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WHICH SEX SELECTS THE NESTING LOCALITY.[1]

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A ROUGH draft of this paper was prepared in July 1918, about the same time as that of 'The Singing Tree,'[2] but was not offered for publication with the latter, as I was anxious to further consider the matter, and if possible gain some additional evidence in support of my theory, that it is the male in most cases who really selects or establishes the general nesting site, whilst the female no doubt, in the majority of cases, is responsible for selecting the exact spot or location of the nest on that site. Now this at first sight may seem contrary to all pre-conceived ideas on the subject, for I believe we have all come, in a hazy kind of way, to look upon the female as the principal actor in this site selecting business, whereas I would suggest that it is really the male who stands out as the dominant figure. Now in order to make my point clearer, I will ask you to consider for a moment what is meant by "the singing tree." Is it merely a figure of speech, or a fancy title to a paper,

[1] Read before the Nuttall Ornithological Club, March 7, 1921, by Dr. Chas. W. Townsend for the Author. The present paper was received for publication before the appearance of Mr. Howard's 'Territory in Bird Life' which was reviewed in the April 'Auk' and it is interesting to see how Mr. Mousley has independently evolved the same theory that is so fully set forth in that volume. As Mr. Mousley explains he had reached his conclusions at the time his paper on 'The Singing Tree' was written three years ago,—a paper which, as we have already mentioned seems to have escaped Mr. Howard's notice—ED.

[2] 'Auk,' Vol. XXXVI, 1919, pp. 339-348.

or does it stand for something deeper, a something that may mean the home or trysting place of the male,the spot at which the female first finds or hears him, and to which she can at any time return, for in the bird world I think it is the female that finds (not necessarily seeks) the male, and not the male who seeks the female? In support of this, why is it that at migration time so many males of different species (far more than is generally supposed) come in advance of the females, some a few days, others again even a few weeks. I would suggest they come for the purpose of selecting some area of ground over which they can hold sway, in other words they nominally select the general nesting site, to which the females may come either accidentally, or as is most probably the case (especially with the warblers), by hearing the males singing from their favourite trees or other posts, which also act as look-out stations, from which they can sally forth and drive all other interlopers away. Taking the case of the Red-winged Blackbirds (*Agelaius phoeniceus phoeniceus*) and Bobolinks (*Dolichonyx oryzivorus*) which nest near my house, the males in both cases arrive many days in advance of the females, thirty-two in the case of the former, and seven in that of the latter, these being averages for the past six years. Immediately on arrival the males take up their stations, the first named on the marsh, (where they are usually found early in the morning and late in the afternoon, the rest of the day being spent in the adjacent stubble fields) and the latter on certain meadows just in front of my house, and there later on, as well as on the marsh in the case of the Red-winged Blackbirds, will the nests be surely found, thus clearly indicating, I think, that the males in both these instances really selected or established the general nesting site. In further support of this matter it may be remembered that in the spring of 1912 as already recorded[1], Red-winged Blackbirds were unusually numerous, the males on arrival frequenting several new localities, where later on, when the females appeared, nests were duly constructed. Since then the males have never frequented those localities nor have any nests been found, which again is suggestive, I think, of the influence they have exerted in the matter.

[1] 'Auk,' Vol. XXXIII, 1916, p. 168.

Before proceeding further, however, I should like to mention an interesting case which came under my notice during the summer of 1919, and which seems to bear out my contention that the male does not seek the female, but really waits for her to pass over his chosen area. Now the selected area in this case happened to be the orchard at the side of my house which a Least Flycatcher (*Empidonax minimus*) had laid claim to. There for several days I heard his oft repeated "che-béc, che-béc," but when a week or more had elapsed and still there were no signs of a female I became interested, and took especial pains to watch his movements more closely. Just about this time a male Warbling Vireo (*Vireosylva gilva gilva*) also took up a station principally in a large maple tree in front of my house, and two days later was joined by a female. Then came a Baltimore Oriole (*Icterus galbula*) and selected (more especially) another maple tree on the other side of the road, also in front of my house, and in the course of four days (females here for the past six years have arrived as an average seven days after the males) he likewise was joined by a mate. Now here were three male birds, all in possession of "singing trees" and a certain area of ground, from which all other birds were promptly driven, whenever by any chance they encroached thereon. Two of these birds as we have already seen had not long to wait for mates, but the poor little Least Flycatcher although he persistently kept up his "che-béc" notes all through the summer, never became mated, surely a somewhat striking instance that male birds do not forsake their chosen ground, but await the arrival of a female. Was it otherwise, surely this Least Flycatcher could have found a mate by wandering about promiscuously, in which case having found one, they would be able to keep together until such time as nesting operations commenced, or in case of accidentally losing one another, it would be possible for them to come together again, a somewhat easy thing to do when there is a known station to repair to such as a "singing tree," or in the case of the Ruffed Grouse a "drumming log." This may partly account for the fact that when birds are robbed of their first, second, or even third set of eggs, they invariably build another nest in close proximity to the old one, as pointed out in my paper "A Study of Subsequent Nestings."[1] They would do so because the ground had become

[1] 'Auk.' Vol. XXXIV, 1917, pp. 381-393.

familiar to them, and they could always make sure of meeting one another again, which might not be the case if they wandered off to an entirely new locality in search of a fresh nesting site. However, in any case it shows their strong attachment to the chosen area, to which they often return year after year as already recorded. Now as is well known the males of the Ruffed Grouse are polygamous, and in this part of the country there are not a great many to the square mile. How then are the females to find them at the psychological moment without having to wander over a large tract of country? Why, surely, by means of the "drumming log," to which the males repair at certain times of the day, giving notice thereof by the rapid beating of their wings, which can be heard a great way off, and which guides the females to the desired spot. Once having located this, they always know where the male is to be found, and in like manner, surely, the female warbler, let us say, having once located a male at his favourite "singing tree," can always find him there again should she so desire, or they become separated accidentally. I am of course referring here to the initial stages of courtship (which, however, often last for a considerable time), for directly the nest is commenced that of course would take the place of a "singing tree." Reverting to the Warbling Vireo and the Baltimore Oriole, I may say that in both these cases the nests were eventually built in the principal "singing tree" of the male, another indication that this sex again was the chief factor in determinig the general nesting site. Of the dozens of warblers' nests that I have found within a very short distance of the "singing tree" or trees of the male, it is unnecessary to go into details, for all I think clearly show, that in this family if in no other, the males are the ones that without doubt are instrumental in determining the general site of the nest. Likewise in other families, I could quote innumerable instances which all seem to confirm the view I have taken up regarding the part exercised by the male in the selection of the general nesting site. Now let us try to examine what the part exercised by the female may be. In the first place, I think it may be rightly assumed, that in the large majority of cases it is the female who generally does most, if not all of the construction work, in which case it seems reasonable enough to suppose that, being the most adept builder, she should

naturally be the most likely one to know the exact requirements her particular nest demanded. The subject, however, is not an easy one to handle by any means, for in many cases the male is an active worker, and may know equally well those particular requirements. Now most of us I imagine have watched a pair of Bluebirds (*Sialia sialis sialis*) at nesting time, inspecting all the likely looking holes in a number of orchard or other trees. First one bird goes in and inspects a hole, then the other proceeds to do the same thing, and on coming out it often appears as though a weighing up of the pros and cons were taking place, but unless one is able to follow them about until the final hole is decided upon, it seems almost impossible to form any adequate idea which sex eventually decides the matter. However, I was fortunate enough on two occasions to be able to follow a pair of Chickadees (*Penthestes atricapillus atricapillus*) about, until the final hole was selected. In both instances this was decided upon very rapidly, first one bird inspected the hole, and then the other (as they had done previously in the case of several others), after which they both retired to a nearby tree, where some form of understanding not apparent to our senses, was evidently arrived at, for with scarcely a moment's delay, first one bird, and then the other, again entered the hole, and commenced to remove the dead and decaying chips, and in due course the nest in each case was constructed. In these two instances it would appear as though the final selection was entirely a mutual one, which might have been expected, seeing that both sexes take part in the construction of the nest, the same as the Bluebirds. Now in the case of a large majority of the warblers this is not so, or at least, it has not been apparent in those which have come under my observation, for the males rarely seem to take any very active part or interest, either in the construction or exact location of the nest. This was particularly apparent in the case of the Blackburnian Warbler (*Dendroica fusca*) mentioned in my "Singing Tree" paper,[1] for I am disposed to think, (in view of the very faint indications there were of a nest) that the date June 10, 1918, was the very one on which the exact spot for the nest was finally decided upon. If this was so, I am in a position to state

[1] 'Auk,' Vol. XXXVI, 1919, p. 346.

that the male could have had very little say in the matter, (although of course he settled the general site by his "singing tree" before the arrival of the female) for he was engaged off and on nearly all day in singing from his favourite tree, and I never once saw him attempt to bring any building material to the nest, whereas I repeatedly saw the female do so, as already described. Many other similar instances could be mentioned, more especially that of the Nashville Warbler (*Vermivora rubricapilla rubricapilla*) recorded in 1917[1], where the male bird I also feel sure had very little if anything to do in selecting the final spot for the nest, although of course he again fixed the general site by his "singing tree," which in this case was only eight yards away from the nest, that of the Blackburnian's being eighteen yards. He like the Blackburnian spent most of his time in singing, but on several occassions he apparently accompanied the female whilst she was gathering building material, for I saw them return together, but he always repaired at once to his tree and commenced to sing. I think judging from my own experience, and that of others, it may safely be assumed that the males of this most interesting family, in the majority of cases, have little if anything to do with the actual selection of the final spot on which the nest shall rest, the females in nearly all cases performing this duty as well as that of constructing the nest. Let us now take another interesting but somewhat different case, in which the female although contrary to one's expectations (as the males of this species assist in the construction of the nest also) still apparently had all the choosing of the final spot for the nest. I refer to the case of the Purple Finch, (*Carpodacus purpureus purpureus*) whose nest was built in a spruce tree in an orchard adjoining the house I was temporarily residing in during the summer of 1918. I first noticed the male usually singing from a particular crab-apple tree, and shortly afterwards he was joined by a mate, when building operations commenced. Strange to say, however, the nest was built on the side of the spruce tree away from that of the apple tree, and where it was invisible to the male whilst singing, nor was it possible for him to take up any other position (except on the spruce itself, and this is what he eventually did on several occasions) and be

[1] 'Auk,' Vol. XXXV, 1918, p. 302.

able to see it, for beyond the spruce was an open space with no other trees in the immediate neighbourhood. In this case I think we may fairly assume the male had very little say in the matter, otherwise he would surely have selected the side of the spruce opposite his favourite apple tree, where he could see the nest and his mate whilst singing. However, this is one of those puzzling little problems of which the solution I suppose will never be forthcoming, but what we can reasonably be sure of, I think, is that the male in selecting that particular apple tree did really fix the general site of the nest, although apparently he had no controlling influence with regard to the exact spot in which it was eventually to rest.

Let us now look at a different case altogether, where the male I think neither fixes the approximate, nor yet the exact location of the nest. I refer to the Ruffed Grouse whose case we have already partly considered. Here I think we are treading on much firmer ground, and can almost assert that the male has nothing whatever to do with the construction of the nest, or even the selection of its general site, which latter I believe is usually far removed from his "drumming log," and is probably unknown to him. There the female hatches out her eggs, and afterwards attends and protects the young without any assistance from the male whatsoever. As regards the Red-winged Blackbirds and Bobolinks, I can only state that so far as my experience goes I have never seen the males of either species engaged in any nest building, nor have I been able to detect any behaviour on their part, which might be construed as assisting the females in selecting a suitable spot for the nest. This being so, I have come to the conclusion that the females of both species, being the constructors of the nests, are likewise the selectors of the exact spots for them to rest in, although these be it remembered have always been on the ground which the male birds had selected to congregate and sing upon long before the arrival of the females.

Of the sea birds I cannot speak with any great degree of confidence, for my opportunities of observing them in their breeding homes have been very limited, but from what I have gathered when visiting the great cliffs at Bempton near Flamborough Head on the east coast of England, I have come to the conclusion that probably much the same conditions exist as with the land birds.

There, however, the male Guillemots (*Uria troille troille*) have to be content with laying claim to a very small area on one of the ledges of rock, (owing to the countless thousands that breed in close proximity) which area becomes the general nesting site, and on which perforce the female is compelled to deposit her egg, without much latitude for selecting an exact spot.

In conclusion, it seems to me that the remarks at the end of my paper 'A Study of Subsequent Nestings' (already referred to) are also very appropiate here, i. e. the more we study these interesting bird problems the more is it brought home to us how very little we really know concerning them, and at best our solutions in most cases can only be approximate ones after all. However, in the present case I think I have some good grounds for believing that the "singing tree" does serve some other purpose than that of a mere fancy title to a paper. It is surely the home of the male bird, where he awaits the coming of his bride, the place from which he loves to sing, and so in time it becomes the loadstone which eventually guides her to him. It also acts as a lookout post, from which he can perceive any encroachment on his domain and at once resent it by immediately attacking the intruder, which is plain to be seen almost any day during the breeding season. But it accomplishes one other thing also, I think, for it surely demonstrates that of the two sexes the male in the majority of cases really selects or establishes (call it which you like) the general nesting site, which is the main purport of this paper.

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