

**OBSERVATIONS ON THE BREEDING-HABITS  
OF THE MERLIN.**

II.—INCUBATION.

BY

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*(Continued from p. 129.)*

WITH regard to the methods employed in destroying the birds, there is little to say. They are simple, but efficacious. A trap placed in the nest and one or two more, without any camouflage whatever, on the favourite boulders above the nest, usually account for both birds in a very short time. The cleaner method of trapping is preferred to shooting, as certain feathers of the male are highly prized by fishermen, but the gun is sometimes resorted to. By walking up to the nest a shot at close range is guaranteed, first at one bird and a little later at its mate.

It seems almost incredible that a bird will deliberately sit down in a naked trap on top of a boulder while other perches are to be had, yet that is one of the Merlin's weaknesses, and no doubt accounts to a large extent for the fact that both birds of a pair are so readily killed. The love of a perch in a certain relative position to the nest seems to be at the bottom of this apparently foolish trait.

The average time of arrival of the birds on these moors is the middle of April, though some years, as for instance in 1921, it may be considerably earlier. They appear to spend some time in the selection of a site, although this may be nothing more than appearance, for they will frequent the spot they finally choose on and off, almost from the time of arrival till egg-laying. But during this period they may be away for days together. Already at this stage the male will feed his mate, who appears to do very little hunting for herself from now until the young are flying, but there is considerable individual deviation in this respect. I am not sure that the feeding at this time is not merely part of the courting ceremonies, for it takes place always at the nest, or what is ultimately to be the nest, and is, frequently at all events, followed by sexual union. Should the hen be away when her mate arrives with a catch, he calls persistently until she arrives and takes it, not as later on, at a boulder but at the actual nest site. If there are any aerial courtship displays on the part of the male, I have failed to interpret them as such.

The nest is merely a cup in the ground lined with heather (or bracken) debris that may chance to be there. During the early stages of incubation the birds amuse themselves by breaking off twigs from the heather within reach and adding them to the nest. In several cases I have noted small bits of bracken in a heather nest, but only if a bracken patch happens to be within a few feet.

The eggs—usually 4, very rarely 5—appear to be laid every second day, but the actual period of incubation I have failed to determine, though it does not seem to commence until the clutch is completed. Both birds then share in the task, the hen on an average taking longer spells than her mate.\* I have only kept night watch over a single pair of sitting birds and in that case at all events the male incubated all night, but this may merely have been an individual idiosyncrasy. The male now regularly does the hunting, the hen but rarely being out of sight of the nest. The moment he arrives with food his mate meets him, takes it and feeds, while he replaces her on the nest and she proceeds to preen or doze on one of the higher boulders.

This year for the first time I had the good fortune to get a pair of sitting birds to face the hide, and thus got a few photographic records of incidents during the period of incubation. Previous attempts had ended in desertion. At this nest the birds had been sitting for nearly a fortnight before the hide went up. As both birds tend to sit tighter as time advances, it is sound policy not to hurry, particularly as they show no worry at being watched from a greater distance the meantime. As stated above, the male sat at night and alternated at intervals with the hen during the day. As a rule, she would sit for about two hours before being relieved by her mate for a period varying from one to two hours. She was seldom away from the eyrie during the cock's spell of incubation; he was seldom present during hers. She appeared to be fed entirely by him, always taking her meals on the high ground above the nest, but never on a boulder. On rare occasions during the day the male would sit for short periods on one of the perches on the high ground behind the nest, but as a rule he was away, presumably hunting. The Tiercel was far more nervous than his mate, and on being photographed would leave his

\* Birch at one time had four imitation Merlin eggs turned in wood and stained brown, and found that the birds readily accepted these as substitutes for the real thing.

task and let the Falcon replace him. More often than not, when it was his turn on, the fact of my getting into the hide would be sufficient to make him leave the care of the eggs to the hen. Her periods on would thus be artificially prolonged, the normal length being ascertained from a distance.

Both birds took great pains to arrange the eggs prior to sitting. They were invariably turned with the help of



MERLIN : Fig. 4. Turning the eggs with foot and beak.  
(*Photographed by W. Rowan.*)

talon and gaping beak (Fig. 4). The effect of this rough method of handling became more and more apparent as time went on, as minute bits of the outer pigmented shell got chipped off, finally producing eggs very freely sprinkled with small white specks. It was fortunate that the shells were as strong as they were, for many a time the hen, on arriving, landed in the middle of the clutch (Fig. 6), and damage seemed inevitable. But they took no harm. As in the case

of many another species, during incubation the feet are tucked under the eggs, this position being achieved by a rapid side to side shuffle. This resulted in the occasional ejection of one or two eggs out of the nesting cup on the precipitate departure of the parent. On her return she



MERLIN: Fig. 5. Arranging the eggs.  
(*Photographed by W. Rowan.*)

would collect these again. On one occasion an egg was shot out nearly a foot from the nest and rolled into a small depression. On her return the hen promptly set about restoring it to its fellows. With tail to the nest and wide open beak (Fig. 7) she attempted to roll it backwards between her legs, but it was too well lodged to be readily

moved. After several attempts she gave this up and endeavoured to roll the three to the one. The fact that they kept sliding back into the nesting cup frustrated this effort, and ended in her sitting in despair between the one egg and the three. After several minutes of despondency she made another assault on the single egg, finally hoisting



MERLIN : Fig. 6. Hen alighting in middle of eggs.

*(Photographed by W. Rowan.)*

it out of its bed successfully, when it was rolled home without further trouble.

For a number of days the weather was extremely hot. Both birds showed great depression, sitting with gaping mouth and tail and wings drooping (Fig. 8). During the intense heat the hen would sometimes stand, panting, over the eggs for an hour with wings hanging (Fig. 9) as though

to keep the sun's rays off her eggs, and fearing even the heat of her own body. This was not the result of nervousness at the camera, for at slightly cooler times she would incubate normally and she would, moreover, stand in similar manner in the absence of the lens. At times she would rest with one foot on an egg, the other on the ground. The cock behaved in much the same way during the great heat.



MERLIN: Fig. 7. Collecting a stray egg. Note the wide open beak.  
(*Photographed by W. Rowan.*)

Except to alleviate occasional itching the hen never preened during incubation. This was kept as a pastime for her spells on the boulders while the male was on duty. At times she would sit motionless for minutes together with gaze fixed here or there on the horizon, promptly to resume her preening. Occasionally she would move from one boulder to another. If there was any signal between the birds at changing time, it escaped me. As far as I could

determine the male left when so inclined and his mate came on. Both birds on arrival at the nest uttered a very soft monosyllabic "Tick," which would have been quite inaudible at any considerable distance.

Food, as far as I could determine from the remains on the hilltop, consisted entirely of Pipits. (Feeding always took place too far away to make a hazard as to the prey.) That



MERLIN: Fig. 8. Cock brooding in heat.

(*Photographed by W. Rowan.*)

some Merlins do feed on Grouse chicks is unfortunately only too true. This is particularly noticeable during years such as 1921, when the hatching time of the Grouse comes early in the Merlin season. They seem only to feed on small chicks and their total depredations are probably not very serious as a result, particularly as only some individuals appear to indulge in this luxury. With this statement the keepers are agreed. Some of the evidence as to the culpability

of the Merlin is very amusing and quite irrefutable. For instance, it happened one day this year that a keeper was sitting under a boulder on the bank of a stream opposite a Merlin's eyrie, waiting for the return of the cock, knowing that the hen would reveal the nest by rising to meet him. Presently the Tiercel soared over his head from behind, saw



MERLIN: Fig. 9. Hen shading the eggs.

*(Photographed by W. Rowan.)*

him just before giving the food call and in fright dropped his prey, which fell on to the watcher's shoulder—a Grouse chick. On another occasion a cock was shot with a chick in his talons.

In connection with feeding it will be seen below that during the rearing time the young are fed entirely by the hen, though the prey is caught by the cock. The only



exception to this rule seems to be if the female is killed after the first week of the life of the young, when the male will do the feeding as well as the hunting. Should this eventuality arise earlier, he will apparently leave the young to starve.

During incubation Birch has several times killed one of a pair of Merlins and found that the remaining bird has promptly secured a fresh mate. He has not found this to happen after the hatching of the eggs. Possibly the lateness of the season may be responsible for failure to find a fresh mate at this time.

The pair of birds watched and referred to above were birds found and kept for me by Birch until my arrival from Canada. The nest contained one egg when found. When I had to leave for London the birds had been sitting for twenty-four days. Birch very kindly offered to tramp daily to the eyrie so as to get me the date of hatching and further to ascertain the treatment of the young during their first few days of life. Unfortunately the eggs never hatched and were sent down to me for examination, upon which I found that they had been spoiled half way through incubation, presumably on the day when the camera went into the hide, the birds on that day being off the eggs for over an hour. This as far as I know was the longest period away, so that the eggs can evidently stand but little exposure.

The behaviour of the only family of young I have kept under constant observation I will describe in detail. As far as I can tell from spasmodic observations of other pairs it was quite typical.

*(To be continued).*