

ON A
REMARKABLE FACT
IN THE
NATURAL HISTORY OF THE SWALLOW
TRIBE.

BY JOHN BLACKWALL, F.L.S.

(Read March 23rd, 1826.)

THE late celebrated Dr. Jenner, in a posthumous essay on the Migration of Birds, published in the first part of the Transactions of the Royal Society for 1824, has briefly adverted to an extraordinary occurrence in the domestic economy of two species of British hirundines; which, though far from uncommon, has either been altogether overlooked, or totally disregarded, by every preceding writer on ornithology whose works I have had an opportunity of consulting. The circumstance alluded to is, the occasional desertion of their last hatched broods by the swallow and house-martin. This singular fact, with which I was familiar previously to its announcement by Dr. Jenner, my own researches confirm and illustrate; I shall, therefore, without further prelude, proceed to state the results obtained from them.

The swallow appears in the neighbourhood of Manchester on the 18th of April, and the house-martin on the 23rd of the same month, at a mean of twelve years' observations, but as these birds do not pair immediately on their arrival, and as they generally produce two, and often even three broods in a season, it frequently happens that individuals have nestlings in October, the period at which the great body of their species withdraws from this country.* Many of these young birds, from inability to accompany their congeners in their autumnal flight, are compelled to remain behind, and some of the most vigorous of them, may occasionally be seen, in favourable situations, lingering about till the close of November, endeavouring to obtain a scanty subsistence. As the temperature of the atmosphere decreases, however, the insects they prey upon gradually diminish, till, at last, their utmost exertions to procure a sufficient supply of food are unavailing: they then speedily become enfeebled, and concealing themselves, as is usual in such emergencies, numbers undoubtedly perish from exhaustion. A few accidental discoveries of birds thus situated, before the vital principle has been quite extinct, may, very possibly, have

* At Tarvin, in Cheshire, in 1819, I saw a pair of martins feeding their unfledged young on the 20th of October.

given rise to the opinion that European swallows pass the winter season in a state of torpidity.

It did not come to my knowledge, that these late broods are sometimes deserted by the parent birds, before they are capable of providing for themselves, till the spring of 1821; when a pair of martins, after taking possession of a nest that had been constructed in the preceding summer, drew out the dried bodies of three nearly full fledged nestlings which had perished in it, preparatory to appropriating it to their own purposes. About the same time, and near the same spot, a similar attempt was made by another pair of martins, but all their efforts to dislodge the young proving ineffectual, they entirely closed up the aperture with clay, and so converted the nest into a sepulchre.

At first I was disposed to attribute the untimely fate of the nestlings, thus unexpectedly discovered, to the accidental destruction of one or both of their parents; but a little reflection induced me to change my opinion. So many instances were called to mind of the sudden departure of martins, at periods when, to all appearance, they were most busily engaged in providing for their families, that what before was regarded as the unavoidable consequence of a

fortuitous circumstance, I now began to suspect, might be occasioned by a voluntary act of desertion.

In order to clear up this doubtful point, an examination of a considerable number of swallows' and martins' nests was immediately resolved upon; but, as the breeding season had then commenced, it was deemed advisable, on more mature deliberation, to defer the undertaking until its termination: accordingly, the search was postponed to the 27th of October, when, on being carried into effect, several nests, of both kinds, were found to contain dead young ones. Satisfied that a fact of such frequent occurrence, could not, with any degree of probability, be ascribed to accident and convinced, that the intentional desertion of their progeny by the parent birds, afforded the only adequate explanation of it which was admissible, no further inquiry into the matter took place till November, 1825. On the 19th of that month, an intelligent person, to whom I am indebted for numerous interesting communications, relative to the natural productions of the neighbourhood in which he resides, assured me, the suspicion I had formerly intimated to him, that martins frequently leave their last hatched broods to die of hunger in the nest, was perfectly well founded. Having nar-

rowly watched the proceedings of these birds, many of which breed annually under the eaves of a large barn situated near his house in the chapelry of Blakeley, the result of his investigation, he informed me, was, the complete confirmation of my supposition by the most unequivocal proof, namely, that obtained directly from personal observation of the fact; and he did not doubt, he remarked, that dead nestlings might then be procured in abundance, if I would take the trouble to have the nests at the barn examined. This suggestion was acted upon without delay: repairing directly to the place, a ladder was quickly provided, and fourteen nests underwent a careful inspection; of these, five were found to contain dead nestlings of various sizes, specimens of which will be laid before the society,* and from another, two eggs were taken, whose contents very evidently shewed that they had been forsaken when on the point of being hatched. The nestlings collected on this occasion did not, it is true, exceed ten, which may be thought few when compared with the number of nests they occupied; but the second

* The extremely flattened appearance of some of these young birds, especially the smaller ones, which I was quite unable to account for, greatly excited my attention. I soon learned, however, that it was occasioned by the pressure of the sparrows which every night took up their lodgings in the nests.

and third sets of eggs, produced by those martins which lay several times in a season, it should be recollected, only average three and two respectively; and even these may not all be prolific.

The sand-martin, I believe, has never been suspected of forsaking its progeny; yet, that it sometimes does abandon them, I have clearly ascertained, by repeated inspections of the nests of this species during the winter months.

Whether the swift, whose general habits are so very dissimilar to those of the other British hirundines, ever deserts its young, I have not been able to determine; as it is rather a scarce bird in the neighbourhood of Manchester, and usually builds its nest in situations to which I have no access. That this may sometimes happen, however, in cases of extreme urgency, seems probable from an anecdote related by Mr. White, in his *Natural History of Selborne*, letter 52. "I have just met with a circumstance respecting swifts," says that pleasing writer, "which furnishes an exception to the whole tenor of my observations, ever since I have bestowed any attention on that species of hirundines. Our swifts, in general, withdrew this year" (1781) "about the first day of August, all save one

pair, which in two or three days was reduced to a single bird. The perseverance of this individual made me suspect that the strongest of motives, that of an attachment to her young, could alone occasion so late a stay. I watched, therefore, till the twenty-fourth of August, and then discovered, that, under the eaves of the church, she attended upon two young, which were fledged, and now put out their white chins from a crevice. These remained till the twenty-seventh, looking more alert every day, and seeming to long to be on the wing. After this day, they were missing at once; nor could I ever observe them with their dam coursing round the church, in the act of learning to fly, as the first broods evidently do. On the thirty-first, I caused the eaves to be searched, but we found only two callow, dead swifts, on which a second nest had been formed." Now, although the maternal affection of the female bird, in the instance before us, was sufficiently powerful to induce her to remain with her young, till they were capable of accompanying her in a distant journey, to a more genial climate, as is sometimes the case with house-martins, when deserted by their mates, yet the conduct of the male, if it does not absolutely establish the fact that swifts occasionally abandon their offspring to

destruction, certainly affords strong presumptive evidence in its favour.

The frequent desertion of their last hatched broods by the swallow, house-martin, and sand-martin, which is too well authenticated to admit of a doubt, must appear surprising to every one; but particularly so to those who are aware, how highly the parental feelings of the feathered tribes are excited during the breeding season. Few people are ignorant of the care and attention bestowed upon their offspring, by our domestic fowls; and that the winged inhabitants of the fields and woods, are, in their wild state, no less attached to their progeny than the reclaimed inmates of the poultry-yard, may be inferred from the following examples.

Early in August, 1825, a neighbour took a young cuckoo out of a titlark's nest; and, carrying it home with him, put it into a cage, which he hung in a pear-tree in his garden. The foster-parents, speedily discovering where their nursing was confined, notwithstanding the distance of the place from its former abode could not be less than three-quarters of a mile, proceeded with every demonstration of delight to supply its immediate wants, and continued to provide it with food till it was unfortunately killed by a

cat, though there never was the least probability that it would be restored to liberty.

A still more extraordinary account is given by Montagu in the introduction to the Ornithological Dictionary, p. 33, and following, of some golden-crested wrens, which were brought up in captivity by the parent birds. The narrator took the nest, he informs us, when the young were about six days old, and, putting it in a small basket, enticed the old ones by degrees to his study window. After allowing them sufficient time to become familiar with that situation, he placed the basket within the window, and then at the opposite side of the room. It is remarkable, he observes, that, although the female seemed regardless of danger, from her affection for her offspring, yet the male never once ventured into the room, though he constantly fed the young birds while they were at the outside of the window. The female, on the contrary, would feed them at the table at which he sat, and even when he held the nest in his hand, provided he remained motionless; but, on moving his head one day, while she was on the edge of the nest, she made a precipitate retreat, mistook the closed for the open part of the window, knocked herself against the glass, and fell breathless on the floor, where she lay for some

time. However, recovering a little, she made her escape; and, in about an hour after, he was agreeably surprised by her return, and she would afterwards frequently feed the young while he held the nest in his hand.

The partridge has generally been represented by ornithologists as possessing a more than ordinary share of affection for its offspring, and the anecdote I am about to relate tends greatly to corroborate this idea. A near relation of my own* was told by the late Rev. W. Evans, of Mayfield, near Ashburn, that, some years since, his men, who were employed in cutting a field of mowing-grass, brought him a hen partridge which they had caught on her nest. Being desirous to save the eggs from destruction, he ordered that they should be removed to his house, and placed on some hay in an unoccupied room, intending to put them under the care of a domestic hen; but wishing to know whether the parent bird would take any notice of them in this novel situation or not, he directed that she should be set down near them, when, to his great astonishment, she immediately ran to the spot where they were deposited, and, covering them with the utmost care, continued

* John Blackwall, Esq., of Blackwall, Derbyshire.

to sit till they were hatched. At first she was unremitting in her attention to her young, many of which were ultimately reared and set at liberty, but her anxiety to regain her freedom, evidently increased with their growth; and, as soon as her assistance could be dispensed with, she was suffered to make her escape. This instance is the more remarkable, as the partridge has never been known to breed in captivity.

In a conversation which I had with Mr. Dalton, in the summer of 1822, on the force of that impulse which leads birds to sit upon their eggs with so much patience and assiduity, he informed me that he had removed hen redbreasts from their nests, during the period of incubation, and that, upon gently replacing them, they had continued to sit as if they had not been disturbed. This experiment of Mr. Dalton's, which affords a striking instance of one of the most constant and powerful dictates of nature, self-preservation, being counteracted by a temporary excitation of superior energy, I have repeated with the redbreast, whinchat, swallow, house-martin, the marsh, cole, and great titmice, &c., not only when they have been sitting, but also when they have had small young ones, and almost always with success.

These examples, to which many more might easily be added, will be sufficient, I am persuaded, to convince every unprejudiced mind, that the parental affections of the feathered tribes in general, and, what is more immediately to the purpose, of the swallow and house-martin in particular, are powerfully excited during the breeding season. Now, what, we may ask, can induce the two last-named species, and the sand-martin, deliberately to consign their offspring to a painful and lingering death, in direct opposition to such intense feelings as these? The cause assigned by Dr. Jenner, for conduct so anomalous, is the desire to migrate; and this desire, he maintains, is produced by a change in the reproductive system, which, in the case of the birds under consideration, is supposed to take place prematurely. I say is supposed to take place, for I do not see, how it is possible to ascertain what individuals will desert their progeny, before they carry their intention into effect; and after the accomplishment of the act, no opportunity of examining the internal state of their organization can present itself; this notion, therefore, it is pretty obvious, must have originated in conjecture. That the sudden departure of the swallow, house-martin, and sand-martin, under circumstances so peculiar as those we have been contemplating, is occasioned by the desire

to migrate, I do not dispute; but that this desire results from certain changes which occur periodically in the condition of the reproductive system, seems quite inadmissible. Indeed, the undeniable facts, that every species of the feathered tribes, though subject to these changes, is not migratory; and that snipes, wild-ducks, &c., breed annually, and woodcocks occasionally, in countries where the majority of these birds is known to sojourn during the winter only, are so totally subversive of Dr. Jenner's hypothesis, that to attempt a more complete refutation of it, in this place, would be superfluous.

It is particularly deserving of remark, that the early death, which invariably terminates the sufferings of those devoted nestlings that are abandoned by their parents, powerfully militates against an opinion, extremely prevalent amongst ornithologists of the present day, that many of our summer birds of passage, especially the swallows, are capable of passing the winter season in a state of torpidity; for, if this belief in the liability of the European hirundines to become torpid in autumn be well founded, how does it happen, that late hatched broods of swallows, house-martins, and sand-martins, when deserted, uniformly perish, even under circumstances which are represented as rendering indi-

viduals of their species, too young or feeble to undergo the fatigues of migration, merely dormant? The advocates of torpidity will do well to consider this difficulty with attention, since, if not removed, it leaves them no alternative but to renounce, as untenable, the doctrine they maintain.

APPENDIX.

SINCE the foregoing observations on the occasional desertion of their last hatched broods, by several species of British hirundines, were submitted to the consideration of the society, a favourable opportunity of pursuing the investigation has again presented itself.

On the departure of the house-martins, in October, 1826, it was perceived, that they left some broods to perish in the nests built under the eaves of a barn, situated at the Hill-top, in the chapelry of Blakeley; the edifice being the

same to which I have alluded in the former part of my paper, as a favourite haunt of these birds. This occurrence determined me to have the nests carefully examined; accordingly, after procuring the requisite assistance, a minute inspection of the whole, twenty-two in number, took place on the 11th of November; when, to my great surprise, thirteen were discovered to contain eggs and dead nestlings. With regard to the particulars, which are given below, it is only necessary to remark, that the nests are denoted by the progressive numbers, and that the state of the contents, as there described, is the same in which they were left by the parent birds.

NESTS IN WHICH EGGS WERE FOUND.

NESTS.	CONTENTS.
No. 1	Three Eggs which had not been sat upon.
2	One Egg which had not been sat upon.
3	Five Eggs which had been sat upon a short time.
4	Four Eggs which had been sat upon a considerable time.
5	Three Eggs on the point of being hatched.
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Sixteen, Total.	

NESTS IN WHICH YOUNG BIRDS WERE FOUND.

NESTS.	CONTENTS.
No. 6	Two Nestlings newly disengaged from the egg.
7	Three Nestlings a few days old.
8	Two Nestlings about a week old.
9	Two Nestlings nearly half grown.
10	Two Nestlings about three parts grown.
11	Two Nestlings nearly fledged.
12	Five Nestlings nearly fledged.
13	One Nestling quite fledged.
	Nineteen, Total.

From the unusual quantity of eggs and young deserted by the house-martins on this occasion, it may be inferred, that the desire to perpetuate their species was protracted, in a more than ordinary number of individuals, to the termination of their stay in this country, by the high temperature of the season,* and the great abundance of food consequent upon it.

The circumstance of fresh laid eggs being in several instances forsaken, furnishes an addi-

* On referring to my meteorological journal, I find, that the mean temperature of the months of June, July, and August, respectively, was higher in 1826, than in many preceding years.

tional argument to those previously urged against the hypothesis advanced by Dr. Jenner, that a premature change uniformly takes place in the physical condition of the reproductive system of those birds which abandon their progeny to destruction; for it is in the highest degree improbable, that an organic change, sufficient to induce a total alienation of parental affection, a change, let it be remembered, which, in every observed case, has been found to proceed gradually, should so suddenly succeed to the extremely active state of the system indicated by the recent production of prolific eggs. The simultaneous departure of both sexes also, when they desert their offspring, which, as far as my own researches extend, appears to occur with great regularity, is too remarkable a fact to be accounted for on a principle so uncertain in its operation as that maintained by Dr. Jenner.

A belief, represented by Dr. Fleming, in his *Philosophy of Zoology*, vol. II. pages 72—3, as prevalent throughout Scotland, that swallows are sometimes found torpid in their nests, has most likely originated in the discovery of the forsaken young of the swallow and house-martin, (for both species are termed swallows indiscriminately by the multitude,) in a perishing condition, or dead.

It appears from the following passage, extracted from Pennant's *British Zoology*, vol. II. page 155, that the puffin, when placed under circumstances similar to those which induce birds of the swallow tribe to desert their offspring, sometimes abandons its progeny. "The first young" (of this species) "are hatched the beginning of July: the old ones shew vast affection towards them, and seem totally insensible of danger, in the breeding season. If a parent is taken at that time, and suspended by the wings, it will, in a sort of despair, treat itself most cruelly, by biting any part it can reach, and when it is loosed, instead of escaping, will often resort to its unfledged young; this affection ceases at the stated time of migration, which is most punctually about the eleventh of August, when they leave such young as cannot fly, to the mercy of the peregrine falcon, who watches the mouths of the holes for the appearance of the little deserted puffins, which, forced by hunger, are compelled to leave their burrows."



Blackwall, John. 1831. "On a Remarkable Fact in the Natural History of the Swallow Tribe." *Memoirs of the Literary and Philosophical Society of Manchester* 5, 36–53.

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