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## THE CUCKOO PROBLEM IN AUSTRALIA.

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(*Plate XI.*)

It is an odd fact, and one to be lamented, that Australians have done little sustained work among their country's representatives of a very remarkable family of birds, the cuckoos. This relative failure may be due in part to economic reasons and to our extensive distances. It may be due also to the competitive lure of other extraordinary birds with which this "last, lone continent" abounds. As an anomaly, however, I fancy it is due largely to our embarrassing variety of cuckoos.

Australia contains no fewer than fourteen species of these birds, ranging from robust creatures as large as pheasants to beautiful little birds scarcely larger than sparrows, and all but one are parasitic. Sydney itself is surely the most cuckoo-haunted city in the world, since in any normal springtime one may see or hear nine species of cuckoos upon its fringes, and some of them occasionally near the center of the city. I imagine that if all these birds belonged to one species, migratory for preference, they would offer a sharper challenge to nimble wits. As matters are, their very variety is disarming; it causes them to blend unostentatiously with the general bird-population.

However that may be, what watcher of wild birds in Australia would care to think of this continent without its cuckoos? They are not, as one may say, neighbourly birds. They are for the most part undistinguished in form and plumage and flight, and



UPPER—WHITE-BROWED SCRUB-WREN FEEDING YOUNG FAN-TAILED CUCKOO.  
LOWER—RUFIOUS FAN-TAIL FEEDING YOUNG BRUSH CUCKOO.  
PHOTOGRAPHED AT SYDNEY, AUSTRALIA, BY A. H. CHISHOLM.

not one of them could fairly be termed a songster. Yet there is something appealing about these feathered outcasts: something admirable in the bland defiance that carries them through all tribulations in a hostile world and enables them to populate every portion of the continent, from the jungles, forests and heath-lands of the coastal areas to the great lonely spaces of the interior; and, moreover, there is something wistful in their voices, which, however irritating when heard all through the night, possess an "airiness" that never permits them to become prosaic.

One should, I think step warily when striving to interpret bird-voices. It may be sufficiently obvious that a bird singing heartily, and with every indication of good cheer, is in fact expressing pleasure; but it does not necessarily follow that a bird whose customary notes fall plaintively upon our hearing is indeed feeling forlorn. And yet, is it not a striking fact, that although the voices of Australian cuckoos vary so widely, every one of them conveys a strong suggestion of melancholy?

Listen to these wails and trills and screams, and almost you will be persuaded to believe that the sense of *dolour* is not merely a human interpretation: that although these may be mating-calls, the cuckoos have acquired over the centuries some consciousness of being outcasts, and are expressing vocally the loneliness of the non-normal.<sup>1</sup> Listen in particular to the trilling wail of the Fantailed Cuckoo falling through darkness and continuing with the dire insistence that has caused its author to be termed the "Brain-fever Bird"; or listen to the gasping notes of the Brush Cuckoo issuing from a jungle at midnight; or, again, listen to the high-piping monotone of a Bronze Cuckoo emulating the shrilling of a high wind: listen to any or all of these cries and you cannot avoid the conclusion that here is Loneliness, utter and inescapable; here, in the voices of birds, is the spirit of Masfield's Seekers:

"There is no solace on earth for us, for such as we . . ."

I would not have it thought, however, that every cuckoo voice in Australia is entirely dolorous. The Pallid Cuckoo, for instance, can not be credited with melody, but there is a certain heartiness,

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<sup>1</sup> Perhaps there is some evidence here to support the theory of exponents of the theory of territory in bird-life that song is prompted by, or has been developed upon, territorial considerations.—A. H. C.

perhaps an element of "earthiness" in its curious, throaty, ascending call. This bird is, moreover, a definite harbinger of spring in southern Australia, and many people who know nothing of its loose domestic habits are familiar with and cordially welcome the salutation that has caused this cuckoo to be known as the "Scale-Bird." No enterprising boy who takes part in the Bird Call competitions conducted annually in Sydney would dream of omitting the chant of the Pallid Cuckoo from his repertoire. I suspect this popularity to be due not so much to the quality of the cuckoo's call as to its setting in the chorus of early spring; were the same deliberate whistle heard only at night it would be voted eerie.

Further north, in sub-tropical areas, the Koel, or Black Cuckoo, is equally persistent as a harbinger of spring, a fact to which Brisbane newspapers bear witness each September, for they never fail to receive then, reports from rural areas to the effect that "Last night I heard my first Cooee-Bird for the season." Here again it is probable that relatively few people know of the bird's domestic misdeeds; it is the appealing voice that grips them. The voice of the Koel is indeed one of the most notable of bird-utterances, its chief feature a full-throated "Cooeeee" and an equally resonant "Too-wong"—melodiously contralto calls which by reason of their vowel stress contain a suggestion of "the moan of doves in immemorial elms." It has been suggested that the distinctively Australian *cooee* had its origin in the voice of this bird. Be that as it may, the Koel did in fact furnish the name of one of Queensland's largest metropolitan suburbs, Toowong; for to this locality long ago the "Cooee-Birds" came abundantly to feed upon cockspur berries, and in the process of telling their name to all the hills, unwittingly contributed a geographical label.

Voice again is the dominating factor in the popular recognition of the Channelbill, which, two feet in length, is easily the largest of Australian cuckoos. This bird, too, is a migrant, but no harbinger of spring; it drifts down the eastern coast with the coming of summer, and by reason of its screaming prelude to the heavy rains of the tropics it is frequently known as the "Storm-Bird." This great bird is, to speak mildly, the least appealing of the cuckoos. One need have no personal objection to the deception it practices in foisting its family responsibilities on to magpies and Currawongs,

and need not hold the bird to blame for its top-heavy suggestion of the hornbills; but one cannot readily forgive it that appalling scream, a blustering outburst that has not even the saving grace of revelry. To listen to the Channelbill is to mourn the probability that several young magpies, singers in the making, died to make room for this uncouth giant.

Many birds of Australia, as is the case in other countries, are esteemed because of their sociability. It will be clear that this does not obtain with the cuckoos, even allowing for the element of wistfulness which I have suggested is present in the notes of many species. And yet the hand of man, destroyer of so many irreproachable birds, is rarely raised against a cuckoo. I do not suppose that this freedom from molestation is due to the skulking nature of the various species, or even to public ignorance of their murderous tendencies; it is due rather to the fact that cuckoos do not directly affect man or his products, whereas if they were occasionally fruit-eaters, like some of the honeyeaters, or were edible, like the pigeons, they would be much less abundant than they are.

With bird-students the outlook is different. We are impelled at times to give serious thought to the menace of the cuckoos, recognising that their birth-rate implies a commensurately larger death-rate among other insectivorous birds, and recognising also that intense parasitising may gravely decimate the numbers of a restricted species. What, for instance, of the Rock-Warbler, a bird found only in the sandstone areas near Sydney? Is it likely to be endangered by the ravages of the Fantailed Cuckoo? I suggest that in such cases we may well have faith in Nature, realising that even if excessive attention by cuckoos seriously decimated a species, the consequent shortage of nests would react against the cuckoos themselves and cause them to "break in" new fosterers.

Realising this, we may peep into a honey-birds' nest and, seeing there an egg slightly different from the others, we may reflect that here is a murderer in the making, and that both sentimental and economic interests would be served by removing this egg and saving the lives of unborn honey-birds; but upon further thought (unless we be merely egg-collectors), we will not interfere. Full

often, too, we may come upon a robust young cuckoo luxuriating in a flycatchers' nest, the bodies of the baby flycatchers cold in death below, and the misguided foster-parents working themselves thin in the interests of their changeling, and again we may feel an impulse to right this wrong; but again, if we are discreet, we will set aside the merely human view and refrain from meddling in a drama that is, in plain fact, no concern of ours. Far better to let the uncanny process run its course, to mark carefully and marvel at all developments associated with that menacing egg, and to endeavour to trace through these factors the origin and history of avian parasitism.

Is there, after all, any need to look far for the beginning of this remarkable habit? Are not its early stages suggested by the behaviour of particular birds today? I think here of two Australian species, widely dissimilar. The Large-billed Scrub-Wren, a jungle denizen, consistently lays its eggs in disused nests of the Yellow-throated Scrub-Wren; I have found eggs under these circumstances on many occasions, and have only twice seen the real nest of the Large-bill. Secondly, the Blue-faced Honeyeater has so strongly developed the practice of re-furnishing old nests of the Babbler, Magpie-Lark, etc., that its original nest, a saucer-shaped structure suspended among leaves, is rarely found today.

What do these cases imply? Surely the evidence suggests that in course of time the Large-billed Scrub-Wren and the Blue-faced Honeyeater, perhaps by reason of successive generations inheriting tendencies towards nest-stealing, may lose either the desire or the ability to build nests, thereby becoming wholly dependent upon other birds for homes. It must inevitably happen, if the drift extends thus far, that there will not be sufficient disused nests to go round, upon which the homeless birds must either oust other birds or drop their eggs in with other clutches. And once the habit of depositing eggs in occupied nests of other birds is developed with some consistency, surely we are in sight of complete parasitism!

It seems to me, however, that the *origin* of parasitism is not the most appealing problem associated with cuckoos. How much more fascinating is it to study the incidence of the habit, to mark how these strange birds have been taught to be cautious by their very

dupes, and to follow the dramatic career of the young cuckoo in the nest!

Why is it, to begin with, that birds generally recognise the cuckoo menace only up to a certain point? When, for instance, a Koel enters the territory of Friar-Birds, these truculent and noisy honeyeaters attack the cuckoo so fiercely that they sometimes beat it to the ground; yet when the Koel steals her eggs into Friar-Birds' nests those eggs are contentedly brooded and the young Koels that appear later are reared with thorough solicitude. And so it is with other fosterers in relation to other cuckoos. It may be urged, of course, that birds do not recognise cuckoos as cuckoos—as borrowers of nests—but attack them merely because they are territorial intruders. If this be so, why do many birds fly into a frenzy at the mere call of a cuckoo during the breeding season and pay no heed to it at other times? I cannot take this delicate point to any definite conclusion, my only suggestion being that the potential fosterers attack cuckoos because they recognise them, in some degree, as *meddlers* at nests, without appreciating what that meddling portends.

Following hard upon the anomaly cited above is the puzzle as to how the intruding egg is deposited in a nest. This is one of the most debated points in cuckoo lore; there has been much argument about it, and the end is not yet. Whatever be the case in Europe, there can be little doubt that some cuckoos in Australia sit upon the chosen nest to lay and others deposit the egg with the beak. Direct deposition is, of course, the "natural" method. I take it that this course is always followed by the large Channelbill, which patronises the sturdy, stick nests of crows, magpies and Currawongs, and also by the Koel, which favours chiefly the commodious, open nests of friar-birds, orioles and fig-birds. We have, indeed, a record of a Channelbill being seen to sit upon a nest, and several records of Koels being seen to do likewise; and in each case the cuckoo's egg was subsequently found in the nest. Possibly some of the smaller cuckoos occasionally sit upon the nest to lay, but this is a sheer impossibility in most cases.

I believe, therefore, that as a rule the female cuckoo (of the smaller species), inspects the nest in advance, and if it be either too small or too fragile to enter, she lays upon the ground, takes

the egg in her beak, flies quickly to the "marked" nest, clings to the side or some other convenient support, and drops the egg gently into the chamber, after which she seizes one of the fosterer's eggs and flies off, dropping the stolen egg as she flies. There are records in Australia of cuckoos being shot while carrying eggs—their own eggs—and of others leaving eggs on the ground when disturbed.

There appears to be a popular impression that cuckoos are lazy and careless birds—inconsequential creatures that deposit their eggs in haphazard fashion and leave the continuance of their race to chance. Actually, there is probably more energy, more resolution, and more individuality involved in the exercise of the parasitic habit than in the building of a nest and rearing of young; and as for the charge of carelessness, you have only to look well into the subject to realise that lapses are relatively few, that they are due almost entirely to stress of circumstance, and that they are in fact calculated to place a healthy check upon Cuckoos when the numbers threaten to become too numerous.

It will be well, however, not to go to the other extreme and acclaim the cuckoos for supposed high skill in selection. The credit lies rather with the more intelligent of the fosterers; for these birds, by deserting damaged nests and rejecting unsuitable eggs, have actually "trained" the parasitic birds to their present skill. Applaud the cuckoos for their adaptability if you will, since they have overcome all obstacles to their parasitic progress, but save a word of commendation for the effective manner in which the little fosterers have applied the pressure of natural selection.

It might perhaps be argued that the large number of fosterers patronised by certain Australian cuckoos indicates marked looseness in selection; for the Pallid Cuckoo has been shown, on the basis of merely *one* egg-collection, to have "borrowed" the nests of no fewer than 81 species of birds, the two common Bronze Cuckoos 64 species each, and the Fantailed Cuckoo 43 species. Actually, however, each cuckoo favours a few particular fosterers, and only when the supply of such nests falls below the demand do they turn to other kinds.

There is a theory, somewhat timidly advanced, that a female



cuckoo will give first choice to the kind of nest in which she herself was born. This proposition is hedged with difficulties, but it seems to me on the whole a reasonable assumption. Such an action would appear to be a natural one—on the part of an “unnatural” bird! What are we to assume, however, in the case of cuckoos which “fluke” their way into this troubled world in unusual nests? Does it follow that environmental leanings will cause them to endeavour to make those unusual fosterers less unusual?

Suppose, too, that a female Fantailed Cuckoo born in a robin’s nest had for mate a male born in a honeyeater’s nest—what then? At a guess, I should say that this would make little difference, since it is doubtful (and especially so in the light of the suspicion that cuckoos are polyandrous or promiscuous), whether the male exercises any influence on the choice of nest or colour of eggs. Suppose again that a female Robin-Cuckoo mated with a Honeyeater-Cuckoo, a Wren-Cuckoo, and a Flycatcher-Cuckoo, and that each male exercised some influence in respect of nests and eggs—what a pretty tangle the lady would be in! And what a sad waste of all her “inherited training” in the principles of natural selection! For surely this law would be strained to breaking-point—it could not, for instance, achieve harmony in egg-colors—if it were continually disturbed as a result of “mixed marriages” among cuckoos!

The late H. L. White, who got together Australia’s largest collection of birds’ eggs, was firmly of opinion that each species of cuckoo has favorite fosterers, that these are not numerous in any case, and that when open nests are used there is a broad, and sometimes striking, similarity between the egg of the cuckoo and that of the regular fosterer. “There is no doubt in my mind,” he wrote, “that Australian cuckoos which lay in open nests usually select as foster-parents those birds whose eggs nearly approach their own in colouration.” He had in his collection scores of clutches that apparently refuted this view, but these he described as “chance” combinations, leaving perhaps 90 per cent that harmonised.

It is probable that Mr. White’s view was based largely on the Pallid Cuckoo, which exhibits a strong preference for open nests and which lays a pink egg, so like many honeyeaters’ eggs that it is sometimes difficult to distinguish them. This, it may be said,

is an eloquent instance of natural selection; the fosterers, being able to see the eggs, have gradually eliminated unfavorably colored ones and "trained" the cuckoos to egg-harmony. Why, then, is the color-harmony equally striking in the case of the Black-eared Cuckoo, which has only two regular fosterers, the Speckled Warbler and the Red-throat, both of which build *domed* nests? In each case the egg of the Black-eared Cuckoo, so unusual and attractive in its reddish-brown colour, so closely resembles that of the fosterer that it may be separated only by rubbing off the pigment, which in the fosterers' eggs is ingrained in the shell.

Some few other points of interest in regard to cuckoos' eggs, with the H. L. White collection as a basis, remain to be stated. The Channelbill (4 fosterers), and the Koel (11 fosterers), patronise only open nests, and the Black-eared and Chestnut-breasted Cuckoos only domed nests; all other cuckoos use both open and domed nests. Of the 81 fosterers recorded for the Pallid Cuckoo, however, 72 build open nests, including 34 honeyeaters, whereas the Fantailed and Bronze Cuckoos show a general preference for domed nests. The doubtful honor of being host to *six* species of cuckoos (in various parts of Australia), is held by the Red-backed Wren; several other birds, notably robins and fantails, have acted from time to time as host to *five* species of cuckoos. In addition to having the largest number of dupes, the Pallid Cuckoo holds the record for extremes, since it ranges from nests swaying perilously in the tree-tops to others built right on the ground, and, moreover, its egg has been found in the nest of the Magpie-Lark, a bird as large as a pigeon, and in that of the tiny Emu-Wren, whose body is scarcely more than two inches long.

An elusive little problem, upon which Australians hope to concentrate shortly, is involved in the question as to whether any female cuckoo, having found suitable fosterers, takes any further interest in her eggs or young in the various nests. I incline to the view that she does, but only vaguely. Since the cuckoo has no brooding to do, she might as well exercise vigilance as do nothing; and certainly she does "stick around," for if a nest containing a cuckoo's egg is disturbed and a second one is built, you may look with confidence for a cuckoo's egg in the new nest. Possibly there is a hint upon this point to be gained from the fact that there is

usually more than one young Channelbill in a crow's or a magpie's nest. Dr. W. Macgillivray deduces from this fact, and marvels accordingly, that the young cuckoos (while still blind and naked), are able to distinguish each other and thus eject only their foster-brethren. Surely this is asking too much, even of such amazing birds as cuckoos! I would prefer to assume that the adult Channelbill revisits the nest and carries out the ejections. Indeed, it seems very doubtful if young Channelbills ever throw out eggs or young under any circumstances. Crows and magpies, unlike smaller birds, are well able to feed both their own offspring and young cuckoos, and (again unlike smaller birds) there is room in the nests for both: wherefore, it appears probable that the infantile "touchiness" has disappeared in this case. Anyway, there are several records of fosterers rearing both their own young and Channelbill Cuckoos at the same time.

Ejection of eggs or young by blind and naked baby cuckoos of the smaller species has, of course, been witnessed on various occasions in Australia. No one has seen an adult cuckoo assisting in the ejection, and we do not believe (in spite of a European suggestion on the point), that this is ever the case, the baby cuckoos being quite well equipped for fighting their own battles. Whether the mother cuckoos assist in the feeding later is another matter. We have at least one Australian case of a cuckoo being seen to visit a nest and feed a young cuckoo, and two sound observers have given particulars of young cuckoos that had left the nest being fed by adult cuckoos as well as by the fosterers. I am convinced, however, that these odd cases are merely exceptions that prove a rule, and that the smaller cuckoos, at all events, customarily leave the feeding of their young entirely to other birds.

Recent breeding seasons have been bountiful ones for cuckoos about Sydney, due probably to heavy rains and consequent lushness of vegetation. We have, in fact, seen so many of these parasites preying upon other birds from late August to late January, that the old question has arisen as to whether the cuckoos are worth the mortality they entail. A student of cuckoos in England suggested a few years ago that there were approximately 1,250,000 cuckoos' eggs laid in the United Kingdom each spring, at an average

rate of 10 to each pair of birds. If this be broadly correct, imagine how many cuckoos' eggs are deposited each year in Australia, with its vastly greater area and twelve more species of avian parasites; and imagine in turn the countless number of other birds that are being sacrificed every year by the adult cuckoos removing eggs and the infant cuckoos slaughtering nestlings!

On the other hand, however, the cuckoos have a place of their own in natural economy because of their fondness for caterpillars. An amazing indication of the capacity of the parasitic birds in this respect was given by a young Bronze Cuckoo which was kept in an orchard in Victoria; this bird, no larger than a sparrow, ate at one meal over 300 caterpillars of the codlin-moth (taken from a bandage on a fruit-tree), and it maintained the healthy average of 260 to each meal!

All things considered, therefore, it may be that the Cuckoos justify their existence on an economic basis; and as for the ethical aspect, even if we wonder why Nature developed the lopsided process of avian parasitism, we need not necessarily follow the English curate who made a practice of shooting cuckoos because "they are such immoral birds!"

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