck me that perhaps most of the instances cited may have been casual ones and did not represent a systematic study of how birds react throughout an entire cycle of the reproductive period, when flushed from their nests. With this thought in mind I decided this spring (1938) to take advantage of any opportunity that might arise of carrying out this project. In this I was more than lucky for I had the good fortune to find two nests of Wilson's Snipe (*Capella delicata*) and one of the Spotted Sandpiper (*Actitis macularia*) before the clutches of eggs were complete, thus giving me the opportunity of two weeks' observation—during incubation—of the birds' behavior when flushed from their nests almost daily. Before relating my experiences I might mention that in order not to influence the birds in any way, I decided that directly they flushed I would stand perfectly still wherever I might be and let them go through their performance without any movement on my part to influence their behavior, and this rule was strictly adhered to throughout.

The first nest to be considered was that of Wilson's Snipe (No. 1), which contained its full clutch of four eggs on May 5. The bird allowed a very close approach before flushing to the ground, where it squealed and displayed before flying off. The same thing happened the next day. It was on May 7, however, the day following, that the most interesting event took place. The bird, after again allowing a very close approach, sprang perpendicularly up off the nest for several feet, after the manner of a Black Duck (*Anas rubripes tristis*), before dropping plumb to the ground just clear of the nest where it lay as if dead for several seconds before flying quietly away, a clear case one would think of muscular inhibition, in which the bird became paralyzed for the moment and lost all power of flight. I stood perfectly still according to my pre-arranged plan until the bird 'came to,' when a slight movement on my part caused it to fly off without trying any artifice whatever to lure me away from the nest. From now onward to May 25 the bird was flushed eighteen times and in every case it rose and flew off quietly when I was some distance from the nest. The *scaipe* note I have

<sup>1</sup> Read before the American Ornithologists' Union, Washington, D. C., October 19, 1938.

never heard given in the breeding season as the bird rises from the nest. I might mention, however, that on two occasions the bird after a very short flight suddenly dropped to the ground as if losing the power of flight for the moment but on reaching the ground it quickly recovered and rose again. On one occasion I followed it up to where it alighted, a good distance from the nest, however, and on this occasion it gave vent to the *scaipe* note when rising. On another occasion it uttered this same note whilst flying but this was also at some considerable distance from the nest. On the 25th, the bird had been incubating for twenty-one days so I decided to open one of the eggs to see what was the matter. Two of the eggs I found to be addled, the contents of the third egg resembled the yolk of a hard-boiled egg, whilst the fourth contained a partly developed embryo. This state of affairs I think can readily be accounted for by my having foolishly tried, for too long a time, on a somewhat cold day, to get pictures of the parent covering the eggs. This nest was only fifty yards away from that of 1937, found on May 4. It was composed entirely of coarse grasses in the foundation with fine grasses for a lining, the proportions being 180 coarse pieces in lengths ranging from two to nineteen inches, to 420 fine pieces in lengths of two to thirteen inches. Its dimensions were: outside diameter 6, inside 4 inches; outside depth  $2\frac{1}{4}$ , inside  $1\frac{1}{4}$  inches.

The second nest now to be discussed was that of Snipe No. 2, which contained its full clutch of four eggs on May 13. On this day the parent allowed a very close approach before it flushed, squealing piteously and displaying in full view of me before eventually flying off. The day following, it flushed silently, flying clear away when I was some distance from the nest. Two days later (the 16th), it again flushed silently, but this time dropped to the ground on the other side of some small willows out of my sight, although I could hear it squealing and no doubt it was displaying before flying off. This squealing and no doubt displaying are significant to my mind as they could not surely have been intended to lure me away from the nest since the bird could not see me nor could I see it. No, I think it is undoubtedly a case of mental disturbance, the parental instinct opposing itself to that of self-preservation, the latter in this case overcoming the former, with the result that the bird flew away. On the 17th, the bird again flushed silently, but on this occasion flew right away when I was some little distance from the nest, and this was repeated the day following with the exception, that as on the 16th, it again dropped to the ground out of sight, where it went through the squealing and no doubt the displaying before eventually flying off. The day following it again flew off when I was some distance away, this time, however, giving vent to the *scaipe* note whilst flying, but this at a long way from the nest as did Snipe No. 1 on May 21. On this last-named date the bird again for the third time squealed, and no doubt displayed out



WILSON'S SNIPE: HEAVILY MARKED EGGS AND NEWLY HATCHED YOUNG

of my sight, before flying off. On the two following days it left the nest when I was some distance away but dropped to the ground not far off as if losing the power of flight for the moment, but on reaching the ground quickly recovered and rose again as did Snipe No. 1 on the 16th and 19th, as already recorded. On the 25th, it flushed and flew right away when I was some distance off. Two days after, however, it allowed a close approach before flushing and alighting on the ground nearby, where it squealed and displayed in full view before flying off.

Hatching time was now almost at hand; in fact, two days later on the 29th, when I arrived at the nest at 7.30 a. m. only empty eggshells were visible, this being the twentieth day of incubation. However, just before reaching the nest the parent had flown up about ten feet away and I, having noted the spot, repaired there at once and after some considerable time, managed to locate two of the young. These I took back to the nest and photographed them in it, afterward placing them in a little bag whilst I returned in the almost forlorn hope of finding the other two youngsters. After a long search they were at length discovered almost in the identical spot where I had found the first two. So beautifully did they match their surroundings that it was only by turning over every blade of dark discolored grass, matching exactly the color of the chicks' down, that I eventually found and later photographed them in the nest with the other two. When I returned in half an hour, the nest again contained only the empty shells, but on searching about for a time I eventually flushed the parent some thirty feet away from the nest; however, not seeing the exact spot from which it arose, I failed this time to find the young in the long grass. And so ended a most delightful study. The nest was only twenty yards from that of the year before (1937), found on June 13, which contained the most beautiful set of heavily marked and zoned eggs I have ever seen of this species. The present set was just a replica and leaves no doubt in my mind as to its having been laid by one and the same bird. The nest in this case was composed of a few coarse grasses only with fine grass for a lining, the proportions being twenty-three coarse in lengths ranging from two to ten inches, to 660 very fine pieces in lengths of two to twelve inches. Its dimensions were: outside diameter 5, inside  $3\frac{1}{4}$  inches; outside depth  $1\frac{3}{4}$ , inside  $1\frac{1}{4}$  inches. During the whole time these two birds were under observation never more than one bird was ever seen at or near the nest (Plate 7).

Coming now to the Spotted Sandpiper, the first egg was deposited on May 15, and the fourth on the 18th. The young hatched out either late in the afternoon of June 8, or early in the morning of the following day before 9.30 a. m., thus again giving—as I have always contended—an incubation period of twenty-one days, and not fifteen as has been recorded elsewhere. Upon visiting the nest on the 18th, the day upon which the last egg was

laid, the parent left the nest—which was situated near a little cow-path—when I was some way off with no display whatever. The day following, however, when incubation had begun, the parent allowed a very close approach before slipping off the nest, displaying and squealing before flying away. On the 21st and subsequent seven visits to June 3, the parent on every occasion left the nest quietly, running off and along the cow-path until out of sight with no display whatever. I did not visit the nest again until June 6, arriving at 1 p. m.; the parent was not on the nest, but the eggs were warm. Two days later (June 8), I expected to find the young hatching out, but was surprised on arrival to see the parent just running off the nest and along the cow-path as previously. Upon examining the eggs, I could hear the chicks moving in the shells, so decided to wait about for a few hours in the hope that they would hatch out. However, nothing having transpired by 3 p. m., I decided to open one of the eggs and release the chick. After this had been done and the empty shell left in the nest, I retired for half an hour. I am glad that I did so, for on my return I found the parent brooding the young and the empty shell had been removed from the nest. The behavior of the parent now that it was brooding a chick changed entirely. I was allowed a very close approach to the nest before the bird flushed off on the ground, running all around me, displaying and squealing piteously as it became torn between the two conflicting emotions—the parental one urging it to return to the young, the other of self-preservation urging it to keep out of my reach. Both these emotions seemed about equally balanced. The former at times allowed almost a return to the chick, the latter always pulled in the opposite direction, resulting in a coming and going as it were, with neither emotion gaining the upper hand. Not wishing to prolong the bird's distress, I left it in peace for the night. Returning the next morning (June 9) early, I found the nest empty, but by hiding and watching the parent's movements I eventually located two of the chicks which I replaced and photographed in the nest, whilst later on I discovered a third one. The actions of the parent—I never saw more than one at the nest—on this occasion corresponded exactly with those of the bird I watched and described on page 447 of 'The Auk' for October 1937. Whenever I approached the chicks, it became very excited losing its mental balance, flying all around and about me whilst trying, and at times successfully, to alight on any stout plant or small shrub that came in its way.

I think that with all my experience of this so-called 'injury-feigning' business, I have about come to the conclusion that it may be all a mistake, and that the later suggestions advanced by Dr. Dewar and Dr. Friedmann are nearer the truth, and for these reasons. Firstly, in the case of both the Snipes and the Spotted Sandpiper, the displaying, squealing, and other antics, took place only at a time when a cycle of the breeding period was

either just beginning, or ending, i.e., the commencement of the incubating period after the laying of the eggs, and the climax of this period, when the young had appeared, or were about to appear. In the case of the two Snipe, they were flushed on thirty-five occasions, and on only seven of these was there any demonstration of display or squealing, and these always at the above most excitable and nervous periods in a bird's life. In the case of the Spotted Sandpiper, it was flushed on thirteen occasions, but on only three of these were there any demonstrations, and these like those of the Snipe took place only at the above-mentioned periods. Possibly, as I have already suggested, many of the records given in the books are isolated cases, when the persons recording them happen to have flushed the birds at either one or other of the above-named periods, and by following up the birds, which would naturally retreat, the idea has become generally prevalent that they were trying to decoy the intruder away from their eggs or young. That is why I decided to remain perfectly still when the birds flushed in order to get as natural a behavior on their part as possible. However that may be, it is hoped this further intensive study may have done something toward helping us to a better understanding of the inner meaning of a bird's actions during the breeding season, when all are in a highly nervous and excitable state of mind.

*4073 Tupper Street  
Montreal*