

warblers of the bush can have the least doubt that those delicate strains, audible only a few feet from their source, are prompted by the spirit of affection, and by that alone. The poet is close to the truth when he sings of "the low love-language of the bird."—H. STUART DOVE. West Devonport, Tasmania.

From Magazines, &c.

THE REDTHROAT.—Mr. Donald Macdonald in his "Nature Notes" in *The Argus*, quotes from a correspondent ("Mallee Bird") an interesting field note regarding the Redthroat (*Pyrrholæmus brunnea*):—"It is shy and vigilant, its haunt being generally thick scrub or turpentine bush, so that it is difficult to find the nest. This is oval in shape, of great size compared with its tiny architect, wondrously compact in its blending of dry strips of bark and grass. It is warmly lined with feathers, and has an entrance near the top. Three eggs of a rather dark tint are the full complement. The nest is built entirely by the female, and, like most of the Wren family, it will, on the slightest suspicion of being watched, leave a nest half finished and begin a new one. It seldom associates with other small birds, and on a calm day its sweet, low note can be heard 50 or 60 yards away. The sound is something like that made in whistling through the teeth, yet in a high key. It might be called a warble."

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BOURKE PARRAKEET.—In May 1904 Mr. W. R. Fasey purchased in England a pair of Bourke Parrakeets (*Neophema bourkei*). He lost the hen shortly afterwards, but in March, 1905, procured six more birds, of which one hen lived. "The survivor," says Mr. Fasey in *The Avicultural Magazine* for July, "is the parent of the two strong and healthy birds now flying about as well as any birds I have. There is practically nothing to record. They appear to be easy to breed, and sit very steadily, the hen never leaving the nest even when I have tried to disturb her. They are quiet and peaceable birds, and not in the least interesting, excepting in the evening before going to roost, when they fly about very wildly. The young are marked exactly as the adult pair, the only difference I can discover being their rather smaller size. The old pair are now nesting again. Neither these birds nor any of the Grass-Parrakeets (excepting the Budgerigars) can stand much cold, and I am of opinion they cannot be kept alive for any lengthy period without growing grass to eat."

SOUTH AFRICAN BIRDS.—*The Journal of the South African Ornithologists' Union* for May contains a very interesting paper by Mr. W. L. Sclater, M.A., F.Z.S., on "The Migration of Birds in South Africa." Africa, south of the Zambesi, has 814 species of birds, which the author divides into five categories—Residents, Northern Migrants, African Migrants, Partial Migrants, and Island Breeders. The Northern Migrants are mostly European birds, which every year journey from the Northern Hemisphere to the Southern and back. Of the visitors in this category, he says:—"While there can be no doubt that the great majority of these birds, especially among the waders, make no attempt to breed, there is undoubted evidence that some few do so." The African Migrants arrive with the northern birds, nest in South Africa, and return to winter in tropical Africa. Many of these are Cuckoos. Partial Migrants are described as those species which, while subject to migratory movements, appear to be always present in South Africa in fair numbers. Food and climate conditions determine their partial migrations. The Island Breeders number 36, are most abundant on the coasts of South Africa in winter, and breed in distant oceanic islands, such as Kerguelen. To increase knowledge on the subject of migration it has been proposed to issue schedules to be filled in by lighthouse-keepers, teachers, and others. What strikes an Australian at once is the readiness with which the birds of Southern Australasia would permit of a similar classification. The area is, of course, much smaller, and the number of species to be dealt with correspondingly less. A noteworthy point of difference is that all our "Northern Migrants," with the exception of the Swifts, are Limicoline, the reason probably being that there is no continuous land space which the land birds of weaker wing powers could follow on a southern migration to Australasia; and yet the "Northern Migrants" of South Africa must have crossed the Mediterranean.

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THE CEYLON JUNGLE-FOWL.—The conclusions arrived at by the great naturalist Darwin were that the progenitor of our races of domestic fowls was the Jungle-Fowl of India (*Gallus bankiva* or *sonneratii*), and that the other three species of *Galli* had no lot or part in modern poultry, although the evidence was very scanty so far as the Ceylon Jungle-Fowl (*G. stanleyii*) was concerned. From time to time doubts have been expressed as to the position assumed by Darwin, more especially in Ceylon, where it was claimed that the wild fowl of that country interbred with the common hen. With the object of obtaining further evidence on this question, the Ceylon Poultry Club commenced in 1903 a series of experiments, which have just been brought to a conclusion, the results of which are published in

Spolia Zeylonica. Great difficulties were experienced, chiefly in the direction of securing wild birds and taming them sufficiently to be kept in enclosed runs. "Attempts have been made to produce the hybrids both ways – *i.e.*, by mating the jungle cock with domestic hens, and by the domestic cock with jungle hens. The latter way was a complete failure. On the whole, it was found that the jungle cocks seemed to be more amenable in captivity than the jungle hens." Many of the wild birds died within a few weeks after they were captured, generally about the fiftieth day. Eggs taken from the wild hen's nest hatched badly. After many trials, some of the jungle cocks were secured and kept alive long enough to be bred from. They would, however, only consort with one hen, as they are monogamous.

Seven different matings with hybrids took place, the results of which are very suggestive. From the crossing of the jungle cock with domestic hens several of the hybrids of both sexes were reared, which were utilized for further experiments. First, between a hybrid cock and domestic hen. In every case fertile eggs have been produced and strong, healthy chickens hatched out. Secondly, a hybrid cock with a hen produced from the first lot, which may be said to be one-fourth jungle and three-fourths domestic. This also proved successful, as chickens were reared. The test of the experiment was mating a hybrid cock with a hybrid hen, for if that could be achieved the question would be settled in favour of the Ceylon Jungle-Fowl being regarded as a parent stock. It was failure in this direction that led Darwin to his conclusion. To that extent the great naturalist has proved correct, as not a chicken has been obtained from this mating. "Each hen has laid several clutches of eggs, and the eggs have been incubated by the hybrids themselves and by other hens, but no chicks. The great majority of the eggs have been infertile; only in one or two instances have two or three of the eggs been addled, which points to the egg having been fertilized." Other experiments gave the same results, but whenever the jungle or hybrid cock was mated with a wholly or partly domestic hen chicks were obtained. "The mating of the domestic male with jungle female gives a negative result. That of the jungle male and domestic female gives the hybrids, male and female. The hybrid female mated back to the jungle cock gives negative results," as does the mating of the two hybrids.

This valuable and interesting experiment, which it may be hoped will be continued on a more extended scale, proves that the hybrids will breed under certain conditions, and would indicate that the Ceylon Jungle-Fowl has probably exerted some influence. But it does not afford sufficient evidence to lead us as yet to accept it in any way as responsible for our races of domestic fowls. That opens a wider question which has not been touched.—*The Times*, 28th September, 1906.

BIRD SANCTUARY.—In regard to the Sounds National Park, New Zealand, Mr. Donne, Superintendent of the Tourist Department, in his annual report to Parliament, states that owing to the invasion of stoats and weasels from the Eastern district, the native bird life is diminishing, more especially the Kiwi and Kakapo. Good work for the preservation of these birds is being done on Resolution Island, but the question of obtaining a small island of the Steward group for this purpose might be considered.

Mr. Richard Henry, the caretaker on Resolution Island, reports that fishermen and others visiting the Sounds have given him a good deal of trouble by destroying the Ducks and other birds. When visiting neighbouring localities, such as Chalky and Preservation Inlets, he says he "did not see a Duck of any kind, but dogs and guns at every camp, and a litter of Kaka and Pigeon feathers." He was told that this was the result of havoc caused by ferrets and weasels, but he could not believe that these animals were to blame for all he saw. It was very desirable that stringent regulations should be made, providing heavy penalties for persons landing in the Fiordland district with dog and gun. Until this is done the native birds will inevitably be decimated. Mr. Henry now has a motor boat, in which he patrols the shores of Resolution Island whenever the weather permits, and visits the neighbouring mainland in search of wingless species of birds—Kiwi, Roa, and Kakapo—many hundreds of which he has during his residence in the Sounds transferred to Resolution Island. In the latter part of last year he liberated seven more Kakapo or Ground-Parrot on the island. Kaka and Pigeon, according to Mr. Henry, are still numerous, and he found native Robins (which he had thought were all gone) on one of the small islands. The beautiful Paradise Duck breeds close to Mr. Henry's place at Pigeon Island, and in his report he places on record some interesting observations with regard to their habits.—*The Press*, Canterbury, N.Z.

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THE QUAIL SEASON.—In the *Age* of 29th October we are informed that the Stawell Game Protection Society is agitating to get the opening of the Quail-shooting season altered from 1st March, as at present, to 1st February. On 31st October Mr. G. A. Keartland writes to the *Age*:—"In February the Quail are breeding all over the State, and in the very earliest districts eggs and young broods may be seen as late as the end of March. If the alteration is made as desired the birds will soon be as scarce as they were ten years ago, and the sportsman will have to content himself with the little Hemipodes which breed in the spinifex in the far north, and some of which occasionally visit the

northern parts of the State when driven from their usual haunts by drought. The Stubble Quail, so keenly sought by sportsmen and Quail-slaughterers, is just starting breeding now, and as they rear three or four broods in a season it is at once apparent that to commence killing the old birds on 1st February means that only half the complement of young will be reared. The Quail suffer from two afflictions—the impatient pot-hunter, who wants to get to work before the sportsman thinks of doing so, and the Quail-slayer, who delights to brag of the thousands of birds he has killed in a season. On 1st March of this year three out of the first four birds my dogs found had broods of chicks following them. I called on the farmer who had invited me to shoot, and told him that I would come again a month later, as by killing a few brace then I was wasting the lives of all the little ones. Many sportsmen were in hopes that after the experience of two seasons, during which the birds enjoyed extended protection, no further attempt would be made to tamper with the *Game Act*; but in response to an appeal from some of these same gentry Mr. Cameron made an alteration somewhat on the lines now proposed, with the result that parcels of little chicks were sent to the officers administering the Act to show the folly of the change. Mr. Bent tried to meet their wishes, but after a few days' trial had the good sense to cancel his alteration of date. I would suggest that the Stawell society alter its name to that of the 'Game Extermination Society,' and that its members advocate the abolition of the *Game Act* altogether, and then they could get some nice bags directly the hay was cut for a season or two, and in a few years Quail-shooting would become a matter of ancient history."

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IS THE KEA CARNIVOROUS?—The Kea (*Nestor notabilis*) or Mountain-Parrot is found only in the middle island of New Zealand, where it lives among the peaks and valleys of the Southern Alps.

When discovered by Mr. Wm. Mantell, in 1856, the Kea's chief food seemed to consist of insect larvæ and berries. However, as early as 1868 it was suspected not only of eating meat, but of becoming a bird of prey of no mean order. Rumours were heard to the effect that the bird attacked and killed sheep for the sake of the kidney and the kidney fat, which formed its special delicacies.

The first recorded instance, which was published in the *Otago Daily Times*, runs as follows:—

"For the last three years the sheep belonging to a settler, Mr. Henry Campbell, in the Wanaka district (Otago), appeared to have been afflicted with a new kind of disease. The first appearance of this supposed disease is a patch of raw flesh on

the loin of the sheep about the size of a man's hand. From this matter continually runs down the sides, takes the wool completely off the part it touches, and in many cases death is the result. At last a shepherd noticed one of the Mountain-Parrots sticking to a sheep and picking at a sore, and the animal seemed unable to get rid of its tormentor.

"The run-holder gave directions to keep watch on the Parrots when mustering on high ground. The result has been that during the present season, when mustering high up on the ranges near the snow-line, they saw several birds surrounding a sheep, which was freshly bleeding from a small wound on the loin; on other sheep were noticed places where the Kea had begun to attack them, small pieces of wool having been picked out."

Though this record casts grave suspicion on the Kea, it does not by any means absolutely prove that it was the culprit.

However, though nearly 50 years have passed since the record was first published, there has not been one genuine attempt to inquire into the case, and, up to the end of 1905, this is the only definite case recorded where a man actually saw a Kea picking at a live sheep.

The strongest evidence against the bird was the circumstantial, which may be classed as follows:—

Against the Kea—

a. The account of the Wanaka shepherds.

b. Only where Keas were known to live were the sheep wounded after the Kea's method. Where they were unknown, no instance of this special kind of sheep-killing had been seen.

c. If sheep had been killed, and the birds in that place were shot, the killing at that spot ceased.

d. Keas had been seen to fly off the bodies of sheep, and wool and fat had been found in their crops.

e. Some Keas in captivity would eat meat, fat, skins, &c.

This evidence may be sufficient to satisfy the general public, but it is inadequate to prove it conclusively as a scientific fact.

For the Kea—

a. The lack of recorded eye-witnesses.

b. In many places where Keas were known to live no sheep had been killed after the Kea's method.

c. Many Keas in captivity would not eat meat, &c.

d. Many of the men who accused the bird were paid for exterminating them, and they would naturally wish the story to be believed.

In response to several requests we have received a large amount of evidence from men who live, or have lived, in the Kea country—namely, musterers, shepherds, head shepherds, managers of stations, run-holders, and station-owners.

These, it is true, are probably not trained scientific observers. Nevertheless, they all live in contact with facts ; and we are sure to get nearer to the truth by taking the experiences of men who have spent most of their lives in Kea country, than that of men who judge the birds mostly from caged or preserved specimens.

To make the evidence as reliable as possible, the following precautions have been taken :—

- I. Nothing but accounts from eye-witnesses themselves has been taken.
- II. Evidence without the writer's name and address has been cast out.
- III. All details, as year, station, &c., have been received in each case.
- IV. The witnesses, if necessary, have been cross-examined by post.
- V. All the accounts of Keas attacking sheep have been forwarded with a written statement that, if necessary, the writer will be willing to swear to his evidence before a Justice of the Peace.

Among numerous correspondents over 30 state that they have seen the Keas actually attacking sheep. These witnesses do not consist only of musterers and shepherds, but in many instances they are either managers of the sheep stations or the station-owners themselves. Summing up the different accounts, the bird's mode of procedure seems as follows:—They may attack in ones or twos or in numbers, but usually one or two birds do the killing and the others share the spoil. The Keas do not, as some people think, attack the sheep that are in poor condition, but always seem to choose the pick of the flock. The bird settles on the ground near its quarry, and, after hopping round for some time, it leaps on to its prey, usually on the rump. If it cannot get a firm grip with its feet, the movement of the sheep causes it to fall off, but it persists until it has firmly perched itself on the sheep's back. Then the Kea begins its operations by tearing out the wool with its powerful beak, and at last gets its beak into the flesh.

The sheep, which for some time has been moving uneasily about, gives a jump as the beak pierces the flesh, and then begins to run wildly about in vain efforts to rid itself of its tormentor. When, however, the sheep finds it cannot dislodge its enemy, it seems to become terrified by pain and fright, and rushes blindly about, usually at a high speed.

Sometimes the sheep tears round the flock until it is played out and cowed, when it sinks to the ground and lies with its neck stretched out, a picture of misery.

If snow is on the ground the poor beast flounders about until it gets into a snowdrift, and then it becomes an easy prey to the relentless birds.

At other times the terrified sheep, as if making a last despairing attempt to get rid of its enemy, rushes madly forward in one direction, usually down hill, at a terrific speed, quite oblivious of rocks and pitfalls, the Kea meanwhile holding on and balancing itself with outstretched wings.

Very soon the sheep strikes a rock or stumbles and rolls over and over down the hill, only to get on its feet again and repeat the performance time after time. When the beast stumbles the Kea rises on its wings, and settles down again on to the sheep when it has regained its feet.

This awful race is continued until, bruised by its numerous falls, utterly exhausted by its death struggles, and maddened with pain, the terrified animal stumbles to rise no more, and becomes an easy prey to the Kea.

The blind rushes often end even more tragically. The sheep in its blind rush often comes to a precipice, and, with the same mad impulse that brought it so far, it leaps over the edge, and is dashed to pieces on the ground below. In this case the Kea leaves go its hold as soon as the sheep begins to fall, but follows the unfortunate animal in the descent, to satisfy its hunger on the result of its labours.—The *Canterbury Press*, N.Z., 8th October, 1906.

Reviews.

[“A Key to the Birds of Australia, with their Geographical Distribution.” By Robert Hall, F.L.S., C.M.Z.S. (Second edition.) Melbourne: Walker, May and Co., Mackillop-street. London: R. H. Porter, 7 Princes-street, Cavendish-square, W.]

MR. Robert Hall is a busy work-a-day man, therefore it is more to his credit that he has been able to find time to rewrite in a measure his useful “Key,” with additions bringing it up to date. No working ornithologist can afford to be without this veritable *multum in parvo*.

The 74 well-executed half-tone pictures of birds from photographs by Mr. F. Verrell Heath, taken from John Gould’s celebrated folio work, are a welcome additional feature to the “Key” from an educational standpoint. Fresh interest is also added by giving the meanings, as far as could be ascertained, of the technical names of genera and species. For these the author courteously acknowledges the assistance of Professor T.G. Tucker, Litt. D., and of Messrs. E. R. Pitt and W. J. Stephen.

The “Key” comprises a concise digest of all known species of birds found in Australia (including, of course, Tasmania), and is built practically on the lines laid down in the classical “Catalogue of Birds” of the British Museum. Regarding “Distribution,” Mr. Hall has adopted Professor Baldwin Spencer’s idea of sub-regions—Torresian, Bassian, and Eyrean—first promulgated

in the "Horn Expedition Report," and while retaining Dr. E. P. Ramsay's division of provinces, &c., Mr. Hall has, for convenience sake, substituted the numerals 1 to 9 respectively for these areas. Touching "Species and Sub-Species Recently Described as New," Mr. Hall's annotations are brief: in many cases he merely—wisely, perhaps—records the reference to which students can refer and make their own deductions. In his "Additions to and Suggested Alterations in Text" the author enters more debatable ground. For instance—(1) That *Acanthizadiemenensis* (Gould) equals *A. ewingi* (Gould). Students now accept these as distinct. See *Emu*, vol. iii., p. 179 (Legge), and "Nests and Eggs of Birds," vol. i., p. 273 (North). (2) That *Melithreptus lætior* (Gould) is a fully adult form of *M. gularis* (Gould). Evidence in the shape of an authenticated series of each is against this. See *Emu*, vol. iv., p. 71, also "Nests and Eggs," p. 369 (Campbell). It is of much interest to local ornithologists to learn that there is a second Gallinule or Moor-Hen in Australia—namely, *G. frontata* (Wallace), found in North Queensland; also a new Stint—*Limonites damascensis* (Horsfield)—found in North-West Australia.

Mr. Hall is to be highly complimented on the thoroughness of this excellent and useful Key, which, it may be suggested, forms a capital foundation for the committee of the Australasian Ornithologists' Union for the "Check-List" of Australian birds (of which, by the way, Mr. Hall is the official "convener") to work upon. The "get-up" of the "Key" also reflects the greatest credit on the printers, Messrs. Walker, May and Co., for their clear and careful work. No work of reference is absolutely safe without a really first-class printer.

SPECIAL CATALOGUE NO. 1, AUSTRALIAN MUSEUM, SYDNEY.

After a cessation of over two years, this important work, "Nests and Eggs of Birds Found Breeding in Australia and Tasmania," has been continued under the authorship of the official Ornithologist, Mr. A. J. North, C.M.Z.S., by the publication of part 1 of vol. ii.

This part contains the families *Laniidæ*, *Certhiidæ*, *Sittidæ*, and part of the *Meliphagidæ*—fascinating groups, in which Mr. North furnishes specially full and interesting information from personal observation of those species found breeding in and around Sydney. The figures of eggs, which are life size, are reproduced by the heliotype process at the Government Printing Office, Sydney, from photographs taken under the direction of Mr. W. A. Gullick and the supervision of Mr. A. E. Dyer.

The only fault that can be found with this artistic and classical work is, as has been previously pointed out, its "sins of omission." For the work's sake these omissions are greatly to be regretted. (1) Reference to Mr. Robert Hall's "Key to the Birds of

Australia" (reviewed above) will illustrate some of the more striking oversights. On page 31 of the "Key" Mr. Hall has given "*Gymnorhina dorsalis* (Campbell)," reference "Proc. Roy. Soc. Vict., 1895, p. 206." Regarding this species Mr. North is silent, notwithstanding the *nest and eggs* having been also fully described. It may be also mentioned that Mr. North places a query (?) against Western Australia in his "Distribution" of the continental form of the White-backed Magpie. He is doubtless aware that a White-backed bird is found in the great Western territory. If not *leuconota*, why not give it its proper name, *dorsalis*, and do away with an unnecessary query? (2) Mr. North, while careful to give a reference from a foreign journal—*Novitates Zoologicae*, xii., p. 230 (1905)—for Dr. Hartert's *Gymnorhina tibicen longirostris*, quite overlooks his own home journal—*The Emu*, vol. iii., p. 97 (1903)—for a prior reference to Mr. A. W. Milligan's *G. longirostris*, which is quoted in Mr. Hall's "Key" on page 112. By the way, it is a most singular coincidence that the same specific name has been adopted independently by two authorities—an almost conclusive argument that the species, or sub-species at all events, is a good one. (3) Again taking "Key" v. "Catalogue," on page 116 of the former it is mentioned that *Pachycephala rufogularis* is amalgamated with *P. gutturalis*—Proc. Roy. Soc. Vict., 1900. But the "Catalogue" leaves the student unaware of the fact.

Coming to the main object of the "Catalogue," namely, "Nests and Eggs," there is another serious omission—*Sittella* (*Neositta*) *striata*, the nest and eggs of which have been described by Mr. D. Le Souëf, C.M.Z.S., &c. Moreover, the specimens were collected by Mr. R. Hislop, one of Mr. North's own correspondents. The references for Mr. Le Souëf's previous descriptions are found in *The Ibis*, p. 314 (1896) and a figure in *The Victorian Naturalist*, xiii., p. 63.

"GLIMPSES OF AUSTRALIAN BIRD LIFE."

Under this attractive title a booklet is now offered to the public containing 31 original photographs direct from nature of Victorian birds, by Messrs. A. H. E. Mattingley, R. Hall, A. H. Lord, and the late Mr. H. P. C. Ashworth, with a few words descriptive of each plate by Mr. Hall. It is excellently printed by Messrs. Walker, May and Co., and published by Mr. T. C. Lothian, Melbourne, at the modest sum of one shilling. The little book is a commendable attempt to bring under popular notice the bird-life of our fair land, and the unique camera work will stand equal with any nature photography in any other part of the world. As an Australian souvenir the booklet will supply an oft-expressed need among ornithologists.

[Owing to unavoidable circumstances several other reviews are held over till next issue.—EDS.]