

## OBSERVATIONS

CONDUCTIVE

TOWARDS

A MORE COMPLETE HISTORY

OF THE

CUCKOO.

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 BY MR. JOHN BLACKWALL.
 

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**DURING** a period of more than two thousand years, from the time of Aristotle, the father of natural history, to the year 1788, when the excellent observations of Mr. afterwards Dr. Jenner, so justly celebrated for the introduction of vaccination, were published in the Transactions of the Royal Society,\* the history of the cuckoo, if it deserved the appellation, consisted of a tissue of extravagant fables, very sparingly interspersed with facts. It will not be necessary to particularize the many fanciful conjectures transmitted to us by the ancients respecting this bird, as they have been repeatedly no-



ticed by authors of eminence, and are sufficiently well known to the classical ornithologist. It may be observed, however, that so profound has been the veneration of succeeding ages for the opinions of antiquity, and so unbounded the confidence in the accuracy of those collected by Aristotle on this particular subject, that, notwithstanding the great absurdity of some of them, they long continued to maintain the reputation they had acquired, a few slight additions and corrections only having been made by more modern writers, till the publication of Mr. Jenner's interesting discoveries: indeed, almost the only facts in the obscure history of this singular species, that seem to have been known with any tolerable degree of certainty, even towards the close of the eighteenth century, were, that cuckoos appear and disappear periodically; that the call from which they take their name is peculiar to the male; that the female lays in the nests of other birds; that those birds carefully bring up the young cuckoo, which has a weak, plaintive chirp, and is very different in plumage from the old ones; and that it is generally observed to be the sole occupier of the nest. In this state the history of the cuckoo remained, when Mr. Jenner, at the request of Mr. John Hunter,



undertook to investigate the habits and economy of this extraordinary bird, and in the course of his researches, which were conducted with great care and assiduity, he discovered a number of curious facts, scarcely less wonderful than the marvellous but visionary speculations of the ancients themselves. The following brief abstract will serve to convey some idea of what his skill and industry effected.

Mr Jenner informs us, that the first appearance of cuckoos in Gloucestershire, where his observations were made, is about the 17th of April. The song of the male, which is well known, soon proclaims his arrival: that of the female (if the peculiar notes of which it is composed may be so called) is widely different, and has been so little attended to, that few are acquainted with it; it is thought, however, to bear some resemblance to the cry of the little grebe.

Unlike the generality of birds, cuckoos do not pair, and as their eggs are seldom met with till about the middle of May, it is supposed that the females do not begin to lay till some weeks after their arrival. Cuckoos deposit their eggs in the nests of a great variety of small birds, intrusting them to the care of the hedge warbler, pied wagtail,



titlark, yellow bunting, green grosbeak, whinchat, &c. Among these, they usually select the three first, but shew a much greater partiality to the hedge warbler than to any of the rest. The hedge warbler commonly takes up four or five days in laying her eggs, and during this time (generally after she has laid one or two) the cuckoo contrives to deposit hers among the rest. This intrusion often occasions some discomposure, for the old hedge warbler at intervals, whilst she is sitting, not unfrequently throws out some of her own eggs; and sometimes injures them in such a way that they become addle; however, she is rarely observed to throw out or injure that of the cuckoo. She continues to sit the same length of time as if no foreign egg had been introduced, the cuckoo's requiring no longer incubation than her own; nay, it frequently happens that it is hatched first. The titlark is often selected by the cuckoo to take charge of its offspring, but as it is a bird less familiar than many that have been mentioned, its nest is not so often discovered.

The young cuckoo, soon after it is excluded from the egg, commences the extraordinary practice of turning out its companions, which are usually left to destruction. The mode of accomplishing this is very curious:



with the assistance of its rump and wings, it contrives to get a young bird upon its back, and making a lodgment for the burden by elevating its pinions, clambers backward with it up the side of the nest till it reaches the top, where resting for a moment, it throws off its load with a jerk, and quite disengages it from the nest. It remains in this situation a short time, feeling about with the extremities of its wings, as if to be convinced whether the business is properly executed, and then drops into the nest again. It frequently examines, as it were, an egg or nestling with the ends of its wings before it begins its operations; and the nice sensibility which these parts appear to possess, seems sufficiently to compensate for the want of sight, of which sense it is at first destitute. It is wonderful to see the extraordinary exertions of the young cuckoo, when it is two or three days old, if a bird be put into the nest that is too weighty for it to lift out. In this state it seems ever restless and uneasy, but this disposition for turning out its companions continues to decline, from the time it is two or three, till it is about twelve days old, when it usually ceases: indeed, the disposition for throwing out the egg appears to cease a few days sooner, for the young cuc-



koo, after it has been hatched nine or ten days, will frequently remove a nestling that has been placed in the nest with it, when it will suffer an egg, put there at the same time, to remain unmolested. The singularity of its shape is well adapted to these purposes, for, different from other newly hatched birds, its back from the scapulæ downwards is very broad, with a considerable depression in the middle, which seems formed by nature for the design of giving a more secure lodgment to any object that the young cuckoo may be desirous of removing from the nest. When it is about twelve days old, this cavity is quite filled up, and then the back assumes the shape common to nestling birds in general. The same instinctive impulse which directs the cuckoo to deposit her eggs in the nests of other birds, directs her offspring to throw out the eggs and young of the owners of the nests. The scheme of nature would be incomplete without it, for it would be extremely difficult, if not impossible, for the small birds, destined to find support for a young cuckoo, to find it for their own young ones also, after a certain period; nor would there be room for the whole to inhabit the nest.

The eggs of the cuckoo are remarkably small in proportion to the size of the bird;



they also vary considerably in size, weight, and colour. It sometimes happens that two are deposited in the same nest, and cuckoos' eggs are frequently hatched in the nests of other birds, after the birds that laid them have disappeared.

There is certainly, Mr. Jenner observes, no reason to be assigned from the formation of the cuckoo, why, in common with other birds, it should not perform the several offices of nidification, of incubation, and of rearing its young; for it is in every respect perfectly formed for collecting materials and constructing a nest: neither its external shape nor internal structure prevent it from hatching its eggs: nor is it by any means incapacitated from bringing food to its young. To what cause then, he inquires, must we attribute the singularities of this bird? May they not be owing to the following circumstances? The short residence it is allowed to make in the country where it is destined to propagate its species, and the call that nature has upon it, during that short residence, to produce a numerous progeny. The cuckoo's first appearance in Gloucestershire is about the middle of April, commonly on the 17th: its egg is not ready for incubation till some weeks after its arrival, seldom before the middle of



May: a fortnight is taken up by the sitting bird in hatching the egg: the young bird generally continues three weeks in the nest before it flies: and the foster parents feed it more than five weeks after this period; so that, if a cuckoo should be ready with an egg much sooner than the time pointed out, not a single nestling, even of the earliest, would be fit to provide for itself, before its parent would be instinctively directed to seek a new residence, and would be thus compelled to abandon its young one; for old cuckoos take their final leave of this country in the first week of July.

If nature had allowed the cuckoo to stay here as long as some other migratory birds, which produce a single set of young ones, (as the swift or nightingale, for example) and had allowed it to rear as large a number as any bird is capable of bringing up at one time, these might not have been sufficient to answer her purpose; but by sending the cuckoo from one nest to another, it is reduced to the same state as the bird whose nest is daily robbed of an egg, in which case the stimulus for incubation is suspended. Of this we have a familiar example in the common domestic fowl. That the cuckoo actually lays a great number of eggs, dissection seems to



prove very decisively. Upon comparing the ovarium, or racemus vitellorum, of a female cuckoo, killed just as she had begun to lay, with that of a pullet killed just in the same state, no essential difference appeared: the uterus of each contained an egg perfectly formed, and ready for exclusion; and the ovarium exhibited a large cluster of eggs gradually advanced from a very diminutive size, to the greatest the yolk acquires before it is received into the oviduct. The appearance of one killed on the third of July was very different. In this a great number of the membranes which had discharged yolks into the oviduct might be distinctly traced, and one of them appeared as if it had parted with a yolk on the preceding day. The ovarium still exhibited a cluster of enlarged eggs, but the most forward of them was scarcely larger than a mustard seed.

It plainly appears, Mr. Jenner remarks, that birds can keep back or bring forward their eggs (under certain limitations) at any time during the season appointed for them to lay; but the cuckoo, not being subject to the common interruptions, goes on laying from the time she begins, till the eve of her departure from this country; for, although old cuckoos generally take their leave in the first week of July, yet instances are not wanting of eggs having



been hatched so late as the middle of that month.

Among the many peculiarities of the young cuckoo, there is one that shews itself very early. Long before it leaves the nest, it frequently, when irritated, assumes the manner of a bird of prey, looks ferocious, throws itself back, and pecks at anything presented to it with great vehemence, often, at the same time, making a chuckling noise, like a young hawk. Sometimes, when disturbed in a smaller degree, it makes a kind of hissing noise, accompanied with a heaving motion of the whole body.

Its chirp is plaintive, like that of the hedge warbler, but the sound is not acquired from the foster parent, as it is the same whether it be reared by the hedge warbler, or by any other bird. It never acquires the adult note during its stay in this country.

The growth of the young cuckoo is very rapid, and as it is fed for a long period by the small birds that have the care of it, they frequently have to perch on its back, or half expanded wing, in order to gain a sufficient elevation to put the food into its mouth.

There seems to be no precise time fixed for the departure of young cuckoos. Probably they go off in succession, as soon as they are capable of taking care of themselves; for though



they stay here till they become nearly equal in size, and growth of plumage, to old ones, yet in this very state, the care of their foster parents is not withdrawn from them. If they did not go off in succession, it is probable that we should see them in large numbers by the middle of August; for as they are to be found in great plenty, when in a nestling state, they must then appear very numerous, since all of them must have quitted the nest before that time; but this is not the case, for they are not more numerous at any season, than the parent birds are in the months of May and June.

Such are the most important particulars which have resulted from Mr. Jenner's well conducted inquiry, and to the accuracy of the greater part of them I can unite my testimony with that of others, though, in a few instances, our opinions do not entirely coincide.

Mr. Jenner states, that cuckoos continue to lay regularly from the exclusion of the first egg to the time of their departure, and supposes that they are enabled to do so by intrusting the care of their progeny to strangers; being placed by this circumstance, he observes, in a similar situation to the bird whose nest is daily robbed of an egg. Now



if Mr. Jenner means to assert (and this, I think, is the only rational explanation that his language admits) that birds, during the breeding season, can produce eggs at will, and that they may be excited to lay in succession many more than their usual number, by daily removing one from their nests, he is certainly mistaken: Colonel Montagu's experiments,\* as well as my own, decidedly prove the contrary, both with regard to wild and domestic birds.

As cuckoos deposit a single egg only in the same nest, they have been thought, by most persons, to lay no more than one. Mr. Jenner, on the contrary, supposes, from an examination of the ovary in a bird that had just commenced laying, and from having observed that cuckoos' eggs are occasionally laid about the time that the old birds disappear, that they produce a large number. With due deference to such high authority as Mr. Jenner, I think there are sufficient reasons for believing, that both these extremes are erroneous. According to Montagu,† whose opinion is founded on the dissection of breeding females, cuckoos lay from four to six eggs;

\* Ornithological Dictionary, Introduction, p. 10, and following.

† Ornithological Dictionary, Introduction, p. 8, and following.



and this is probably near the truth. In females opened when they had just begun to lay, only four or five eggs were usually discovered, that could possibly be laid in succession; from the smallest of which, to what may be termed the secondary eggs, there was a sudden break off,—not a gradual decrease in size. The scarcity also of the eggs and young of this species, even in its favourite haunts, tends powerfully to confirm the opinion, that Mr. Jenner has greatly overrated its fecundity.\*

It is possible, that those cuckoos that arrive early may sometimes lay two sets of eggs during their stay with us; but then we may safely conclude, that a considerable interval of time always elapses between the production of the first and second sets; and it is quite as probable that those eggs which are occasionally found in July, should be laid by birds that arrive late, as by early coming birds that produce more than one set of eggs; for cuckoos come and go in succession, some individuals appearing three weeks, or even a month before others: besides, it may fre-

\* White Moss, a bog of considerable extent, situated about four miles to the N. E. of Manchester, is a very favourite resort of cuckoos; yet the turf cutters inform me, that even in the most favourable seasons they never knew of more than five or six eggs belonging to this species in different nests at the same time.



quently happen, that many females have not an opportunity of forming a connection with the other sex till long after their arrival; for though it is generally asserted that cuckoos do not pair, and hence it may be inferred that the intercourse between the sexes must be greatly facilitated, yet the accurate observations of my friend R. G. Baker, Esq. certainly render this opinion doubtful. In the spring of the present year (1823) he noticed that a pair of cuckoos frequented the same spot for more than a fortnight, and were so jealous of the approach of any other bird of the same species, that they constantly united their efforts to drive away an intruder, and always with success. I may add, that the male was distinguished from every other in the vicinity by the deepness of his note. This unquestionably looks like pairing, and should at least prevent a hasty decision on a point that deserves further investigation.

Colonel Montagu, from the extraordinary fact related by Mr. Jenner, of two hedge warbler's eggs containing living fœtuses having been found under a young cuckoo about a fortnight old, and from the difficulty which he supposes cuckoos would have in meeting with nests in a suitable state to receive their eggs, if they were compelled to lay them in



regular succession, conjectures, that contrary to the generality of birds, they have the power of retaining the egg in the uterus after it is perfected, and that while it remains there, the embryo is progressively advanced towards maturity by the internal heat of the parent's body.\* Now, without having observed a single circumstance in the whole course of my inquiries that at all tended to corroborate this opinion of Montagu's, I have discovered a curious fact, which appears to render such a supposition altogether unnecessary. On the 5th of May, 1822, I saw a cuckoo in the act of watching a pair of tit-larks construct their nest. The larks had just commenced building, and did not seem to be at all disconcerted at the presence of the cuckoo, which sat on the ground about seven or eight yards from the spot, attentively observing them; and, when disturbed, flew away with great reluctance, and only to a short distance. This nest, which was on Kersal Moor, where the races are annually held, was too distant from my residence to permit me to examine it frequently, and to make such numerous and minute observations as I wished; but on the 12th of May I again visited it, in the confident expectation that it

\* Ornithological Dictionary, Introduction, p. 15.



would contain a cuckoo's egg, and I was not disappointed. I may further remark, in confirmation of this discovery, which, by exhibiting a curious, and hitherto unnoticed, instinctive propensity of this bird, forms an interesting addition to its history, that cuckoos almost invariably deposit their eggs in the nests of other birds, as soon as those birds begin to lay; not unfrequently indeed, immediately after the exclusion of the first egg; and Mr. Baker informs me, that he saw the hen of that pair of cuckoos which he observed so closely last spring, fly directly to a titlark's nest, as to a place with which she was perfectly familiar, though he had never seen her there before, and after raising her head, and looking round, as if to ascertain whether she was noticed, went and deposited her egg in the nest, before the larks had begun to lay. From these circumstances, and from the direct evidence of my own senses, I consider this fact then as satisfactorily established, and it is of importance, in as much as it completely obviates a difficulty which has greatly perplexed modern ornithologists, and which chiefly induced Colonel Montagu to form his extraordinary, but gratuitous opinion, respecting the power of the



cuckoo to retain its egg till it meets with a nest in a suitable state to receive it.

Though Mr. Jenner enumerates a variety of small birds in whose nests cuckoos deposit their eggs, yet he remarks, that in Gloucestershire they give a decided preference to that of the hedge warbler. In this neighbourhood, where titlarks are numerous, their nests are usually selected for this purpose, and perhaps would be so very generally, were they equally abundant in all situations; as, from being built on the ground, they are much more accessible to so large a bird as the cuckoo, than that of the hedge warbler, which is frequently placed in close thorn hedges, or thick bushes. If cuckoos laid in the nests of large birds, their young would not be able to dispossess their companions, and would probably soon perish for want of proper food.

It is now well known, that cuckoos, in proportion to their size, lay remarkably small eggs, which vary considerably both in magnitude and colour; but as very inaccurate representations and descriptions have frequently been given of them, I have had coloured engravings of the most usual varieties, made from drawings of good specimens. (*See the annexed plate.*)



The following Table exhibits the mean weight of the cuckoo, and of several birds in whose nests it most frequently lays: also the mean weight of their eggs, with the ratio of the weight of each bird to that of its egg, omitting fractions.

TABLE.

BIRDS.	Mean weight in grains.	Mean weight of their eggs in grains.	Ratio of Birds to their eggs, in weight
Cuckoo.....	2297	55	$\frac{1}{41}$
Titlark.....	289	35	$\frac{1}{8}$
Lesser Fieldlark	354	37	$\frac{1}{9}$
Yellow Bunting	412	43	$\frac{1}{9}$
Hedge Warbler	332	35	$\frac{1}{9}$
Pied Wagtail ...	333	37	$\frac{1}{9}$

If it be admitted, as I believe it safely may, that cuckoos lay from four to six eggs, it will not be difficult to furnish data from which a rude estimate may be made of the mean annual destruction occasioned by young cuckoos among small birds in England and Wales. Early in May, before cuckoos have begun to breed, and before the foliage of forest trees has been sufficiently expanded to afford them shelter and concealment, I have known nine or ten of these birds come in an evening to roost among the evergreens in the plantations



immediately adjoining our family residence; and as I am certain that all the cuckoos belonging to the township of Crumpsall, in which it is situated, did not come to roost with us on these occasions, and as it is very probable that I did not see all that did come, I think, though the number of males is reported to exceed that of females, that four will not be considered a high average for the latter in Crumpsall, which contains 3,301,816 square yards, nor three too high as a general average for an equal area; since Mr. Jenner remarks, that cuckoos are numerous in Gloucestershire, and Colonel Montagu states that they are plentiful in Devonshire;\* and I know from my own observation, that they are much more abundant in many parts of Lancashire, Cheshire, Derbyshire, Staffordshire, Warwickshire, and also in Westmoreland and Cumberland, especially in the neighbourhood of the Lakes, than they are with us. I am informed likewise, that they are very plentiful in Yorkshire, and also in the principality of Wales. The mean number of eggs laid by those birds that are usually selected by the cuckoo to provide for its progeny is five. Now according to Pinkerton,

\* Ornithological Dictionary, Introduction, p. 10.



the area of England and Wales is 49,450 square miles; which reduced to square yards gives 153,176,320,000. This, divided by 3,301,816 square yards, the area of the township of Crumpsall, and the quotient multiplied by 3, the mean number of hen cuckoos for every 3,301,816 square yards, gives 139,173, the mean annual number of female cuckoos that visit England and Wales; which multiplied by 5, the mean number of eggs laid by the cuckoo, gives 695,865, the number of nestlings produced annually by the mean number of females; and this product multiplied by 5, the mean number of eggs laid by those birds to whose care cuckoos usually intrust their offspring, gives 3,479,325, the mean annual number of nestling birds destroyed by young cuckoos in England and Wales. Enormous as this destruction appears, it is probably rather under than overrated, and when compared with that occasioned by cuckoos in general, or by our British species alone, in the various countries in which it breeds, it sinks into absolute insignificance.

The injuries which so frequently happen to the eggs of those birds in whose nests cuckoos lay, are occasioned, as I have often proved experimentally, by the sitting bird,



in attempting to accommodate herself to eggs of different sizes. If comparatively large and small eggs are placed in the same nest, some of the smaller ones are generally thrown out, or rendered addle, by the hen bird, in endeavouring to arrange them so that she may distribute nearly an equal degree of warmth and pressure to all; but the larger ones, which chiefly sustain her weight, and, consequently, are less liable to be moved, usually remain unmolested. When the eggs of birds are exchanged for others of a uniform magnitude, whether larger or smaller than their own, provided the difference is not so great as to occasion them to be forsaken, no disturbance ensues, whatever their colour may be, the change either not being perceived, or totally disregarded; and the young when extruded, are attended with the utmost care and solicitude.

Cuckoos generally use the precaution of waiting for the absence of small birds from their nests before they venture to lay in them: sometimes, however, their approach is perceived, when the owners immediately make every effort to repel them, but do not always succeed, as the following instance evinces. On the evening of the 24th of June, 1814, I saw a hen cuckoo alight in a field of mowing



grass, when a pair of titlarks attacked it with such fury, that they pulled several small feathers off it. Their loud cries and violent gesticulations attracted the notice of several people at work near the spot, who by throwing stones at the cuckoo drove it to some distance: however, it soon returned, and though repeatedly annoyed, persevered till it ultimately accomplished its purpose, by laying in the nest of the larks. As this bird was on the very eve of its departure, for I did not see a single old cuckoo that year after the 25th of June, the case was an urgent one, and may account for its unremitted exertions. This fact proves also, how very late in the season cuckoos' eggs are occasionally laid.

On the 30th of June last, (1823,) I took a young cuckoo that was hatched in a titlark's nest, on White Moss, on the 28th: seven days after old birds had quitted that neighbourhood; and this nestling, while in my possession, turned both young birds and eggs out of its nest, in which I placed them for the purpose, and gave me an opportunity of contemplating at leisure the whole process of this astonishing proceeding, so minutely and accurately described by Mr. Jenner. I observed, that this bird, though so young, threw itself backwards with considerable force when any thing touch-



ed it unexpectedly. It died on the 2nd of July, the fifth day after it was hatched, and then weighed 318 grains.

Young cuckoos are so very different from adults, that they have been described by several authors as a distinct species. In the colours of their plumage, and in their eyes, they bear some resemblance to young kestrels; while the old birds, in both these particulars, are very similar to the male sparrow-hawk after the third or fourth moult. As young cuckoos do not acquire their mature plumage while they remain in this country, though they are sometimes seen here in September, two months later than old birds, and as they are never found in their first feathers on their return in spring, they must moult during their absence: which clearly proves that they are migratory; as it is hardly possible that they should acquire fresh feathers in a state of torpidity. This fact is further corroborated by the early departure of the old birds, which takes place when the temperature is approaching the maximum for the year, and, consequently, when it is much higher than at the time of their arrival: and it is evident that they cannot become torpid with an increasing temperature: indeed, the young birds, which stay so long after them, instead of dis-



playing symptoms of debility and torpor, continue to advance progressively in growth and vigour. Cuckoos, at a mean of ten years' observations, appear in this neighbourhood on the 22nd of April, when the temperature of the air is  $48^{\circ}$  in the shade, and quit it on the 26th of June, when the temperature is  $57^{\circ}$ .

It has been asserted, that cuckoos sometimes incubate their own eggs, and bring up their own young; but all the instances brought forward in support of this opinion, except one, are totally undeserving of notice; and this might have been passed over without comment also, if Dr. Darwin,\* the Hon. Daines Barrington,† and the Rev. W. Bingley,‡ had not seemed to consider it conclusive and incontrovertible. The circumstance is thus related by Darwin. "As the Rev. Mr. Stafford was walking in Glossop Dale, in the Peak of Derbyshire, he saw a cuckoo rise from its nest. The nest was on the stump of a tree, that had been some time felled, among some chips that were in part turned grey, so as much to resemble the colour of the bird. In this nest were two young cuckoos: tying a

\* Zoonomia, Vol. 1. p. 172-3.

† Miscellanies, p. 255.

‡ Animal Biography, Vol. 11. p. 299, 300.



string about the leg of one of them, he pegged the other end of it to the ground, and very frequently for many days beheld the old cuckoo feed these her young, as he stood very near them." That Mr. Stafford must have been mistaken needs scarcely to be insisted on, since Mr. Jenner has shewn, that when two young cuckoos happen to be hatched in the same nest, the stronger invariably turns out the weaker. The nest which Mr. Stafford found, from the number of young it contained, most probably belonged to a goatsucker, as I know that this species, which seldom lays more than two or three eggs, breeds in the neighbourhood of Glossop; and it might easily be mistaken for a cuckoo, by a person not very familiar with birds, who had only an opportunity of observing it at a distance. If this gentleman had been a good ornithologist, would he not have endeavoured to remove every possibility of doubt in a matter which, it is evident, greatly excited his interest, by examining and describing the structure of the feet of these young birds?

Male cuckoos, a short time before they retire, entirely lose their cry, and this loss is generally preceded by stammering and a difficulty of utterance. Now as most of our singing birds become mute in autumn, solely



from inability to continue their songs, as is manifest from their unavailing efforts to prolong them, whatever occasions their silence, most probably occasions that of the cuckoo also, and I conceive that an efficient cause will be found in the propagation of their species, and in the decrease of their food, which, by relaxing the vocal organs, renders them incapable of obeying the dictates of the will. The well known cry of the male cuckoo is frequently heard in the night.

Various are the modes of accounting for the peculiarities of the cuckoo adopted by different writers on the subject. Some, who have turned their attention particularly to the anatomy of this bird, think they have discovered a satisfactory reason for its not hatching its own eggs, in the largeness and protuberance of its stomach, which they hastily conclude must render the act of incubation difficult, if not impracticable; but when we consider that several birds, as the owl, goat-sucker, &c., whose stomachs are, in these respects, similar to that of the cuckoo, do incubate their own eggs, the insufficiency of this imaginary cause will be very apparent.

Buffon supposes that female cuckoos lay their eggs in the nests of other birds, to prevent the males, which he states occasionally



prey upon eggs, from destroying them.\* The chief objection to this supposition arises from the deficiency of evidence in support of this charge brought against the males.

According to the *Physiognomical System* of Drs. Gall and Spurzheim, cuckoos transfer the care of their progeny to strangers, in consequence of the imperfect developement of certain cerebral organs, termed by these authors, organs of constructiveness and philo-progenitiveness, whose functions are thus necessarily circumscribed. I shall not here discuss the merits of this system, which, notwithstanding the ridicule that is bestowed upon it, is at least entitled to a patient and candid investigation, but shall proceed to consider the reason assigned by Mr. Jenner for the singularities of the cuckoo, which to me appears perfectly satisfactory. This gentleman conjectures, as I have already stated, that the short stay which cuckoos make in this country is the true reason why they do not bring up their own young, as the parent birds would be impelled by a propensity to migrate, to quit their progeny before they were able to provide for themselves. This, as far as regards the British species, certainly seems to be a very sufficient cause:

\* *Histoire Naturelle des Oiseaux.* Tome sixième.



in what degree it is applicable to foreign species, of which Dr. Latham, in his *General History of Birds*, now publishing, enumerates about 87, besides varieties, is an interesting inquiry, which our present very imperfect knowledge of their habits and economy will not permit us to answer. Dr. Latham, indeed, does not particularize more than five or six species belonging to this extensive genus, that lay in the nests of other birds, nor more than twice this number that bring up their own young, and of the manners and propensities of the rest we are almost entirely ignorant.

It is reported that the cowpen oriole, a bird perfectly distinct from the cuckoo, has many of its most remarkable peculiarities, intrusting the care of its offspring to strangers, and laying only one egg in the same nest. Dr. Darwin, in his *Zoonomia*, maintains that the propensities of the cuckoo to lay in the nests of other birds, and to migrate, are not instinctive; and goes so far as to reflect upon the reasoning powers of those who entertain a contrary opinion. But the Doctor, though a profound scholar, and a close observer of nature, was not infallible; and it would be easy to point out numerous errors into which he has fallen, in his very in-



genious and amusing work, especially in the section on instinct. I shall, however, in this instance, content myself with exhibiting the erroneousness of his opinions respecting the cuckoo; which will be best done by tracing the progress of an individual of this species, from its extrusion from the egg, till it arrives at maturity, or begins to propagate its kind; since an examination of its various means of acquiring information on those subjects which are of the greatest importance for it to know, will furnish the surest criterion of what is due to nature, and what to observation and tuition. Let us suppose then, that a cuckoo's egg is hatched in the nest of a titlark about the middle of June. No sooner is the young bird disengaged from the shell, than a disposition to eject whatever happens to be in the nest with it begins to manifest itself; and as young cuckoos increase in size and strength very rapidly, it is soon enabled to turn out the nestling larks, which are suffered to perish within a few inches of the nest, being entirely abandoned by their parents. Now to what cause, I would ask, must we attribute this extraordinary propensity, which skews itself so early? As titlarks do not possess it, and as old cuckoos, after they have deposited their eggs in suitable nests,



interest themselves no further about their progeny, it is evident that it cannot be acquired from them; it must, therefore, be perfectly innate. It may be remarked also, that the chirp of young cuckoos is the same, as Mr. Jenner rightly observes, whatever the species of their foster parents may be: hence it follows that it is not learned from any other bird, but is exclusively their own. After remaining in the nest about three weeks, this young bird deserts it early in July, and begins to acquire the use of its wings; but the care of the titlarks is not entirely discontinued till towards the middle of August; when having obtained a considerable command of wing, a propensity to migrate prompts it to leave the country. The instinctiveness of this propensity one would be inclined to believe could not admit of a doubt; for titlarks are not birds of passage, and as old cuckoos depart late in June, or early in July, it is clear that young ones cannot derive any benefit from their experience: yet Darwin maintains, that migration among birds is as much an acquired art as navigation is among men. With regard to the cuckoo, I trust that I have said sufficient to convince every impartial inquirer, that it is actuated in this particular purely by instinct; and, reasoning from analogy, I should be led



to conclude that this is the case with all migratory birds without exception. But to return to the cuckoo. Early in the ensuing spring, it revisits the country where it was bred, or seeks another equally well suited to its habits and necessities. If a male bird, its well known cry, that is now heard for the first time, and which I need scarcely observe cannot have been taught it, at once distinguishes its sex. If a female, it is solicitous after impregnation, to secure a suitable asylum for its offspring; and here, though Darwin denies it, the operations of instinct are most strikingly manifested. Without any previous instruction, it discovers the nests of other birds, though it constructs none itself, by watching the birds build them; and selecting such only, as from the size of the owners, and their manner of feeding, are best adapted to afford security to its eggs, and proper nourishment for its young, it lays, just when the small birds themselves begin to lay, a single egg in each, till it has produced its appropriate number, as if aware of the consequences that would ensue, were two or more eggs deposited in the same nest.

Having, in this hasty sketch, shewn that the instinctiveness of the most remarkable propensities of the cuckoo admits of direct



proof, it follows, that the notion of the peculiarities of this extraordinary bird being acquired must be relinquished as quite untenable.

I am unwilling to trespass further on the patience of the Society, or I might indulge in numerous interesting reflections that naturally arise out of the subject before me. I must, however, be allowed to observe, in conclusion, that the history of the cuckoo, by the evident marks of design which it displays in the admirable adaption of means to ends, affords a most convincing proof of the existence of a "Great First Cause," the mysterious source of all that is good and beautiful in nature.





Engd by J. E. H. Gill.





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