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* Denotes a coloured plate.



Crimson Finch.
Neochmia phaëton
Immature male, adult female and adult male.

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THE CRIMSON FINCH (*NEOCHMIA PHAETON*)

This lovely little bird which, in its wild state, has a wide range throughout Northern Australia, has always been a great favourite of mine, for when once acclimatized it is a good liver and its beauty is equalled by few. When first imported it certainly needs considerable care as do all the Ornamental Finches of Australia and elsewhere. It is not often imported, and I imagine that although so widely distributed, it is nowhere found in nearly such abundance as, for instance, the Gouldian Finch, and apparently when first captured it is a more difficult bird to acclimatize than some of the others. There is no doubt that it is to a large extent insectivorous and probably suffers if fed on nothing but dry seed when first caught. At times it is apt to be decidedly quarrelsome. Many years ago I possessed a pair of these birds, which gave no trouble, but immense pleasure. They were kept in a large aviary, the outer part of which was planted with shrubs and grass and the inner part warmed during winter. Their companions were many and varied, but although they would occasionally appear somewhat aggressive, they never actually did any harm that I could detect. They made several nests, generally in round basket receptacles, and actually hatched their eggs on one or two occasions but did not succeed in rearing their young. Later, at the Zoological Gardens, we were more successful and a pair actually reared a brood of three in 1912. But this pair proved rather more quarrelsome than my original pair, and rendered the lives of a pair of Peale's Parrot Finches unbearable, so we had to move them to a compartment containing larger birds.

This was in the "Summer" aviary, a large open aviary thickly planted with shrubs and grass which was allowed to grow to its full perfection and to flower and form seed, and no doubt there was ample insect life amongst the vegetation. The "Summer" aviary has, alas! disappeared, and there is no aviary now at the Zoo where success in breeding these birds could be expected. My idea of a suitable aviary for these and many other species of birds consists of a good-sized covered portion, well lighted and heated in winter, communicating with a comparatively small, open, wired enclosure which, in its turn, communicates with a much larger wired enclosure which can be well planted and laid down with grass. I suggested this type to our President when he was about to build his aviary and he adopted my plan, and most of us know how successful the Foxwarren aviaries have been.

The old "Summer" aviary was excellent in its way, and we bred many birds in it, but it was only suitable for summer use and there was always a risk when birds were first put out, whereas if such an enclosure communicates with a smaller enclosure and then a warm house, the birds can always return to warmer conditions should the weather become cold in spring and early summer.

But to return to the Crimson Finch, which, by the way, is sometimes known by the less attractive, though equally descriptive, name of "Blood Finch", while in Australia it is sometimes given the name of "Pheasant Finch" on account of its possession of a comparatively long pointed tail. The nest is the usual domed structure common to most of the Grass Finch tribe, built of hay, leaves, and so forth, and lined with feathers and vegetable down. It may be built in a low bush, or in a covered box or basket, and providing the weather is favourable and plenty of insect food is available there should be no great difficulty in rearing the young in an outdoor aviary. This is one of the gems of the so-called Ornamental Finches, always keeping in "tight" plumage and always active and engaging, and is well worth securing when obtainable, but at the same time the fact that it can be quarrelsome and even dangerous towards the more feeble folk must not be lost sight of.

D. S-S.

THE BREEDING OF THE SENEGAL TOURACO (*TURACUS PERSA*)

By Captain H. S. Stokes

Five or six years of unsuccessful effort to breed these lovely birds had made me despair of ever achieving any success, and I ceased to be at all excited as clutch after clutch of eggs was laid, only to be eaten or to prove unfertile. Once, in September, 1926, the pair of birds I still have hatched a young one and brooded it for a month, only to leave it to die in the nest one cold night. This was really my own fault, because I went into the aviary at dusk after three weeks' absence abroad to greet the parents, both of whom have always been very tame. This excited and upset them, and the British Museum of Natural History got more satisfaction out of the poor little one's corpse than I did. In subsequent years the eggs always proved clear or were eaten by the parents.

This year, having parted with a great many of my soft-billed birds, I was able to give the Touracos a large aviary to themselves, with branches spaced well apart, where they had to fly or jump a good distance and so got plenty of exercise. This seemed to improve the health and vitality of the cock, who suffers sometimes from rheumatism in his foot.

Nesting baskets used for Pigeons were put up on the wall both indoors and outside. The first clutch of eggs laid indoors came to nothing as usual. The next clutch (only one egg) was laid outdoors, and in the middle of July my servant Albert, who was then looking after the birds, reported a young Touraco hatched three days previously. I was furious! "Why hadn't I been told before? Weren't they my birds? I must go and look at once." But no, I was firmly excluded from that aviary, and had to be content with quizzing and squinting and craning my neck, hoping for the best while imagining the worst.

The parents brooded the young very closely, the cock by day, the hen by night, as with Pigeons. It was never left for a moment, and the change over in the evening always took place at six o'clock. Touracos are expensive birds to feed, being mainly frugivorous. Others have told me they may be fed on potatoes and rice, but mine scorn such coarse fare and demand bananas, soaked currants and chopped

apples and grapes. They also condescend to eat a well-made rice pudding, which usually and surreptitiously finds its way to them from the luncheon table when I am at home. At this time we also gave them a little diluted Nestle's milk with sponge cake soaked in it. The increasingly rapid disappearance of this and the bananas were a pretty good guide to the progress of the young one. Both parents fed the young by regurgitation, and after a fortnight of suspense and excitement I was finally allowed into the aviary to watch this performance through a crack in the bottom of the basket.

The young bird left the nest when twenty-eight days old, a little, fluffy, black nigger. That day he climbed about among some low branches and we shut the family indoors for the night and watched till we were satisfied he was being properly brooded.

When five weeks old we saw him helping himself to food on the table. He was still in black down with a good deal of white on the wings. This white remained until he was nearly full-grown, when the wing feathers gradually changed to the lovely carmine colours peculiar to Touracos. Only at this stage did I dare mention his existence to anyone, for fear he should die to spite me. But he continued to thrive, and after I had been away for ten days I returned to find him three-quarters grown, with crest well developed, his breast and tail already purple, his wings still white.

This species has been bred in France by M. Delacour, but the breeding pair were unfortunately destroyed during the German advance in 1918. It has not been bred in England before, and as far as I know is only the second species with which success has been attained in this country.

As no coloured plate accompanies these notes a detailed description of the bird may be useful. The Senegal Touraco is a lovely creature, about 15 inches long; head, neck and breast all bright grass green. Back, wings, and tail glossy violet; quills, with the exception of the outer ones, bright crimson, with the edges and shafts black. It has a bare ocular patch with a band of white feathers in front and below the eye.

The sexes are alike and very difficult to distinguish, though perhaps the white patch in front of the eye is bigger in the male than in the

female. The British Museum catalogue gives the size of the female as 2 inches longer than the male, but I have always considered my male to be the longer and slimmer of the pair, the hen being shorter and more thick-set.

It inhabits west Africa, where it ranges from Senegambia to the Congo. It is a forest bird and largely frugivorous, though it also eats leaves. Its feet are semi-zygodactyle, which means that the outer toe is capable of being turned either backwards or forwards.

My hen Touraco laid another egg indoors during October, and again hatched, but the parents got bored with the young, when it was three weeks old, and it died one cold day at the beginning of December.

BIRD NOTES FROM CLÈRES

By J. Delacour

During the last year or more I have been so busy with different matters, and especially with the writing of the four big volumes on *The Birds of Indo-China*, that I find now that I have not sent to the Magazine my usual notes on my birds at Clères since 1929.

And yet so many species new to aviculture have been imported during recent years and a few of these have come to me! If we look back ten years or more, how many birds which we had only dreamed of seeing alive in our cages, aviaries, and parks, have now materialized! If our dear former president, the late Mr. H. Astley, whom we all miss so much, were still with us, what enthusiasm would he have shown at the importations of species, which, in his days, were quite beyond our avicultural hopes! . . . But I must keep only to the few birds which have come into my possession and I shall only speak of the novelties which arrived at Clères during the past two years, or which have been bred there.

From the point of view of breeding, the weather of the last two seasons has been especially bad, as it rarely ceased raining and was nearly always cold and dull. It is only with very great and special precautions that we managed to rear some young birds.

To start with the larger birds, we bred each season about ten

White Rheas and the same number of grey ones, always taking the chicks away from the male parent as soon as they were born, then putting them into a chicken house heated by a coal brooder. We hardly ever lose any in this way. I have one male and two female Darwin's Rheas, a very rare species in captivity. In 1930 one hen laid six eggs on which the cock sat for weeks in the rain; the eggs were clear, and the poor bird became so exhausted that he died shortly after. Fortunately the Duke of Bedford kindly replaced him. In 1931 one hen laid early in April a clutch of eight eggs, while the other one was laying many undersized eggs with no yolks. The new cock sat and eventually hatched two chicks, very pretty in their pearl-grey and black down, with shortish bill, neck, and legs. Unfortunately, by mistake, they were given wet green food with the result that one soon died; the other one somehow recovered but became rickety, and did not survive more than three months. I hope to be more successful next season.

My Pheasant collection is more or less complete. I have Argus, Rheinart's and four species of *Polyplectron*: Palawan, Bronze-tailed, Germain's and Ghigi's Grey; a pair of the latter gave, this season, eight clutches of two eggs, rearing six young. We also reared to full size one Rheinart, for the first time in Europe, another dying at ten weeks of a sudden attack of roup. The hen, which had been kept out of doors the whole winter, started laying on 3rd May, again on 22nd May and 12th June. Each time the second egg was laid from the perch at night and broken. Incubation lasts twenty-five days. The chicks have very showy white lines on the sides of the back and remind one much in their ways of the young of *Polyplectron*. I had a pair of Bulwer's Pheasants, but the cock died suddenly and I do not like the look of the hen. I find that the Fireback group do not do well at Clères and it is not worth while keeping them there, although I still possess pairs of the rare Borneo Crestless and of my own Fireback (*Lophura delacouri*). But I now intend having them kept for me in the sunny south of France.

Since 1928 I have kept a pair of the rare Lewis's Pheasants (*Gennaeus lewisi*), a very dark species of the silver group, discovered that same year on the mountains of Cambodia. In 1930 the hen laid four

unfertile eggs. In 1931 she laid five, three of which hatched and two young were reared. The chick looks like a small Silver Pheasant, but darker, with reddish head. An imported pair of Mikado Pheasants produced thirteen young ones in 1930, and the same number again in 1931. This fine species from Formosa does not seem to breed before two years old. I have just obtained another pair from Formosa which will enable me to renew the blood.

I also own some wild-caught, and therefore pure-blooded, Amherst Pheasants which I brought in 1930 from Yunnan. The wonderful Blue Crossoptilons sent to me in 1929 by Mr. Hampe being all males, hybrids with the brown species were reared last year and look almost like pure blue ones. One of these 1930 hybrid hens bred, in 1931, two young ones with a pure blue cock; these are indistinguishable from their father. In 1930 we reared some Soemmerring's Pheasants, a few of which escaped from their coop and have become established in the woods, where they are occasionally seen, together with some Bel's Kalij. Unfortunately, the breeding hen died last year and the cock, which was always quite harmless to her, would not accept a new hen, and did his best to kill her. We saved her life, but all hopes of breeding that species in 1931 vanished. During these two breeding seasons we also reared a fair number of the following species: Monaul, Brown Crossoptilon, Elliot's, Edward's, Imperial, Black-crested Kalij, Horsfield's, Versicolor, Amherst Pheasants; Red and Sonnerat's Junglefowl; Madagascar Guineafowl; Wild Turkeys; White and Black-shouldered Peafowl. Brush Turkeys, kept in pairs, fought and killed one another. The remaining birds, duly separated, built huge nests, but we never saw any chicks. Some Doves and Pigeons were bred: Diamond, Australian Crested, Bronze-winged, Jobi and Marquesa (*rubescens*), and, for the first time since I have kept birds, one Nicobar Pigeon. To my surprise, the young one remained nearly six weeks in the nest, till quite fully grown. The collection of Waterfowl is better than it ever was, although I must admit I have no more Pink-headed Ducks, Pigmy Geese, African Black Ducks, White-backed Ducks or Hottentot Teal, but among the larger Ducks and Geese our series is fairly good with several pairs of each of such rare species as Ashy-headed, Ruddy-headed, Blue-winged, Andean,

Orinoco, Cereopsis, Ross's Snow, Blue Snow, Lesser White-fronted, Maned, Hutchin's, Red-crested, and Emperor Geese; all the species of Shelldrakes, Common, Rajah, Australian, Paradise, and South African. During the past two years a few Ashy-headed, Ross's Snow, Blue Snow, Cereopsis, Magelan Geese, as well as hybrid Emperor × Blue Snow and Emperor × Ross's Snow were bred, with Black and Black-necked Swans. In 1931 a pair of South African Shelldrakes produced six young ones, and we reared one curious hybrid Rajah × Ruddy Shelldrake, resembling the Rajah in size and shape: dark reddish brown, with white head and neck. Also we had a few Madagascar White-eyes and Meller's Ducks.

Sea Ducks are doing very well on our clear running water. There are fifteen Eider and two Barrow's Golden-eyes, which feed greedily on grain and mash, with dried meat. One pair of Common Scoters have now lived for over three years and keep perfect condition, but they seem to thrive on natural food only, while a male Velvet Scoter, wounded at sea in August, has quite recovered and looks perfect; it has become fairly tame and feeds freely on grain and mash. These quaint Sea-ducks are a decidedly interesting addition to the Duck collection.

Many Cranes have laid eggs every year, but so far none have hatched anything. I am sorry to say that the old *Sarus* which had been free-flying for more than ten years met with its death last summer, as it struck a high-tension electric cable, some distance from the park.

There are in the park different full-winged Macaws and Amazons, as well as one White-headed Caique and two Palm Cockatoos.

Some Stanley Parrakeets, several species of Lovebirds and Budgerigars of all colours were reared, as well as different small birds of moderate interest.

My indoor flights have been mainly filled lately with the rare species of Waxbills and small Finches, while the greenhouse aviary, which looks better than ever, holds many Sugar and Sunbirds, together with, as special jewels, the lovely Forktail and Crimson-winged Babbler (*Henicurus leschenaulti* and *Garrulax milni*).

As I write, I am on my way to the Far East, and hope to return in April or May with interesting specimens.

SUCCESSFUL BREEDING OF QUEEN ALEXANDRA'S PARRAKEETS (*NORTHIPSITTA ALEXANDRÆ*)

By Alfred Ezra, O.B.E.

It has always been my great ambition to own some of these lovely Parrakeets. Their beautiful colouring and tameness make them the most delightful pets one can have. Last winter, I was offered a pair by my friend Mr. Harvey, of Adelaide, and I was overjoyed, and at once accepted the offer. In due course they arrived in absolutely show condition about the first week of May. Every feather was perfect and I have never seen birds look so well and healthy, proving the amount of care and trouble that had been taken over them on the voyage. As it was still cold I kept them in a cage in my bird-room till about the end of May, when I turned them out into one of my large Parrakeet aviaries. I gave them a nest-box about 6 feet long with bark inside and outside, and this was filled with peat moss that was damped, and over this I put in a few pieces of rotten wood. The birds were so tame that the moment I walked into the aviary they both came and settled on my shoulder, when I fed them with a few mealworms. They had hardly been out a week, when I saw that they were keenly interested in the nest, and the cock bird started feeding the hen. Very soon after, four eggs were found in the nest, and the hen bird was sitting well and the cock bird feeding her. All four eggs were hatched early in July. The birds being very tame, I was able to look into the nest-box as often as I liked, without disturbing them. The cock bird worked very hard, and kept on supplying the hen with food all day long. About the end of August one sturdy young bird left the nest, and in another few days they were all four out. I have never seen more healthy young birds, and so strong on the wing from the moment they left the nest. The hen fed the young birds all day long, and from the moment she and her young left the nest, the cock bird gave up feeding them, and always flew away when any of the young came up to him for food. While nesting and feeding young the Parrakeets were given the ordinary seeds, with a few mealworms every day, also a lot of groundsel, chickweed, lettuce,

apple and growing wheat and oats from the fields, sometimes a piece of sponge cake. By the end of September the young were almost as large as the parents, but rather paler in colour, and, of course, the tails were not quite so long. About the middle of October the four young birds looked exactly the same as the adult birds, and were then separated from the parents. In September when the young were fully reared, the hen started to lay again, but as it was too late in the season, I removed the nest-box from the aviary. As these birds are so rare and have not been bred in Europe for years, I am more than delighted with my luck and hope, now that I have such a good breeding pair, that they will keep up their reputation and breed every year. I have never had birds settle down so quickly, and rear young so soon after arrival, as this pair has done. These same birds had eggs several times in Adelaide when Mr. Harvey had them, but no young were ever reared, so I consider myself very lucky indeed. These birds have given me the greatest pleasure in the world, especially as I have been able to study them so closely right through the different stages of breeding.

CORRESPONDENCE

AN AVIARY IN AUCKLAND

Many visitors come to see my aviaries and usually the gardener conducts them round, as he has had sole charge of the birds the last three years. This year I have given away eighty Zebra Finches and fifty Blue Javas all bred in the aviary, and have a fresh supply to give away. They breed too freely. I allow all the birds to breed as they will, as in the three aviaries over 500 birds are at liberty. I will give you a list of the birds with which I have been successful in the rearing of young:—White Javas; Spice Finches; Grey and Green Singing Finches; Cut-throats; Gouldians; Waxbills; Diamond Sparrows; Silverbills; Mannikins; Saffron Finches; Angola Finches; Masked Finches; Bib Finches; Pekin Robins; Hyphantornis, Masked, Red-billed and Bishop Weavers; and Red-headed Lovebirds. All these breed fairly freely,

though we have, of course, various losses. Many more would increase, but I have difficulty in procuring female birds. I have been able to obtain various new birds since our local avicultural society was started, and as yet have not lost any of those recently acquired. Whilst in London I saw wonderful birds at the Regents Park Zoo, which I visited many times.

AMY B. CAMPBELL.

SICKNESS IN RARE PARRAKEETS

I had hoped that the all too liberal experience of several years had exhausted the supply of dangerous parrot diseases I was compelled to become acquainted with—particularly diseases of an unpreventable and incurable nature which attack acclimatized birds. However, a bad summer and a new place has added another to the list—catarrhal fever. One day in August I noticed that the Antipodes Island Parrakeet appeared to have a discharge from the eyes and nostrils. She may have been wrong some days before, but she was always a bad bird to have ill, as she appeared to favour Christian Science ideas and never departed from normal behaviour until half dead. Unlike any other Parrakeet I have had, she would in the early stages of illness, call, fly actively about, and stretch herself and continue to do so until in a state of collapse.

I hoped that the trouble was only a kind of cold in the head and put her in the warm hospital, spraying her head with glyco-thymoline and water. She went off her seed, but ate plenty of apple and drank plenty of egg and milk. Her bowels remained for a long time in fair order, and she hung on to life for nearly a fortnight, but not the slightest impression could we produce on the wretched microbe. The poor bird's eyes and nostrils simply poured, and before she died her eyelids were closed and swollen as in a bad case of eye disease. About a fortnight later I was alarmed and disgusted to notice that my best breeding hen King, a few aviaries away from the Norfolk Island's late abode, had started the discharge from one eye and nostril. She was in splendid bodily condition, very lively and very indignant at

being caged. We tried giving sulphate of quinine in her water, bathing the nostril with hydrogen peroxide and water and anointing it with eucalyptus and vaseline and sanitas and vaseline. We also tried a lotion and medicine recommended by a veterinary surgeon, with great experience of parrots, but nothing was the slightest real good. There was a little decrease in the discharge from the eye and nostril, but the disease retreated deeper into the throat and bronchial tubes and the King went the same way as the other victim. The cock with her, who was caged and quarantined, did not develop the disease. Fortunately there have been no more cases, and I am hoping that the healthy low temperature of late autumn and winter will bring the customary reduction in ailments. Incidentally the outbreak cost me more Kings than the hen herself. At the time of her illness my second hen was incubating a clutch of eggs, having already reared one young one. As the cock with her was moulting when she laid and had, in the past, proved a poor breeder, only fertilizing one egg in three clutches during three years, I decided to remove the eggs so as not to weaken the hen by long sitting and lower her vitality. When I broke the four eggs, all proved fertile !

TAVISTOCK.

CURIOUS BEHAVIOUR OF A HEN PHEASANT

We have a *very* tame hen Pheasant that wanders about the place, comes when called, sits in the hen-house and, in fact, does everything a Pheasant should not do, the point being that one cannot mistake this bird, or confuse her with another. She adds to her list of the unusual by regularly rearing eleven young every year, being an excellent mother. Now she has reared three broods. The first year, when the young were just colouring, I saw her and called her and she answered—when she had taken her brood, as the crow flies, about three-quarters of a mile due west of this house and the grounds in which she had sat and brought them up. So I naturally took it that she had wandered off and got lost and that would be the end of her. However, back she came about the first week in October, but without her brood. Last year she sat in nearly the same place, reared her brood and, when these were colouring, again took them away and I saw her with them

about a mile south of this place several times. She returned again in October minus the brood, and the same has happened in the past season.

The question arises as to whether it is a regular habit of Pheasants to take their broods off when old enough to look after themselves, and to leave them at some distance from where they were hatched. Is this Nature's way of preventing in-breeding ?

J. C. LAIDLAY.

HYBRID WAXBILLS

I have three mites of birds with tiny rings of orange round their eyes, their mother being an Orange-cheeked, and their father a St. Helena Waxbill. I have a true pair of Orange-cheeks and the odd cock St. Helena (a large sized one) who lost his mate last winter.

The nest was built in an enormous box outside, just off the ground, and there appeared to be two separate nests in this, full of feathers. Nesting had gone on for some time and I thought the birds were humbugging and as I wanted to bring them indoors as the nights were very cold, I felt inside to make sure but found nothing, so there must be still a third nest behind the other two ! The parents still go into the nest with food so there may be yet another youngster.

They have been reared on nothing but seed and ordinary soft food—no ants' eggs. My second pair of Orange-cheeks will not mate together but one has paired with a Grey Waxbill for the last two years, although this Grey is one of a pair.

K. DRAKE.

MYLOR, CORNWALL.

LETTERS FROM THE MEMBERS OF THE AVICULTURAL SOCIETY OF NEW ZEALAND

GOULDIAN FINCHES

My first success in breeding the above-mentioned Finches was in 1922, while in New Plymouth.

As my records of dates, etc., have been mislaid, I now come to my second success, particulars of which are as follows :—

Early in January, 1929, I purchased three pairs of these beautiful birds, which were immediately liberated into my aviary, comprising closed-in portion, 6 by 6 by 3 feet, lined with ti-tree, and nest-boxes placed high

up near roof. The outside flight was 4 ft. 6 in. by 4 ft. 6 in. by 3 feet, and covered with ½ in. netting on front and sides, with the top portion covered in. The outside portion was raised from the ground some 2 ft. 6 in. with wooden floor, covered with zinc, and was accessible for feeding and cleaning from the back portion.

Now, to return to the real subject—the birds soon settled down to their new quarters, and on the second day (12th January), one pair had commenced to build their nest (built with hay and dried grass): the nest-boxes were 6 by 6 by 6 inches, with small opening near top of the front portion, and were well filled with the nesting materials, so much so that it was almost impossible to see what was really happening. However, on the morning of 17th January, curiosity could hold out no longer, and on close examination of the nest I was able to discern one egg (white), and on each of the three following mornings a further egg was found, making four in all.

Having succeeded this far, I did not interfere with the nest again, but noted the date of commencement of incubation as 20th January; the birds sat consistently, and each morning when entering the aviary, I noticed the hen leave the nest, and the cock bird immediately flew to the nest-box, and would allow no one near. After a very anxious wait, imagine my delight, when on the morning of 2nd February, I heard a faint squeak, and a few mornings later it was evident the family had increased to at least three.

I did not take down the nest-box while the young were being reared, and it was on 23rd February the first bird left the nest, the plumage being a dusky green, without any of the bright marking of the adult birds. This was a fine healthy youngster, and seemed quite strong in flight—this bird was followed by three others, fine healthy youngsters, two days later (25th February), and all were fed by both adults, but were able to feed themselves in about ten days.

These notes, so far, have dealt with only one pair—the other two pairs settled down equally well, but as the nest-boxes were more difficult to get at, I did not deem it advisable to interfere, but am pleased to say that each nest turned out three healthy youngsters (3rd and 6th March respectively.).

The adult birds soon settled down again to nest building, but unfortunately mice marred the success of the second round, and on entering the aviary one morning I found the remains of eight youngsters, which episode closes part two.

Part three was equally as successful as part one, and from the three nests nine young were reared, leaving the nests towards the end of April. (Unfortunately record of dates has been lost).

Feeding.—These birds seemed quite easy to cater for—canary, white and spray millet, with plenty of grass in flower—the latter two items were greatly relished by the youngsters and they were indeed a pretty sight to watch feeding from the bunches of grass seeds hung in various parts of the aviary—fresh water was given each morning, and the birds, young and old, always enjoyed their bath.

All the birds thrived well until the middle of June, when they sickened and died off in about a week. This in my opinion was due to the weather at this time being extremely wet and foggy. After commencing the season so well, a really sad ending—nevertheless, I hope these few notes will encourage others (when birds are available) to try *their* luck.

E. V. Clay.

6 Marsden Avenue,
Mount Eden.

RED-RUMP PARRAKEETS

These birds were in my possession for a year or more before there was any sign of breeding.

They made a nest in a covered-in prune box, with the bottom rounded with plaster of paris into the shape of a nest, an opening about 3 inches wide being left at one end.

The hen laid three eggs. Incubation took twenty-three days. The birds succeeded in rearing one only, which remained in the nest until the hen Parrakeet was thinking of laying again.

The young one left the nest on the 20th November, 1930. Its sex, a cock, was denoted by the colour of the plumage, as soon as it came into the open.

The birds were fed upon the usual mixture for Parrakeets and Lovebirds and in addition a large quantity of different kinds of seeding grasses, cocksfoot, being one of the principal foods. I am confident that a plentiful supply of natural seeds is essential to be successful.

It is also necessary to take the young ones away as soon as they are independent, otherwise the cock will kill the young when the hen goes to nest a second time.

A. E. HENLEY.

66 Victoria Street, W.,
Auckland.

COCKATIELS

In August, one pair, the cock having been with me some months, took a large hollow punga stem for their nest.

This punga was end upwards on a shelf under a portion of the aviary glassed over.

Three eggs were laid, and two young hatched after twenty-three days' incubation. The young stayed in the nest until they were able to fly and when they left the nest they were practically independent.

The young appear exactly the same as the hen and in spite of books saying that the extra yellow about the head denotes a cock bird, I failed to notice any difference. The young birds are most unusual in appearance when in the pin-feather stage, for they seem to get their feathers all at once.

The first young one left the nest on the 21st October, 1930.

The food used was canary, millet, a great deal of hemp, occasionally sunflower, a little green food and plenty of sow thistle heads.

A. E. HENLEY.

CORDON BLEUS

It gives one some satisfaction to achieve a difficult object after many trials and disappointments.

For two and a half years I have endeavoured to breed this difficult little bird and have now succeeded in rearing four young ones.

They were hatched after fourteen days' incubation in a nest built in some ti-tree from fine grass and feathers. It was dome-shaped with a small entrance at the side.

The young left the nest when they were sixteen days old. They were light brown on the back, light blue on the chest, the red patches of the cock bird being indistinguishable.

Immediately the young had flown, the hen went to nest again, leaving the cock bird to look after the family. This he did by filling his crop with food and feeding two or three at a time, before obtaining more.

I first observed the young ones on the 14th May, 1931. I attribute my success to feeding large quantities of very small gentles together with egg and biscuit, cake, fruit, and the usual seeds. One food that seems essential is the gentles.

A. E. HENLEY.

66 Victoria Street,
Auckland.

PARROT FINCHES

I was most fortunate, some time ago, in securing a true pair of Parrot Finches.

They built in a ti-tree bush, a small cup-shaped nest with, at the side, a little tunnel through which the birds entered.

Three eggs were laid and two young hatched, but only one left the nest on the 18th May, 1931. The young one grew rapidly and is now bigger than its parents. It is green all over except for a little red patch on the rump and a suspicion of pink on the head. On each side of the beak where the skin joins at the base are two vivid light blue spots. As the bird became older these spots disappeared and I can only conclude that they are of some use to the parents when feeding the young in the dark interior of the nest.

The birds were fed upon hulled oats, plenty of lettuce, the usual range of seeds for small Finches, and egg and biscuit mixed with Cod Liver Oil Cage Bird Food.

The young one is now as quick and active as its parents.

A. E. HENLEY.

POPE CARDINALS

In June, 1930, I was fortunate in acquiring three Pope Cardinals but it was rather difficult to determine their sexes.

They were safely acclimatized and put out into the aviary in the spring, 1930. During September, two of the Cardinals were observed placing straws in different positions, then taking them down again and transferring them to other places. A little heavier nesting material, much of it composed of fine twigs of ti-tree was put in their enclosure. The birds immediately seized upon this and built a little platform in some ti-tree bushes in an exposed position where sun and rain fell upon the nest. The nest was untidy, not firmly knitted together and the sides were not high, more like the untidy nest of a Dove.

Two green eggs were laid, spotted with faint brown. After about eighteen days they hatched, but in a few days' time, only one bird remained. This

grew rapidly and in about fourteen days, left the nest. The quickness with which this bird feathered and left the nest is remarkable.

It stayed in the vicinity of the nest being fed by the parents. It grew rapidly but the head was coloured a dark tan in contrast to the red of the parents. The rest of the colouring was similar to that of the adult birds. The young one left the nest on 25th December, 1930, and is now almost full size, although the head is still dark tan.

The parent birds were fed the usual mixture of seeds and in addition green grass seeds and an ample supply of gentles and egg and biscuit meal. Without the egg and biscuit and gentles, I think it is doubtful if these birds could be reared successfully.

A. E. HENLEY.

MASKED LOVEBIRDS

Several pairs of these birds were imported but unfortunately owing to disasters on the voyage, only two pairs arrived.

According to the information in books, they are supposed to settle down and breed at once but this was not my experience. It was several months after they were flying in the open before there was any sign whatever that they were going to nest.

They chose a piece of punga log which had been hollowed out at one end to about 6 inches in diameter and then boarded up. The opening to this enclosure was the centre of the punga stem cleared of the soft fibre found in the core.

The nest was made of short pieces of ti-tree bark which had been pulled into shreds by myself. It is not unusual for the birds to bite this bark from end to end to make it soft and before taking it up to the nest, to dip it into the water vessel. They will use other things as well for nesting material, stalks of grass, lengths of dock stem, pieces of old millet sprays and such like. The majority of Lovebirds require moisture in the nest and the punga stem was therefore hung from the roof of the aviary outside, exposed to the weather. The ideal Lovebird nest is a decomposed damp bit of material with at the top a thin layer of dry soft grass stems, etc. The grass stems are not interwoven, similar to a Weaver's nest or even as a Zebra Finch's nest, but are chewed up into short lengths and bedded down on to the coarser material underneath by the weight of the bird's body.

The usual number of eggs is four, they being clear white oval eggs, the same type as usually laid by birds of the Parrakeet or Parrot species. It is not possible to give the exact time of incubation but it is somewhere about eighteen to twenty-one days. The young remained in the nest for about four weeks, and when they finally emerged on 30th June, 1930, they were perfect in feathering and about two-thirds the size of their parents, and although the breast of the adult is pure yellow that of the young has a tinge of red in the yellow which is not replaced when the birds moult. The beak is red in colour, like that of the parent, although slightly lighter in shade, and has a dark brown, almost black, tip. When the bird is two or three months old, this black usually disappears.

The birds were fed upon best grade white oats, a mixture of canary seed, white millet, brown millet, and an occasional millet spray. The principal food, however, is white oats, fed, of course, with the husk on, just as they are bought. The birds used a great quantity of this when rearing the nest of four.

The young birds were observed by several members of the Society who commented on the fact that their plumage was even more perfect than that of the parents, not a feather being out of place, and the plumage was as tight as that of a Java Sparrow.

G. Rowland Hutchinson.

BLACK-CHEEKED LOVEBIRDS

Two hens and one cock were received from England but the cock bird on arrival, was in poor condition, and died after six months, never recovering from the effects of the voyage.

A further cock bird was imported, but on the voyage had a dispute with a hen Peach-faced Lovebird and the lady scalped him. Fortunately the injury was only skin deep, and has not had any effect other than preventing any further feathers growing on this patch about ½ in. in diameter.

After several months he settled down and took to housekeeping with one of the hens in a long hollow puriri log. The birds carted a great mass of nesting material into this, practically filling the log with the exception of a hollow at the far end and a tunnel from the hollow to the entrance. All sorts of materials such as bark, coarse grass stems, millet sprays, and other odds and ends usually found on the floor of an outside aviary were used. The shape of the tunnel made to the actual nest through the log is peculiar. From the entrance of the log to within a few inches of the nest itself, the tunnel is fairly wide but on what is really the edge of the nest, material is piled almost to the roof and a very small opening is made through which the bird pushes its way from the tunnel to the nest. Quite likely it is a precaution against the entrance of birds of prey, larger than the Lovebird itself.

Four eggs, the usual number, were laid, they being oval and white. The Black-cheeked hen is an excellent mother, her eggs and chicks being her one object in life. She sits remarkably closely, more so than the Masked variety. The log was hung outside so that rain and weather would beat on it, for Black-cheeks require a good deal of moisture in the lower parts of the nest as otherwise the chicks have difficulty in breaking the membrane inside the shell.

Three chicks eventually left the nest, but they were not completely feathered, it being a couple of weeks after flying in the open before the feathers on the rump were completely grown. The young Black-cheeks agree perfectly with their parents, even after the hen has gone to nest again. The young flew 10th August, 1930.

The birds were fed on Lovebird mixture with an extra quantity of white millet and hulled oats with an occasional millet spray. They appreciate a supply of green grass seeds of all descriptions and are particularly keen on rape seed in the pod before it ripens. The young left the nest and are thriving.

G. Rowland Hutchinson.

FISCHER'S LOVEBIRDS

Misfortune seems to be the lot of this species, the birds not lasting any length of time after arrival or else accidents happen with them. One bird got out and lived at liberty for a couple of months but would never visit a trap. Eventually two birds remained, and were put in an aviary by themselves, after spending the whole of the winter indoors. Fischer's Lovebirds seem to be more susceptible to weather conditions than other species.

Strips of ti-tree bark, grass stems and wood wool, were provided. The wood wool and ti-tree bark was used, the majority of the grass stems being ignored. The birds apparently took a liking to the strips of wood wool, for they commenced to tear off chips from the door of their aviary and when they had reduced that to about half its original thickness, they transferred their attempts at carpentering to a wooden ledge of their shelter house reducing what originally was a piece of wood 1½ inches in height and ½ in. thick to a piece approximately ¾ in. high. This piece must have satisfied her ladyship for she immediately laid six eggs. Unfortunately all were clear with the exception of one which ultimately developed into a very handsome bird and left the nest on 9th January, 1931.

The nest was constructed in an hollow puriri log and the tunnel is a peculiar shape, being of a larger diameter at the entrance and only large enough for the bird to squeeze through in the front of the nest, with the added peculiarity that, unlike many other Lovebirds, the entrance was to the side, not on top of the nest. Why the birds should have a side entrance is difficult to say.

The birds were fed on Lovebird mixture with an additional amount of brown millet, hulled oats, and white millet when feeding the young. They were not keen on plain canary seed but relished an occasional millet spray. They practically killed the root of a silver beet growing in their aviary in feeding the one young bird.

The young are not so highly coloured as the adults, but otherwise similar, the vivid red on the head appearing after the first moult.

G. ROWLAND HUTCHINSON.

FOREIGN HYBRIDS

ZEBRA FINCH × GOLDFINCH HYBRID

I purchased a pair of Zebra Finches about the middle of last breeding season and turned them into an outdoor aviary. When they had been in the aviary about a week I noticed that one of the Zebra Finches was very friendly with a Goldfinch hen. In about three days they showed signs of nesting by carrying hay to a corner of the building. I then put some cow hair and kapok in the aviary. When they had finished building they rested three days, on the third day the Goldfinch went to nest and laid one egg and laid an egg every other day until she had laid four eggs she then sat on the eggs and sat until about two days of hatching, and then the Zebra Finch sat on the eggs. Then the earthquake upset everything. I found chicks dead in the shells.

The Zebra Finch × Greenfinch habits were much the same as the Zebra Finch × Goldfinch except that the nest was slightly larger.

A. R. GOUDIE.

Westshore,
Napier.

CRIMSON OR BLOOD FINCHES

EXTRACTS FROM LETTERS RECEIVED FROM AUSTRALIA

"I think the best plan to follow *re* the Blood Finches is to leave them to themselves making the aviary as private as possible. They like a small nest-box such as an old boot or jam tin or a hollow log. White ants are the best live food but above all, do not look at them or at their nest. If you watch some birds when nesting they will leave it and that may be the trouble that they are not easy to breed. Tell the members to put their eggs under Zebras. I bred a few in town and they built in a jam tin hanging on the wall. Hungarian millet seed is the best for them."

"I have your letter, reference Blood Finches. You will find it fairly difficult to get them to breed the first time but once they are started they will be alright. I would suggest that you pair them off separately and keep the room at a warmer degree as 65° seems very low. They breed here in January, February, and March, and that is in our wet season when the humidity is very high and probably if you could arrange to have your breeding cage a little humid it might help matters. They are very fond of ants and consequently in my cages, which are on ground level, there are always plenty of ants travelling backwards and forwards. Mealworms should give the same results."



Blue-winged Grass Parrakeet
Neonanodes chrysostomus

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THE BLUE-WINGED GRASS PARRAKEET

By EDWARD J. BOOSEY

The Blue-winged Grass Parrakeet (*Neonanodes chrysostomus*) is a comparatively soberly-coloured, and perhaps partly for that reason, the least rare representative of a rapidly-dwindling family.

It inhabits South Australia, and is indigenous to Victoria and New South Wales, visiting Tasmania for the summer and returning to the mainland in the autumn, after the breeding season is over.

The coloured plate renders a description of the bird unnecessary.

That his beauty is not more fully appreciated, is in all probability, chiefly due to the fact that the cock Blue-wing, when in repose, usually sits with his chief glory—the wonderful deep sapphire blue wing-patches—almost concealed beneath the overlapping greenish-yellow breast feathers. Thoroughly to appreciate his beauty, therefore, he must be seen in flight, or when fully alert.

Blue-wings are by no means difficult birds to cater for and should be fed on a mixture of canary and millet, with a little oats and a very small quantity of hemp. Both the latter can safely be increased when the birds have young ones to feed, and at this period they also appreciate a dish of their seed mixture previously soaked in water, until it is just starting to sprout.

Millet spray, though probably not absolutely essential, is greatly relished by all the Grass Parrakeets.

Blue-wings are, if anything, a trifle less keen on flowering grass than are their near relations though, like most Parrakeets, they eat large quantities of it at the approach of, and during, the breeding season. It is as well, however, to keep them continually supplied with as much of it as they will eat, and in winter the small *Poa Annua* grass, which grows as a weed in gardens and flowers all the year round, is very wholesome and an excellent standby.

Moisture in the nest is not a necessity for young Blue-wings, but care should be taken that the box is not too deep as, like all Grass Parrakeets, they are but poor climbers.

They can be kept in perfect health and bred in comparatively small aviaries, which is an advantage from many people's point of view; also they are quite harmless to other species and do not damage growing shrubs. If, however, they are kept in a mixed collection with a number of small birds, it is absolutely necessary to keep their quarters scrupulously clean, especially the perches as, like all their family, they are rather liable to contract eye disease.

Though the writer has never kept Blue-wings in anything but a separate aviary to themselves he would imagine that in a mixed collection they would be very easily bullied by larger birds and, judging by the extraordinarily little strength they have in their beaks—they cannot bite wood and, when handled, only nibble feebly at one's fingers—they would certainly be quite defenceless.

They are active in the early morning, sit quietly most of the day, and are extremely lively again just before dusk. In fact, in a collection of Parrakeets, the members of the Grass Parrakeet family will usually be found to be flying happily about, particularly on fine summer evenings, long after all the rest of the collection have gone to roost.

Young Blue-winged Grass Parrakeets were successfully reared here, at the Keston Foreign Bird Farm, during the past season.

BLACK-HEADED SIBIAS AT LIBERTY

By A. Sherriff

I thought it might be of interest to record some further notes on the breeding of my Black-headed Sibias.

The original birds which first reared young in 1925 have surpassed themselves in 1931 in spite of the bad weather. Their aviary is situate in a garden which is within a short distance of bus and tram routes, but which has the merit of being fairly open for a London garden.

In the middle of April the usual opening was made in the wire of this aviary. The birds had already gone to nest and the hen was sitting on two eggs. For some reason, known only to the birds, the nest was suddenly deserted ; it was decided, however, to allow them to continue their freedom. Shortly afterwards a neighbour informed me that some strange birds, they presumed belonged to me, were busy building a nest in a fir-tree close to their sitting room window. They told me they would watch the birds and do their best to prevent any marauders, such as cats or squirrels, interfering with them. The nest was completed and three eggs were laid—everything appeared to be going on well. Suddenly, however, the hen bird failed to appear for her food and was not seen for two or three days. The nest had been constructed close to a fence and I feared that a cat had put an end to all dreams of young Sibias. The nest had been tipped up and three broken eggs were found at the foot of the tree. The hen, however, was still alive and was seen once again carrying nesting material. This failure was due probably to grey squirrels, of which there are many about and which some people will feed although they would be terrified at the thought of having anything to do with their first cousins the rats.

The position of the third nest was in a monkey-tree in a near-by garden. Everything here appeared to progress satisfactorily. After about three weeks both birds were busy taking mealworms away back to the nest—so far, so good. Suddenly, they ceased to be interested in mealworms except for their own consumption. What had happened ? Three young fledgelings were found at the foot of the tree, dead. A Blackbird had a nest only about 2 feet away from the Sibias and it

would appear that the latter, inclined at all times to be quarrelsome with other birds when nesting, took exception to the proximity of the Blackbirds' nest. What took place must be left to the imagination, but the result was certainly unfavourable to the Sibias.

Considerable time had now been wasted, three nests had been built, eight eggs laid, and still no young birds to show: the time about the middle of June. However, this pair of birds did not intend to be demoralized by previous failures, and, very shortly after, the hen again commenced building in a large pear-tree. This time all was well. In about five weeks two young Sibias were flying about the garden followed and being fed by their parents.

After the young had been flying for about three weeks the hen again became conspicuous by her absence. Another nest? What was going to happen to the young birds now flying. If left free would the parents drive them away? Eventually it was decided if possible to catch up the two young birds, and this was done with great ease as the parents had carefully shown them the way into the aviary.

It was now certain that a further nest had been built. The hen was seen only once when the gardener fed them at the usual time, about 9 a.m. I have not been able to satisfy myself whether the previous nest was used again or not, but it was certain that the hen was incubating. Once more mealworms were being carried, and by the end of August three young Sibias were enjoying themselves in weather which at that time was not too bad. It did not seem possible that any further nesting could take place and I intended to catch up the three young birds as opportunity afforded. This was done without the slightest trouble and the cock continued to feed the young birds through the wire of the aviary in which they were enclosed.

But where was the hen? She had actually gone to nest again. It was now the third week in September and the possibility of early frosts could not be ignored, but bad as the weather has been with regard to sunshine there had as yet been little real cold. About the 10th October two more youngsters were introduced to their paternal home and this week, the last in October, they have been caught up and placed with their relations. The parent birds are in a dilapidated state due to their excessive zeal for nesting. They appear, however, to be

quite healthy and are now being given a delicacy of which they and lots of other insectivorous birds thoroughly approve, viz. warm condensed milk and honey. I propose to allow them their liberty throughout the winter. Since the last young were caught up they have kept continually in the aviary. Last year they wintered without artificial heat in an aviary that had a closed shelter to it. They were not alone, for two young were reared in 1930 and one bird was purchased. They are unquestionably hardy and according to Whistler's handbook of *Birds of India* keep quite close to the snow line.

Of all the insectivorous birds that I have ever kept I have found Black-headed Sibias the most interesting and entertaining. In no way timid, quick as lightning and always on the look out for mealworms. In fact, when feeding the young it was difficult to walk down the garden without one of the birds flying within an inch of one's nose and plainly saying " I want mealworms ". At odd moments the cock would play games with his children through the wire. They are very affectionate towards one another as a rule, but in one case I have had to separate by hand the present cock from one of his sons, otherwise death would have resulted to one or the other. The last two young delighted, however, in chasing Sparrows, and on one occasion I was astonished and worried to see three young Sibias on a tree in the Finchley Road, but they were back for lunch.

There are now twelve Sibias in the aviary. For the purpose of getting new blood I am anxious to exchange one or two, and, should anyone wish to try to breed these birds, will be only too pleased to lend one or two of this year's young. Once accustomed to an aviary they can safely be allowed their freedom.

This year the hen has laid fifteen eggs and reared seven young. The cock has been in the aviary for eight years and the hen for six.

[Writing on 23rd December, Mr. Sherriff says " The parent birds are still at liberty and up to recently have slept in the garden, but since the present advent of cold weather have spent the night in the shelter. The young birds have, up to now, slept out in the aviary flight."—Ed.]

FURTHER NOTES FOR 1931

By The Marquess of Tavistock

Few aviculturists, I imagine, will look back on the results of the past summer with much satisfaction. In my own collection it has been chiefly conspicuous for disappointments. Clear eggs from nearly all the rarer birds and an amount of rickets among nestlings as unexpected as it was unwelcome; the appearance of a new and fatal disease and quite abnormal losses from straying among liberty birds; in fact, mental and physical demoralization all round! Even the unusual geniality of November did more harm than good by keeping the microbes of enteritis and pneumonia rampant beyond their proper time.

The nesting attempts of some of the rarer birds have already been recorded, so I will confine this article to an account of the doings of the rest of the collection.

A Crimson-wing paired to the last of my Sula Island King × Crimson-wing hybrids incubated three clutches of eggs, but all proved infertile. The hybrid, now in adult plumage, is the finest specimen I have had of this most beautiful cross, of which a rather poorly-coloured example is to be seen at the Zoological Gardens.

A very old Lutino Ringneck spent some weeks in her nest but did not lay; I fancy her breeding days are done.

An Amboina King paired to a cock Salwatty—exactly like her but a much smaller bird—did not go to nest, but as she had only arrived late the previous autumn she had hardly time to settle down. I find the beautiful Asiatic Kings the hardiest Parrakeets in my collection and less susceptible to cold or disease than any other birds.

My cock Many-colour died of septicæmia just when he was coming into breeding condition. I put the hen with a hybrid Mealy Rosella × Pennant, but she was rather afraid of him, and I am doubtful if they actually paired. Anyhow, her eggs were infertile.

The Lutino Amazon raised my hopes by coming into breeding condition and inspecting a nest, but the accursed Koko, her green mate, a demon with human beings, repeated his foolish trick of the previous season, and dropped into an unnecessarily premature moult.

The Roseate Cockatoos were another disappointment. The hen apparently settled down in the barrel in which she reared two families with a Common Grey cock, but at the last moment she deserted it, and laid her egg from the perch in the aviary. shelter. She then arranged splinters of wood round the broken fragments as a sort of funeral wreath, and proceeded to fall into moult, her white husband soon following.

A pair of Hooded Parrakeets were provided with an artificial termite mound. They followed their usual annoying habit of moulting all summer and beginning to take a serious interest in the nest at the end of September, three days before it had to be removed. At the end of December the hen laid five eggs on the floor of the shelter but none hatched, though two were fertile.

My old hen Sula Island King I mated with a cock Princess of Wales, but just when they were getting friendly I had to remove him as he was wanted for a hen of his own species. Later I put a Princess of Wales × Crimson-wing hybrid with her, but he did not like her and her eggs were infertile.

My breeding cock Malabar having died the previous winter, I was reduced to using another who has the tiresome habit, at the beginning of each breeding season, of biting off all his flight feathers until he is unable to fly an inch. He repeated his absurd trick at the exact moment when he was required to take up domestic duties. The hen sat patiently on three eggs, but directly she discovered that no family would reward her labours, she came out and fell upon her scarecrow partner, biting him seriously in the mouth and beak. I could hardly blame her!

I have three pairs of Lutino-bred Ringnecks which annually provide material for hope ending in disappointment. A pair which hitherto have never got further than hatching one chick reared two quite nice young—a Lutino and a Green. The Green injured itself fatally soon after leaving the nest, and a few days later the Lutino was found completely paralyzed in both legs. It fed well on soft food, however, and slowly began to regain the use of its feet until there seemed good prospects of a complete cure. Unfortunately, these did not materialize; one leg got quite sound but the other went back and the foot became

useless, so I was obliged to give the bird away as a pet. It is, I suppose, the first Lutino fully reared in confinement, so it is all the more sad it should be a cripple. It is a lovely colour, with red eyes.

The second pair of Lutino-breds had only one egg, which was infertile. The difficulty of breeding Lutinos is augmented by the fact that my stock of Lutino-bred Greens seem all to be firm believers in birth-control, never laying more than two eggs and never having more than one nest in a season. The third pair, which have already produced two Lutinos which died after leaving the nest, had two Green young; one died when half grown. The other was reared, but is not a perfect flyer.

A lutinistic cock Plumhead (a pure Lutino for a time at an earlier period in his career, but pied in early youth and at the present time) mated to a yellowish-green hen had four normally coloured young. In spite of the fact that the old birds ate enormous quantities of sprouting seed and seed dripping in cod liver oil, three of the young birds were very rickety. One died soon after leaving the nest. Two improved greatly and were able to fly for some weeks, but the advent of cold weather in November killed them as they were stupid about using their heated shelter. The survivor is a fair specimen. I find that young Plumheads have a fairly heavy body moult their first autumn in the course of which they acquire quite grey heads.

A Lutino Alexandrine Parrakeet sat in her nest but did not lay. She is unfortunately a cripple, with frost-bitten toes and a damaged wing.

The Princess of Wales Parrakeets had infertile eggs. The rather old imported cock I first tried with the hen would not pair, though very attentive in every other way. The second cock, bred by Mr. Astley, paired but would never feed her. A rather curious incident took place when the hen was about to lay, illustrating the strong desire that cock Polyteline Parrakeets display to oblige their wives to attend properly to home duties, a desire which has nothing whatever to do with sexual instinct. The hen Princess of Wales, though obviously on the point of laying, was not over taken with her nest and would come off at any and every excuse. I had noticed for some days that her reluctance to settle down,

had been getting on her husband's nerves and he chattered irritably each time she flew out. The crisis arrived on the afternoon before the night on which the first egg was due to appear. On some trivial excuse the hen came off yet again. It was too much for the cock's patience, and he fairly lost his temper and attacked his partner furiously, driving her about until she was quite exhausted and, hitting the wire heavily, fell to the ground. I shut him into the aviary shelter and very nearly removed him altogether, but trying them together half an hour later I found that his anger had cooled down. She, however, was too bruised and upset to go back to the nest, and during the course of the night laid her egg from the perch and broke it. Two days later, however, she took to the nest properly and although the cock addressed a few unpleasant remarks to her if, in his opinion, she came off too frequently to feed, there was no more real trouble.

A pair of Stanleys came more or less into breeding condition, but never really settled down. Later I tried the cock at liberty as he was rather a poor specimen, but though he returned a few times to his aviary, he soon strayed—a most unusual occurrence for a mated Broadtail.

A pair of Barnards did nothing at all, though in excellent health. I rather think that the hen is sterile from age. The *Barnardius crommelinæ* whose sex was for a long time uncertain, finally decided to be a cock, but was unsuccessful in inducing his partner to do more than explore her log.

My old breeding pair of Crimson-wings reared four fair young. One strayed and was lost the first day it was given its liberty. The others are still about. The adult cock, however, was lost in the strangest and most inexplicable way. He was one of my oldest trained liberty birds and so intelligent that I could get him in or out of an aviary at almost any time I chose. For many seasons at Warblington, and last winter here, he had enjoyed his liberty when not engaged in domestic duties and being, for a Crimson-wing, an unusually devoted husband, he never left his mate's aviary for more than a few minutes. This autumn, as usual, I turned him loose one calm day and he flew quietly off in company with his last year's young one. I never saw or heard of him again! I can only assume that the young hen, whose

knowledge of the country was greater than his own, took him for a fly round and got separated from him and he failed to find his way home. A second pair of Crimson-wings had very rickety young, which eventually died.

A hen King, paired to a cock that had been kept too long in close confinement to be fertile, laid and incubated three clutches of eggs, and then fell a victim to catarrhal fever. The cock also died of pneumonia. Another pair of Kings that had previously failed to produce fertile eggs reared one fine strong young one, now a trained liberty bird with its father. As it has already got a red beak it is presumably a male. The hen laid again and her eggs were fertile, but alarmed at the fate of the other I did not allow her to risk her health by too prolonged family duties.

Both my Long-tailed Parrakeets have been lost. One died in April. I had reduced the heating of the aviary shelter and it did not occur to my aviary attendant to increase it again when a very cold spell set in.

The other cock paired with a Malabar Parrakeet and fed her but he died of pneumonia in early June. I fear, therefore, that I must return to my original opinion that this handsome species is unsuited to aviculture in temperate climates and is not worth importing.

A pair of Pennants, usually parents of exceptionally fine and fertile young, only produced rickety ones which did not long survive.

A pair of Browns lost their young when a few days old although the cock has bred good stock in previous seasons.

Yellow-rumps did fairly well, rearing five young, but for the first time had no second nest.

Rosellas had extremely rickety young, but the hen is a poor specimen and has only once reared a good youngster.

Among three pairs of Barrabands, one hen had gone on strike for about nine years because the nest I gave her did not appeal to her imagination. She came into breeding condition regularly, but would not lay. This year I decorated her home with bark inside and out, which so appealed to her æsthetic sense that she laid again and reared three fine youngsters. One unfortunately escaped when I was entering the aviary, but after staying about for a day flew clean away and was

lost—again an unprecedented misfortune, for of the dozens of young Barrabands I have trained for liberty not one has ever deserted his parents when first released.

A second pair got no further than looking at the nest. The cock, like so many aviary-bred Barrabands, would do everything but mate. The cock of the third pair had rather a peculiar history. He was brought up by the Sula Island King and her Crimson-wing mate together with their own hybrid offspring, his own parents having died while he was still an egg! His unusual upbringing has affected his whole character and conversation. He talks Crimson-wing and even now greatly prefers the society of Crimson-wings, being, for a Barraband, an unusually inattentive husband to his Barraband mate, who was my choice rather than his. Nevertheless, when he was with her in the summer he did his duty by his home though the only eggs in his nest that hatched were two of a Rock Peplar. One of the young Rock Peplars died in the nest; the other was reared and is a trained liberty bird, but is not a good specimen. The mother of this youngster is a most idiotic bird and a great source of trouble to her mate and myself. Every year she ignores his entreaties and curses and refuses to look at the endless variety of nests I submit for her approval. What she really likes doing is laying her five eggs one by one from the perch in the shelter. This year I shut her out of the shelter and she laid her eggs from the perch in a corner of the flight, breaking two. Finally, by way of adding insult to injury, she proceeded, for three weeks, to incubate, on the aforesaid perch, the abstract idea of the five eggs, two of which were in fragments and the other three under the Barraband!

A pair of Redrumps at liberty reared four young cocks. They then flew to the other side of Kent and reared two more, being caught in late autumn by a person who sold them to a local fancier who showed no inclination to part with them. This, again, is quite unprecedented conduct in liberty Redrumps, which, as long as they are paired, are most faithful stayers.

The young cocks, while in immature plumage, were so uncivil to the hens I turned out for them that the latter did not stay; but as soon as they assumed adult plumage they strayed in search of mates as all unpaired Redrumps do!

Some common Ringnecks intended as foster parents reared three young of their own, which were given away as pets.

The big hen Banksian, formerly the property of Mrs. Anningson, laid twice and sat well but her eggs were infertile.

Bib Finches and Zebra Finches at liberty reared a few young as probably did the Orange Weavers. The latter stayed well and made a pretty show, one especially obliging cock taking up his residence in the vegetable garden and allowing parties of visitors to stand and admire him from a distance of a few yards. My small liberty birds did so exceedingly badly last winter when I began to keep them partly shut in that this season I decided to let them take their chance, merely feeding them into the heated shelter and furnishing it cosily with branches and boxes. To my surprise quite a number have voluntarily left their outside roosting quarters and taken advantage of the accommodation provided for them inside the shelter.

SOFTBILLS

By A. Sherriff

I was most interested in the Marquess of Tavistock's article on Softbills which appeared in the October number, and at the risk of bringing a "ton of bricks" on my head I am going to state that Softbills are the most enjoyable and interesting birds in aviculture.

A few Parrots and many Seedeaters have inhabited the aviaries during the past ten years together with Softbills, but somehow Parrots and Seedeaters always seemed to decrease while the numbers of insectivorous birds increased. Naturally I am referring to conditions in which only a limited number of birds can be adequately housed. Of course, if money and space are of no consequence any and every bird would be welcome. Let me admit that my experience of Parrots is too limited for them to be included in this article.

Seedeaters never appear to become "personal" in a way in which a Softbill will. By "personal" I mean that one ordinarily does not expect a Seedeater to come to the hand for a special fine grain of canary

seed or for a juicy bit of lettuce. A Softbill will, in due course, appreciate the offer of a mealworm, a spider, or possibly a piece of meat.

The article referred to above appeared to suggest that Softbills were as easy to keep as Seedeaters. I have not found it so. For the latter the best seed is always obtainable and nothing but the best should be used. Seeding grass when in season, millet sprays, and some green food will probably suffice to keep the majority in reasonable health. For Softbills the food must be more varied and, in the winter particularly, it becomes increasingly difficult to find suitable live food. The insect food has to be prepared with care, and consists of many component parts. I have never actually tried Sunbird mixture, no doubt it corresponds closely to the insect food used at the Zoo. This is the mixture which I use—it is very excellent. Mealworms are to some extent useful, but in the summer are inclined to be too fattening and heating. Considering that mealworms are fed mainly on biscuit meal the amount of nourishment in them cannot be very large; and often in the summer if required for feeding young birds (if any) they become increasingly scarce and expensive. Gentles are at times useful, but are themselves difficult to keep for any length of time.

Again, nearly all Softbills require fruit. Currants soaked in hot water, oranges, ripe pears, and grapes, but I have found that only white grapes are really enjoyed. Banana too is eaten, but this fruit is possibly rather too fattening and certainly makes the perches, etc., very dirty.

In winter or during any sudden spell of cold weather, unsweetened condensed milk to which is added plenty of honey and mixed with a little warm water is a real delicacy. Even the larger birds such as Sibias, Fairy Blue Birds and others thoroughly relish it. The smaller Softbills are kept supplied with it from the end of October to the end of March.

Also some of the larger birds appreciate raw meat cut up into tiny pieces with scissors and mixed with insect food. Shamas, Drongos, and even King Birds of Paradise were in the habit of picking the meat out before eating anything else. Possibly to some extent it replaces the live insect food which normally they would obtain.

Of course, these are only personal experiences, other people may have found differently.

To summarize, there is little doubt, leaving out the question of "comparative" mortality, that, from a food point of view alone, Softbills require more care than Seedeaters, but they are certainly worth the extra trouble.

The Marquess of Tavistock has mentioned his experiences with Fairy Blue Birds. I was luckier apparently in so far as the only two I ever possessed were a true pair. They are most interesting birds but, like some of the Bulbuls, are rather loose-feathered. Unfortunately, owing to lack of space they never had an opportunity to go to nest as they were always together with eight or ten other birds. The hen became very tame indeed, and would take mealworms, meat, or grapes from the fingers. She, at various times, used to carry nesting material, but owing to the reason stated above nothing developed.

A pair of King Birds of Paradise lived well for a long time, but eventually the cock succumbed, I believe to Polyneuritis, in spite of continuous treatment. The hen certainly made an attempt to go to nest by carrying nesting material into a hollow tree-trunk nesting box but, maybe owing to the cock not being completely fit, nothing further happened, though he used to display to the hen regularly.

The above is interesting for, I believe, until quite recently the nesting habits of this Bird of Paradise were unknown and even their eggs had never been obtained.

Mr. Frost informed me quite recently, however, that he had been successful in getting the King Bird of Paradise to lay eggs and that the nesting box used was a hollow tree trunk. This, I believe, took place in Singapore.

The hen was always much more lively than the cock, even when they first arrived, and is alive now.

I have never yet kept any of the Sun Birds but hope to do so one day.

Sugar Birds, however, are very interesting and very beautiful. A pair of Blue Sugar Birds, which had been in the aviary for some considerable time, caused great excitement one summer by going to nest, but unfortunately, out of five eggs laid in two nests, not one was

fertile. The hen was finger-tame and possibly this may have had something to do with it.

Experiences with a pair of Black-headed Sugar Birds were quite heartbreaking. They were in a large aviary to themselves and to my delight and surprise I found a nest about 4 feet off the ground with two eggs. The hen sat tight, but was particularly careful never to return to the nest if anyone was about. In due course two young hatched. At about mid-day a thunderstorm with tropical rain washed nest and young away.

Again a nest was built, two eggs laid, two young hatched. Three days afterwards another thunderstorm worked the same havoc.

Subsequently I perforce had to give up many of my birds, but strangely enough have succeeded in obtaining again the original pair of Black-headed Sugar Birds. Perhaps the elements will not be so unkind next time.

Of some of the larger insectivorous birds may be mentioned the Racket-tailed Drongo—a wonderful mimic, fairly easily tamed, marvellous at catching mealworms in the air, and quite hardy.

I have not found them particularly spiteful, though unquestionably individuals vary, and they are inclined to snap out at any smaller bird that flies near them.

The African Roller makes a wonderful splash of colour in an aviary when he once gets over his early nervousness.

Bulbuls, Shamas, Pekin Robins, and Mesias are all delightful, but I have never yet succeeded in rearing the young of any, though nests have been made, eggs laid, and the young hatched off in each case.

It may be interesting to mention here a larger White-eared Bulbul which is kept in a cage in the house. This is sometimes miscalled the Persian Bulbul, but the latter is, of course, a warbler.

He is extraordinarily tame and spends most of his time displaying to himself in the looking-glass in the sitting room; a habit of which he never tires.

I cannot close this article without mentioning two birds which for about two years were a continual source of joy. Two tiny Softbills with erectile crests, brown in colour and about the size of a White-eye. A Black-headed Sibia in miniature with many of the same movements

and habits. I am referring to what are to my mind very rare birds for I have only seen three, the Black-chinned Yuhina. These tiny birds appear to be quite hardy and at one time looked like going to nest. This was obviously impossible as subsequently they were found to be two hens. Their end was extraordinary. They were in a compartment to themselves and in the next compartment were a few Seedeaters. It is only possible to attempt to reconstruct what took place. Apparently the perch on which the Yuhinas were in the habit of sleeping projected a few inches into the adjoining compartment. During the night, presumably, a Parrot Finch dropped dead off its perch and in falling must have hit the protruding end of the branch on which the Yuhinas were roosting. The shock caused them to fall into the water trough, where they were found dead in the morning.

There was certainly no more than ½ in. of water in the trough, so drowning can be ruled out. In any case the subsequent *post mortem* could reveal no cause for death. Presumably, it must therefore have been shock.

The third bird was in a very bad condition when purchased and died shortly after.

One other point and this about Parrots. Restrictions are easily imposed but it is far harder to obtain their removal. The ban on Parrots owing to *Psittacosis* has been in force for some considerable period now. Will it, like some of the relics of D.O.R.A., continue *ad infinitum ?*

ARRIVAL OF THE SPLENDID GRASS PARRAKEET

In the Magazine for November, 1931, the arrival was reported of some half-dozen examples of *Neophema splendida* in Adelaide, and since that we have read in the daily papers that a pair of these birds was coming to England for His Majesty the King. These have now duly arrived, having actually reached our shores on 9th January, and by the kindness of Mrs. Fetherstonhaugh, who is taking charge of them, I have had the privilege of seeing them, and they are certainly quite as beautiful and in other ways as delightful as one had always pictured

them to be. They remind one strongly of Turquoisines, to which they are, of course, closely allied, but the scarlet chest of the cock bird is most conspicuous and striking, though he lacks the red shoulder stripe of the cock Turquoisine.

The Splendid Parrakeet was always considered a rare bird, though some sixty years ago it was not unknown to aviculturists in Europe. The only pair the Zoological Society appears to have possessed arrived just sixty-one years ago, and from these a young bird was hatched the following year though whether this was reared to maturity or not I have been unable to discover.

The species has its home in South and South-Western Australia, but, apparently, it is very local in its distribution, for it seems to have entirely disappeared for sixty years or so.

When in Western Australia twenty-four years ago I met most of the ornithologists there and enquired as to the existence or present status of *Neophema splendida*, but no one had heard of it for many years past, and all seemed to think that it had disappeared for good. That the species still existed was proved towards the end of 1928 when, so Dr. Hamilton informs me, an aboriginal living at Koonibba, a mission station at the north of the Gulf in South Australia, found a small Grass Parrakeet that had flown into a wire fence and broken a wing. It died and was sent to the Adelaide Museum where it was identified as a specimen of *Neophema splendida*.

Now that this lovely species has reappeared it is greatly to be hoped that every endeavour will be made to propagate it by breeding in captivity, for there is little doubt that it will prove to be quite ready to breed if given suitable conditions. D. S-S.

CORRESPONDENCE

BREEDING OF THE SAND GROUSE IN DENMARK—AN EARLY RECORD

When having occasion to go through some of the back volumes of *The Zoologist* I came across this interesting record and, as there seems to be no notice of it in Dr. Hopkinson's *Records* or in the AVICULTURAL MAGAZINE, a short summary of the paper may be of

use now that *The Zoologist* is a thing of the past, and as there is no proper index to the series the large amount of valuable information contained therein is very inaccessible.

In *The Zoologist*, vol. I for 1892, p. 341, Herr Bertel Christensen, of Copenhagen, tells us that in 1890 his Sand Grouse (*Syrrhaptes paradoxus*), had laid fertile eggs but unfortunately they did not hatch. However, in 1891 he had better success, and obtaining nine eggs he placed them under a bantam, but most of these seem to have been smothered by the hen. However, on 6th August two chicks hatched out and were promptly put into a fostermother. Owing to improper feeding one died on 11th August. "Unfortunately I thought too late of trying them with grass and clover-seed. The survivor thrived well on this and is now (9th April, 1892) in the best of health and very tame."

Herr Christensen seems to have been a pretty good aviculturist as he speaks of hatching out, under this same bantam, Chinese and Francolin Quails both of which he seems to have fed on moistened ants' eggs mixed with egg-bread, yolk of egg and bruised millet-seed.

It is evident from the above that the parents of this Sand Grouse were part of the great eruption which took place over Western Europe in 1888 reaching the British Isles and breeding here in the wild state.

W. H. Workman.

MASKED LOVEBIRDS

In a recent number of the Avicultural Magazine you asked for experiences of members with young Masked Lovebirds leaving the nest not fully fledged.

One pair of Masked Lovebirds in particular, in my own aviaries, that always have perfectly feathered young ones, live in an enclosure well covered with grass, principally cocksfoot, prairie grass, and rye. The birds regularly chew up the leaves of the grass leaving only the fibre in the form of a little pellet on the ground. When they have young in the nest, they eat some of the root of sugar beet growing in their aviary.

In another aviary there are two pair of Masked Lovebirds whose

young are the same as those complained about. It is noticeable that this aviary is not so well covered with grass, nor do the birds take the interest one would expect in seeding grasses thrown in to them. I suggest that the perfectly feathered birds in one nest are caused by the large quantities of grass consumed by the parent birds.

Shortly I hope to have an opportunity of proving this theory by shifting those pairs which usually have imperfectly feathered young to another well-grassed aviary.

THE AVICULTURAL SOCIETY OF NEW ZEALAND.
G. ROWLAND HUTCHINSON,
Hon. Secretary.

A CURIOUS HYBRID

In reply to the query by Sir David Ezra, in the November number (p. 322), as to whether the cross between the Java Sparrow and Bengalese has been produced in England, the answer, as far as my *Records* go, is in the negative, though since these were published (1926), I have been able to add a record from Japan given in Hachisuka's *Variations Among Birds* (Tokyo, November, 1928) of this cross having been recently bred in the Marquess Yamashima's aviary in Tokyo.

I should be interested to learn if Sir David Ezra knows where the birds represented were bred, for it seems quite likely that they were a later brood from the same collection.

Among other hybrid records among similar birds new to me given by Hachisuka from these aviaries are :—

Indian Silverbill × Cherry Finch
Bengalese × Maja Finch
Long-tailed Grass Finch × Bengalese
Crimson-rumped Waxbill × Orange-cheeked Waxbill
Crimson-rumped Waxbill × Grey Waxbill
Cherry Finch × Zebra Finch.

Of the last two, however, there were records of the crosses the other way, in Italy and France respectively.

E. HOPKINSON.

ON BEING A BIRD ONE'S-SELF

It was in our Magazine, I think, that I was first honoured by being called a poet in so many words in print (in 1923); and this, and the fact that you, who were thus kind, have been asking for copy, emboldens me to write, much against my will, about myself, since I cannot get the answer I want anywhere but in this Magazine, and a poet is often—especially by himself !—compared to a bird. There is, I think, a good deal in the comparison, for personally, when I have had the fit on, I have known no more than a bird what I was going to say, nor do I know whether I can write verse on a given subject any more than a mocking or talking bird knows whether he can reproduce a given sound that takes his fancy. There is also the element of rivalry common to both birds and bards, and the inspiration gained from the opposite sex—especially if remote, for poets do not seem to get inspiration from their wives, and birds, we know, are apt to go off song when happily mated. I, alas ! am now going off song, while likely to die a bachelor; but I am always the scientist first, and what I want to know is whether, when one has the verse-fit on, one has knowledge of subjects not obtained in the ordinary way. And as I have written mostly on birds, the subject is linked to some extent with our study of them.

What I have found is that, having availed myself now and then of poetic licence so far as to make statements which I should not have made in prose, I have *afterwards* found that there was justification for the same.

In writing " Circë and the Wildfowl," I talked of the swan singing his own dirge while giving the well-known display, and thought that here I was combining attributes of the Mute Swan and the Whooper, which last has been known to sing—or rather trumpet—before its death. But years after writing this piece in 1923, only a year or two ago in fact, I saw an account in the correspondence columns of *Country Life* of a Mute Swan, in two instances, uttering musical sounds before its death, due in the one case to illness and in the other to injury. So the old legend about the swan singing before death is proved in the case of the most familiar and picturesque species.

Then, in the Nightingale's speech in " The Masque of Birds," I

imply that an eagle would strike at a Curlew, though I thought such an active bird would hardly be noticed by such a large, cumbrous bird of prey ; but I have since read (I forget where) of a case in which a dead Curlew was found in an Eagle's nest. I also implied in the same piece that Crows would follow an Eagle in the hope of booty, though I knew of no such case ; but I have since read of one—I think in the *Shooting Times*. In the Skylark's challenge to the Nightingale in the same piece, I think I have got the rhythm of the bird's song in the last three lines :—

> " The Nightingale can never be
> Rival of heaven's bard like me,
> He owes to night men's eulogy."

This was quite unconscious on my part, and quite unconsciously, too, I now find that in " Stormcock's Saga " I have got that of the Missel Thrush, though this is a song that I can never remember as I do the Lark's :—

> " Stormcock swains style me,
> Reading me rightly,
> High on the holm-top
> Chant I my challenge, etc."

The rhythm of the bird's *flight* was what was in my mind at the time. Now, the point on which I require information is, have I got any suggestion of the Blue Rock Thrush's song in the following piece, which I am compelled to quote in full ? Because I not only have never heard this song, but have not read any detailed description of it, and so have had absolutely no idea of it in my mind to draw upon unconsciously, as I may have done in the cases of the Skylark and Missel Thrush. The piece runs as follows :—

> " I am the bird the Psalmist knew,
> That lone upon the house-top sings :
> Though I flaunt not the vivid hue
> That flashes from the halcyon's wings,
> I bear the softer sweeter blue
> Of maiden's eyes whose heart is true ;
> And though they do not hear me who

But the home scenes of Britain view,
From Hercles' Gate to Khambalu
My rhyme o'er rocks and ruins rings."

If I have got this song right, there would seem to be some reason for supposing that poets really have the insight they claim; at any rate the other instances I have given are curious coincidences. What I should also like to know is, how many times a curious coincidence has to happen before it becomes the subject of a legitimate scientific inference?

F. Finn.

A WEAVER AND A WHYDAH

Two somewhat dubious Ploceid Finches in eclipse plumage on sale in the Zoo department of Messrs. Gamage were pointed out to me by the manager during the latter part of 1930. I decided to have these sent on for developments, and in the spring of 1931 turned them out in the garden aviaries. The Weaver proved to be *Hyphantornis mariquensis* (see *Ibis*, 1868, pl. x, by L. Wolf), but the Whydah remained a mystery by assuming an entirely black plumage and leaden silver bill. On examination the lesser wing coverts only exhibited greenish edges. On the assumption of the eclipse plumage the wing pattern assumed the colours of *V. eques* (*P.Z.S.*, 1863, pl. xv, by Lenneus), but the rectrices were not long enough for that bird. It seems I shall have to wait yet another season to decide whether it is not a form of *Penthetria albonotata*, of which species I have had several examples. Both birds seem only fit companions for *H. cucullatus* or *P. oryx*, and much too offensive when enclosed with the smaller Fire Weaver group, even *capensis*.

A. Silver.

THE FOOT OF THE CASSOWARY

On page 70, Aviculturai Magazine for March, 1931, Mr. Delacour states that a Cassowary has three toes, the middle one armed with a sharp claw.

Our Cassowary has the three toes, but it is the inner toe which has the long claw.

Is there any difference in Cassowaries in this respect ?

Anatomically, of course, it would be a big difference, so I imagine it must be a slip.

W. L. English, M.B.

[This was certainly a slip. The claw is on the inner toe in all species.—Ed.]

ZEBRA FINCHES AND ORANGE WEAVERS

I thought my first year here was going to be a complete failure as far as breeding results were concerned, as the only foreigners that nested were a pair of Zebra Finches, and they spoilt their chance of success by the cock being too fond of seeing what was going on while it was his turn to sit. The eggs, all fertile, were laid far back in a Keston Finch box. This did not suit Mr. Zebra and he carried up seven pieces of lime about the size of a Zebra's egg, placed them well to the front of the box, and I presume he sat on these as he was always very visible when he took his turn at sitting. However, as I bought him on 1st April I could not expect much from him.

All my failures were forgotten when my Orange Weaver came into colour, as he paid great attention to the hen and she showed every sign of accepting him. He built a nest in a branch hanging on the wall of my indoor aviary (a converted bedroom), and shortly after I saw the hen take up a piece of flowering grass. He was overjoyed when she did this and danced rather than flew about all day, " singing " his odd " song "; when the hen had lined and completed the nest entirely with feathery brown flowering grass-heads, they mated at the opening of the nest. She would go there calling him to her. She laid one egg only, a very glossy blue one with no spots. She sat so carelessly that I was absolutely amazed to see a baby weaver about thirteen days later. I was unprepared, but got dozens of spiders as soon as I could and mashed them into " Stimulete ", and the baby lived three days, and then I found the hen dragging it about the floor. The cock built

again two further nests and tried hard to persuade another hen to take an interest in one, but she refused absolutely, and so he pulled feathers out of her in a rage. His mate would not accept the new nests either, but redecorated the old and laid three eggs, one in the nest, one on my head as I was washing the floor, and one on the floor in her haste to get out of the nest quickly for a mealworm. She again sat on the one egg. This time I had gentles, and everything ready and the egg was not fertile. After I took it away the cock drove the hen to sit for three further days, sitting above the nest to keep her there. For a time while she was sitting he became very vindictive to an odd Napoleon Weaver hen I have. I bought both the Orange Weavers for 6*d.* in very bad condition on the 15th of March, and I kept the hen warm in a small cage until May before she grew any feathers except her head feathers and a few battered wing feathers. She grew no feathers until I gave her Phospherine, and then she became covered in tiny quills after taking it for a week.

One further point of interest about their nesting. After the egg hatched the hen decorated the rim of the nest with much flowering grass, completely hiding any view of the baby. It was quite a fairly deep nest, and the hen used to hold on to the rim with her feet and lower herself slowly down breast first. The cock has lost his orange now, but he has not lost his passion for weaving, and there are many half completed nests in the aviary.

(Mrs.) Christine Irvine.

AN OLD SNOWY OWL

A Snowy Owl has recently died in Sir Claud Alexander's aviary, which was captured on board ship off Cape Race in February, 1906—25 years ago.



Painted Finch
Emblema picta.

Immature, adult female, adult male.

THE

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THE PAINTED FINCH (*EMBLEMA PICTA*)

This brilliant little bird—more brilliant perhaps than beautiful—is a great rarity nowadays in aviculture. It is an inhabitant of the warmer parts of Australia. Although discovered in 1839, it seems to have been practically lost sight of until 1894, when the Horne Expedition came across it in Central Australia. Subsequently a few living specimens reached this country. Mr. Herbert Astley acquired a pair in 1896, and specimens were exhibited at shows in London in 1908. In 1910 Mr. F. E. Blaauw purchased a pair from the Antwerp Zoological Gardens, which nested in a box in a warm sheltered outdoor aviary, building a large, dome-shaped nest from the materials of two Common Wrens' nests and one Robins'. Apparently nothing came of their attempts. He describes these as "very quiet little birds, which in many of their little ways remind me of the Red-shouldered Finch from Africa (*Pytelia phœnicoptera*)". (AVICULTURAL MAGAZINE, 1910, p. 289.) Mr. Reginald Phillipps, in our Magazine for 1911, writes of his experience with the species and records the astonishing fact that some sixty pairs of Painted Finches reached the Port of London in February of that year!

Mr. Phillipps found them quite ready to go to nest, but although he had three pairs only one young bird left the nest and this subsequently died, and in spite of the number of birds imported at that time, none seems to have been successfully reared from the nest, which seems to show that our climate is unsuitable to their well-being and,

if others should be imported, it would be best to confine them to a well-lighted indoor aviary. From Mr. Phillipps's experience it would seem that small insects formed a considerable portion of the food of the nestling.

As may be seen from the accompanying plate, the sexes are almost alike when adult though the cock-bird has more red on the face and throat than the hen. Our plate appears to be wrong in one respect, namely in the colour of the eyes, which, in the adult birds, is white.

D. S-S.

NOTES ON THE BIRDS AT LILFORD, 1930 AND 1931

By A. F. Moody

I am permitted by their owner to send a few particulars of the birds at Lilford during seasons 1930 and 1931. These, of a brief and scrappy nature, are very incomplete. Still, failing more important matter, I trust the editor may find a corner for them.

In the first place, with much good money going to the nation's need, aviculture, like other interests, has suffered. We endeavour, therefore, to replace stock as much as possible by breeding or by exchange.

The two comparatively mild, damp seasons have also been conducive to losses by death; certainly more so than the cold, dry winter of 1929–30. Our greatest loss, of course, as recorded in the January (1931) number of this Magazine, was a female Whooping Crane (*Grus americana*), a much lamented bird which valiantly strove to the very last to live, and apparently succumbed to sheer old age.

Since then, three other Cranes, a Sarus, a Manchurian, and an Asiatic White have died natural deaths. This quartet had lived 38, 42, 41, and 41 years respectively in the collection, making it appear, supposing them to have been youthful when received, that the natural lives of the larger Cranes may possibly be in the neighbourhood of forty-five years.

Another veteran showing age, and who now has his good and bad days, is an Imperial Eagle (*Aquila mogilnik*) received in 1895. Others to join the great majority include a Short-tailed Glossy Starling, 15 years, a Great Crested Grebe, which thrived for a year with us, and, of course, the usual crop of infants. Additions during the period referred to include three pairs of New Zealand Grey Duck (*Anas superciliosa*) received direct from that country; also four of their Pukeko or Swamp Hens (*Porphyrio melanonota*). These, thanks to the kindness of the people concerned and the very excellent manner in which they were packed, reached this country in excellent condition, as did later a beautiful pair of Variegated Shelduck or Paradise Ducks (*Tadorna variegata*) very kindly brought over and presented by the late Mr. Reginald Loder.

Another interesting acquisition is a brood of six Red-breasted Mergansers (*Mergus serrator*) reared from wild-taken eggs.

This species, so far as I am aware, has rarely been reared in captivity. Our examples, three pairs, one of which some time ago found a home in the Zoo, were hatched on 10th July, 1930. From the first they proved ready feeders, and without any unusual difficulty were reared under a hen. Incubation lasted 29 days. The young began to feather at about 16 days; indications of a crest appearing at about 5 weeks. The sexes could be distinguished as soon as feathered or earlier by the females' smaller size. On handling two males at 20 weeks old, the small ornamental shoulder feathers were just visible.

Further notes are that by December all the birds had gained much white on the throat, etc., while by January, 1931, the males retained had acquired a considerable amount of colour, including some dark on the sides of the head. Finally, at the time of writing (Christmas, 1931) the surviving male (one unfortunately during the past autumn was choked by swallowing a wasp) is coming into full colour.

Other breeding successes of 1930 include most of the more usually bred duck, Upland Geese, Scaup, Mellers Duck (*Anas melleri*), one Japanese White-necked Crane, and one Red-billed Tree Duck (*Dendrocygna autumnalis*).

During 1931, most species of Duck were reared, our best lots being nine Mellers Duck (*Anas melleri*), two Comb Ducks or Indian Black

Backed Goose (*Sarcidiornis melanonota*), five Upland Geese, a pair of Eagle Owls, and from six fertile wild-taken Eiders' eggs, five young.

In spite of our best efforts to the contrary, several hybrid Ducks were produced and reared, namely a full brood of nine Scaup × Canvas Back, and a pair of Falcated × Shoveller.

During this season the Ring-necked Parrakeets flying at liberty increased by five.

Three beautiful Red and Blue Macaws at liberty did not nest for some weeks, however, they took possession of, and jealously guarded, a hole in an elm-tree.

A pair of Blue and Yellow Macaws (*Ara ararauna*), confined to an aviary, laid, and dutifully sat upon, a first and second clutch of infertile eggs.

Two further additions have been a pair of Mexican Thrushes (*Turdus tristis*), and a pair of South African Thrushes (*Turdus olivaceous*). The former somewhat resembles our English Song Thrush except that the sides and breast are uniform, the throat only being pale and spotted ; said to be a songster of some merit, the only sound I have heard proceed from the species is a sweet and rather Blue-bird-like note.

The Africans differ in the sexes by the male being olivaceous above, dull orange beneath. The female resembles a female Blackbird, and in the distance might easily be mistaken for one.

Trumpeters of two species (Dusky and Grey-winged) have been added, as have Lesser White-fronted Geese, the rarest, smallest, and most attractive of the British Grey Geese.

Comparatively new arrivals also include a pair of Dusky Thrushes (*Turdus dubius*), Black-billed Tree Duck, Roseate Spoonbill, Scarlet Ibis, Great White Herons, Orinoco, Semi-palmated, and a pair of the beautiful little Maned Geese (*Chenonetta jubata*) from Australia. Referring to this last-mentioned assortment, most are well known, including the large Egrets. Before leaving the latter, however, I may state they arrived in the spring, completely moulted out during the summer, and although not allowed to fly, very ornamental they looked wading about the shallows or perching upon the low trees of an island. One noticeable peculiarity of these snake-necked birds while enjoying

semi-liberty, was their cleverness and perseverance in stalking Chaffinches. Usually they approached with stealthy steps, neck held high, and eyes focussed upon the quarry. Sometimes a luckless victim would be caught. More often patience went unrewarded.

On being transferred lately to a pool aviary, where they are shut into a shed at night, this trio still retain their wealth of plumes [1] and snow-white purity.

The Black-billed Tree Ducks (*Dendrocygna arborea*) received from a private source, are charming birds, extremely tame, and apparently hardy enough to stay out of doors during any but the worst weather.

Equally pleasing are the dainty little Maned Geese, scarcely larger than a Wigeon. These wander about, utter their peculiar barking cry, and seem ever pleased to see one. The Orinocos too (*Chenalopex jubata*) are attractive. Conspicuous amongst other waterfowl by their foxy plumage, upright carriage, and bright red sealing-wax-like legs, they appear to require some protection during their first winter and are for the present being slept under cover with some half-hardy Tree Ducks.

Should the weather become severe, the Magpie Geese (*Anseranas melanoleuca*) also may be favoured in this way. These curious birds indeed, are natives of Australia, and I understand of recent years have rarely been imported. Our examples are remarkably tame ; they follow one about like a dog, take food from the hand, and are very conspicuous by their black and white plumage, long orange-yellow legs, and partially webbed feet.

One other bird much admired by ornithologists visiting the collection during the past two years is a female Montague's Harrier (*Circus cineraceus*). Said to be a species difficult to maintain in perfect plumage and condition in confinement, I have always as an ex-falconer, thought that given the care and attention so necessary to the smaller and more delicate Hawks, that the Harriers might prove more satisfactory ; the result being, the example in question has responded to this treatment and, although kept loose in an aviary, continues to be fairly steady, sleek, and in faultless feather.

[1] The well-known aigrettes or "ospreys" at one time so much in demand by ladies.

PARROT FINCHES (*ERYTHRURA PSITTACEA*)

By P. B. Webb

In the late Autumn of 1930, I was lucky enough to get five newly-imported Red-headed Parrot Finches all in the pink of condition. Having heard that the number of cocks imported greatly exceeded the hens, I thought it wise to buy six more which were offered to me about a month later. When these six arrived, three were rather sick looking, and though they bucked up a bit in a few days time, I eventually lost all three during the winter. When they were opened, all three proved to be cocks.

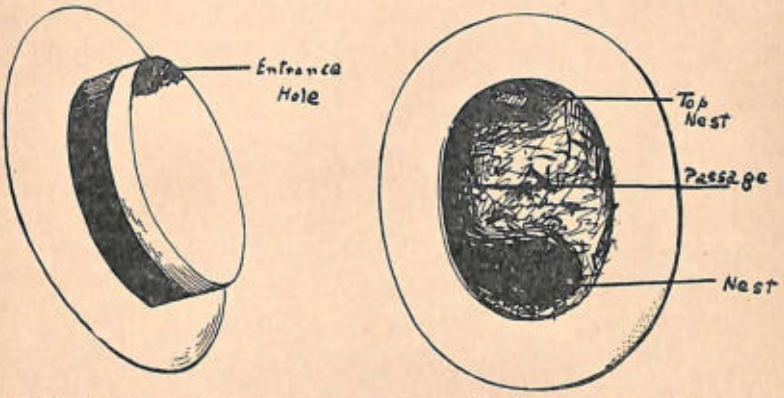
During the last week in June the remaining birds were turned out by themselves into one of my aviaries, which was 12 by 16 feet, and 7 feet high. It was planted with a hedge of box about 4 or 5 feet high, and one or two other bushes. There were several Hartz cages, a few small nesting boxes of usual type, four coco-nut husks, a rush nest, and two straw hats, these we placed in suitable places both in the flight and the shed.

For two days the whole family enjoyed themselves chasing each other, evidently delighted to be outside again. On the third day I found a Hartz cage almost half-full of beech leaves, dried grass, and moss when I inspected at lunch time. Next day the nest was complete as far as I could see, and one of the birds sat looking out and chasing his friends if they dared to come too close. I did not dare to go near it, so I did not know for almost a week that no eggs were laid.

The nest had been abandoned at this time, and another one had been started also in a Hartz cage. The first was situated about 18 inches from the ground in the box hedge, and was well concealed, but the second was in the most conspicuous place possible, about 5 feet from the ground against the wall of the house. It had absolutely not a leaf within 4 feet of it. This nest was treated in the same way as the first, and in four or five days I noticed that work had begun in a straw hat. It was 6 feet from the ground and inside the house. Three days of building and then at early morning roll I was a Parrot Finch short. I did not see it for three days, so a search was made for it everywhere, keeping away from the nest. No dead bird could be

found, high or low. The following day another search was made, also without result. I was in such distress that I decided to look in the nest. It also was empty. The hat was so full of hay and moss that it was almost up to the hole, and this being fairly large, there was no doubt it was empty either of eggs, bird, or anything else.

A few days later I counted the birds as usual in the morning, and there was one too many. The next day the same. Another general search was made for a nest which had not previously been found. Now the secret was revealed—the nest in the straw hat had two decks, and there were three young birds and a clear egg in it. When the straw hat was removed from the wall the whole structure could be



An old straw hat, nailed to a wall by its brim and with an entrance hole at the top, makes an excellent nesting site for Parrot Finches. The right-hand figure of the hat reversed shows the method of construction of the nest.

seen as though in section. The top nest was full of droppings as though the cock spent the night up there. Then there was a vertical passage down the side of the hat into the real nest, which was almost at the bottom.

Needless to say, the nest was replaced with great haste, and on inspection about an hour later the birds were one short again, so my mind became easy. It was not long before the very strange sounds made by young Parrot Finches were heard when the shed was entered.

I have lost the notes I made of the day they left the nest, but one morning when I was doing my round, it was very evident that something out of the ordinary was going on. Three youngsters were out

of the nest, and were flying about like feathered bullets, smashing against the wire division in their house till the place was in a perfect pandemonium.

Now, at this time the weather was very showery, and I spent a week in fear and trembling that they would get out into the aviary and get caught in the rain. Every time a shower came on I was to be seen heading for the aviary and catching the young birds and replacing them in the sheds.

The hole from the shed to the flight was reduced to 3 by 3 inches, but it was no good, in five minutes they were out again.

Perhaps I wasted my time, I do not know, but several times a shower of rain has left young Zebra Finches dead in my aviary, and no chances were being taken, in spite of the fact that Parrot Finches seemed to me as hard as nails.

At the end of a week all was well, and the youngsters had gained enough knowledge of the world to know when and how to get out of harm's way.

Perhaps I should mention that the young birds were rather a dirty green colour, lighter underneath, with black upper mandible and yellow under. Their tails were short and almost black, very little red to be seen at first. One bird was quite red-headed, while the other two had only about six red feathers each. I wonder, will they turn out to be hens ?

All had the curious blobs on the sides of their bills, a large one and a small on each side. Even the small ones are larger than those found on young Gouldians.

Their legs were very dark yellowish grey, but paler than the adult bird.

My old birds were fed during the winter on canary seed, white and spray millet, and about two mealworms per head once a week. They seemed to do well, and were in perfect feather, except when in the moult. They are fond of spray millet and canary, but took very little white millet. They were offered " paddy " rice and though they consumed a little they seemed to throw 90 per cent of it about, so I gave it up. I don't like this seed anyway, so it was a relief to me that they were not strong on it either. They also had before them from the time they were turned out, a small dish of insectivorous food, which

is supplied for my Shamas. They were on the look-out for this every morning, though they only ate small quantities of it. I have found the same treatment very suitable for the blue-headed variety (*trichroa*).

The first nestlings were flying about two weeks when the second nest was started. Again a straw hat was used, it was also in the shed, but was only about 18 inches from the ground. It also had two stories, but something went wrong, and though it had very definitely a basement, the ceiling gave way a bit, so it was apparently decided to use only the floor above, and in this three more white eggs were laid. I discovered this when inspecting the nest on the tenth day of incubation. This is where the big blunder happened. Entering the shed on this morning the bird left the nest.

Thinking this a good chance to have a peep inside, I closed the entrance to the flight, so that I could do the job unobserved by the old birds. The eggs were there, and I was satisfied. About two hours later it suddenly struck me that I had not reopened the slide to the flight. I hurried home, only to find that this was correct. The birds returned to the nest, and in due course one young bird hatched, it lived three days, and the old birds had stopped brooding it.

Next morning the birds had started sitting on the two unhatched eggs again, I let them sit for two more days just to make sure that this was really so.

On removing the eggs, both had birds in them, but, of course, dead. I paid dearly for my forgetfulness, but is it usual for birds to start sitting again like this ?

At this time the old birds were well in the moult, and therefore the nesting hats, etc. were removed for the season.

Perhaps of the many things learned about these birds, the most interesting are as follows :—

(1) That out of eleven old birds imported, only one turned out to be a hen.

(2) That though there were several odd cocks in the aviary, they gave no trouble at all during the breeding season.

(3) Mr. Seth-Smith is right, they *do* like straw hats.

(4) When birds are nesting, mind your own business, as even if the birds don't mind you being " nosey " *you* may make a slip.

The young birds are now—24th December—exactly like the adults, and all are full of the joy of life. They are, of course, all indoors in their shed with about ten small Waxbills. The house is heated—but don't let this worry any of you—the temperature never goes above 55° F., but I don't like it to go below 50° F., though it has been down to 42° F. on one very cold night, without doing any harm.

It is easy to keep a small room up to this heat, so don't look upon it as out of your reach if you have not tried it. If you have electric power, try this way: Get (second-hand, if possible) an ordinary water radiator and an electric immersion heater (this must be new)—your plumber will fix it into the radiator for you. You only need a small heater, say 750 watts. The General Electric Co. supply one of this power with three heats which is very suitable, but a single heat one will do quite well, in which case probably 500 watts would be the best size for a room about 12 by 12 feet.

You could use an ordinary electric fire, but it is inclined to dry the air up so I like the water best.

I have decided to keep my three young birds in the hope of having two or three true pairs for next year.

I think that no one who has kept and bred Red-headed Parrot Finches would put any other foreign Finch before them, perhaps there are few who would put any bird before them. However, with my limited experience I should not say this, but if anyone can tell me of any better, please do so; I would like to have a pair in time for next season.

Now, just one more thing, if I may. I believe that an expert can sex these birds fairly accurately, given several to choose from. The true pair I have are as like each other as two peas, as are all the adult birds I have; so unless you don't mind chancing being wrong, don't choose a pair of birds that show an apparent sex difference, if you do, sure as a gun, in a month or so when the dull-coloured one has moulted, you won't know one from the other.

I hope these notes will be of use to some of our members who may possess at some time a pair of these most delightful birds.

N.B.—One of the young birds is a hen, at any rate (25th January, 1932).

FURTHER NOTES ON RARE PITTAS

By Sydney Porter

Continuing the notes on the various rare Pittas which appeared in the last August issue of the Magazine, I might mention that quite a few of the beautiful Blue-tailed Pittas (*Eucichla cyanura*) were imported last autumn by Mr. Frost, and I hope by now that these birds have found a home where they will receive the attention that they deserve.

Most of the birds were males, which rather bears out the statement by Whitehead that the males and females separate at certain seasons of the year.

In colour this bird has the top of the head black, the feathers forming a pointed crest falling over the nape. Below this is a broad band of brilliant golden yellow, while below this from the beak to the back of the neck is another band of black feathers. The chin and throat are white, passing into another band of golden yellow, which meets at the back of the neck. On the upper breast is a band of brilliant shining blue, below which the whole breast is golden yellow finely barred with shining blue. Seen in the sunlight, the whole breast has a wonderful blue lustre. The upper parts are a rich reddish brown, the wings black, the wing-coverts and secondaries tipped with white, the narrow pointed tail bright shining blue. The beak is black and the legs leaden colour.

In the nesting habits this bird differs from the rest in so much that it does not nest upon the ground as the others do, and we read in the "*Pittidea*" that "the nest is built six or eight feet above the ground, and is usually placed amid the branches of an orchideous bush growing as a parasite upon some old trunk. These plants are frequently damp and mouldy, and occasionally the nest becomes soaked through from beneath." We are also told that " when seeking food, this bird will sometimes scratch with its feet in the manner of a chicken, and examine the scattered leaves and exposed ground with the bill. Its foods consists of earthworms, beetles, and various insects and their larvæ."

The Borean Granatine Pitta (*Pitta granatina borneensis*). This amazingly coloured bird is perhaps the loveliest of the whole family, and perhaps one of the most extraordinary birds in the world. It seems as though Nature had done her utmost in brilliant decoration

with the Pittas, vieing one with another. This bird is very rotund in shape, looking almost like a brilliantly coloured ball on long legs. Nothing is known of the wild life of this bird except that it is found in swampy old jungles close to the sea in the great island of Borneo, where so many other extraordinary feathered forms are found. My bird was brought over by Mr. Goodfellow with four or five others in November of 1930. This is the second time that this bird has been imported, one other coming over in 1928, and was in Mr. Spedan Lewis' collection. My bird, a female, reared two young ones which were put in the same cage with it but as soon as they were able to fend for themselves she killed them by " braining " them. This, no doubt, shows that Pittas drive away their young as soon as they can fend for themselves.

Mr. Goodfellow tells me that the way the natives catch the birds is to find out the nest of the species, which is similar to that of a Wren's, made of moss with the hole at the side, and placed on the ground at the foot of a tree. The natives watch from a distance for the birds to enter the nest. They then creep up from behind the tree, and at an opportune moment clap their hands over the hole of the nest. After having caught one bird, they wait for the other, thus capturing both male and female. This shows, no doubt, that both male and female incubate.

The bird may be described as follows : The front of the head and crown to a line behind the eye, deep crimson, almost black ; a large circular patch on the back of the crown, nape, and neck, a brilliant crimson ; on each side of the head above the eyes is a long fine line of silvery lilac-blue feathers which stand out in the form of two horns. The whole back and wings are a glossy reddish purple, each feather having a lighter centre. The whole of the wing-coverts is a bright silvery lilac blue. The throat and upper breast are a rich deep purplish crimson, the whole of the underparts being the most brilliant scarlet. The tiny tail is bright purplish blue. The legs and beak are black. The horns with which this bird is adorned are quite unique, and are possessed by no other bird.

I found this Pitta different in its general demeanour from any other Pitta. Though tame, it was not very intelligent. It had a very peculiar

habit of appearing to waltz round and round very quickly; it also threw all its food out of the pot as soon as it was put in the aviary, and then picked it up at its leisure. This, I think, caused its death, as it picked up some dirt which caused mycosis. It never bathed, but stood for long periods in the water. It was really one of the dirtiest birds I have ever kept, but I was very sorry to lose it, for besides being one of the most unique birds I have ever had, I may never get the chance of ever getting another of these strange creatures. I think this bird must have been caught in a snare, for there were two deep wounds on its knees, but these were not noticeable unless the bird was handled.

Muller's Pitta (*Pitta mulleri*). This bird is a sub-species of the Black-headed Pitta (*Pitta sordida*), and these two birds have at various times been classed as the same species. Up to now I do not think that any one has had the chance of comparing living birds of the two species together before, for the only example of *P. mulleri* brought to this country was purchased by me from Mr. Goodfellow in the autumn of 1930. When I first saw it, it struck me as being very much larger and brighter in colour than my example of *P. sordida*, and comparing the two birds together, the difference was very apparent.

Dried skins, shrunk and faded, would give little idea of the great difference between the two birds. This bird is confined to Borneo, on which island are found so many others of this beautiful group.

This Pitta came to me in a very poor condition, with its feet swollen almost to the size of small marbles, indeed so swollen were they that the bird was only able to hobble about on its tarsi. It was almost dead through lack of food, and cold after a long and delayed journey from London on a bitter winter's day. We placed it in a cage with a thick layer of leaf-mould over a radiator, so that it could rest more comfortable, but in spite of everything we did it died in a few days, a loss which I much regretted.

Baud's Pitta (*Pitta baudi*). This is one of the loveliest and the rarest of the whole family. It is an amazingly coloured bird. Elliott says in his monograph: "This species in the vividness and depth of its strongly contrasted colours must be regarded as the most striking and beautiful of the Pittidæ."

A few of these wonderful creatures were brought back by Mr. Goodfellow from Sarawak in November, 1930. One was in full colour, but the others were in the sombre plumage of the females or young males, for in this species, contrary to the usual rule, the female is dull coloured. I did not purchase any at the time, as I was moving house, and did not want too many birds. This I much regretted, for a little later on, when I wanted one, they were all sold. All the birds seemed to be very tame. I think the Zoo has one of them, but this is a female, a rather inconspicuous bird of a dull chestnut and fawn with a bright blue tail.

Since the following notes were written, two very fine Pittas have been imported for the first time by Mr. Frost, namely, the Giant Pitta (*Pitta mixima*) from Halmaheira, a wonderful creature, of which the dried skins in museums give no idea of the real beauty of the live bird. The white feathers of the breast resemble the whitest porcelain, and the under parts are the most wonderful "living" wine-red.

It is thought that the white breast of this bird has been evolved as a protective measure, as there is an immense outcrop of white limestone in the forests which it inhabits, and as the great naturalist, Wallace, says, "it is everywhere projecting and often almost blocking up the pathways."

Macklot's Pitta (*Pitta macklotî*) is a much smaller bird than the foregoing, and is characterized by having the breast with bands of black, blue, and vivid scarlet, and belongs to the group known as the Red-breasted Pittas, of which most examples are found in the islands adjacent to New Guinea.

This bird has a wide distribution being found on the mainland of New Guinea, also on many of the neighbouring islands, and in the Cape York district of Northern Australia.

Both the Noisy Pitta (*Pitta strepitans*), a bird which bears a resemblance to the Green-breasted Pitta but lacks the green breast, and the Rainbow Pitta (*Pitta iris*), a most lovely bird, which is characterized by having the head and breast jet black, have both been imported, the two species being found in Northern Australia.

Swinhoe's Pitta (*Pitta oreas*), a beautiful bird allied to the well-known Bengal Pitta which is found in a certain part of eastern China,

and again in Formosa, was imported a few years ago for a well-known aviculturist.

Another beautiful Pitta which has been imported several times, is the Blue-winged Pitta (*Pitta moluccensis*), a bird with a very wide distribution, being found in Burma, Siam, the Malay Peninsula, Sumatra, Borneo, south China, and the Philippines.

In conclusion, I might also mention the New Guinea Pitta (*Pitta atricapilla*), a bird belonging to the green-breasted group, and I believe there are one or two examples at the present moment in the Zoological Society's gardens. This, I think, is a complete list of all the species which from time to time have been imported into this country. Making a total of sixteen out of the fifty known species.

PARROT DISEASES IN THE WILD STATE

By Dr. W. Hamilton (South Australia)

In August, 1929, spring and nesting time in South Australia, I took ten days holiday, and made a quick dash to the west coast. A thirty-six hours journey by steamer and rail.

Arrived at 5 a.m. at a small bush railway siding, where I was met by a patient of mine, who drove me 8 miles to his house, which I made my headquarters for the next ten days.

I had personally made six new trapping cages—being optimistic—and with a new pair of nets 24 feet long and a *Neophema elegans* as a call bird, I felt that the Scarlet-chested Parrot (*Neophema splendida*) was going to be unlucky enough to be caught. The day after my arrival we drove to the mission station, and tried to get some information about the Parrot. Rumours were numerous, and we drove from farm to farm, asking if any had been seen, but without having any luck.

The Aboriginals suggested trying a spring some miles inland from the mission station, and well into the desert. This spring had been known from time immemorial, and surely would be a likely place for birds to drink, especially as it was the only water for miles around that had been there before the white man came.

Full of hope, we set out, and found the spring—a beautiful shallow basin of water in a granite rock. The comparative absence of droppings was rather a disquieting feature. However, we set the nets, cut down a few boughs of mallee scrub, and slept on the ground.

Up at sunrise—about 4 a.m.—to my hide, only to see in the next three hours two Major Mitchell Cockatoos and a few Cat Birds.

This little disappointment was typical of what happened in the next week. Suffice it to say that we covered many miles, north, south, east, and west, on rumours of the birds having been seen by someone.

Port Lincoln Ringnecks [1] and Many-colours were the only Parrots seen, and they were regarded as a pest by the farmers, as they ate the grain, and even attacked the wheat bags to get at the contents.

As the time for my departure drew near, I decided that I might as well catch some birds of some sort to take back—not relishing the idea of returning empty-handed.

So the morning of my return I went to a farm, set the nets, and caught three dozen Ringnecks and five dozen Many-colours.

Actually I caught more than that number of Many-colours, but was amazed to see that a great number were suffering from eye disease. I had not known, prior to this, that it could occur in their natural state, but just accepted the general view that it was contracted in dirty trapping cages, etc.

All affected birds I released, and only kept those that seemed free from any sign of the disease.

These were put in my nice new clean cages, which had an inner lining of soft netting to prevent injury. In thirty-six hours I was back in Adelaide, and when I looked at my Many-colours, quite 50 per cent of them had eye disease.

I put two pairs in a small cage, about 12 by 15 by 18 inches, and kept them there until one pair had the disease very badly with bulging eye and abscess formation.

The other pair were not so far advanced. I treated all the birds with one drop three times a day of 25 per cent Argyrol and 1 per cent Atropine, placed on each eye.

[1] Bauer's Parrakeet, *Barnardius zonarius*.

The badly affected pair improved, and the eye, though blind, sank back a little, but these two birds died.

The other pair, not so far advanced, completely recovered. I left them in this infected cage for three months without further treatment, and they showed no tendency to relapse.

Ultimately I presented them to a sea captain, who took them to England, and they have shown no sign of reinfection.

My cages were absolutely new, and were only completed in time for my trip. They had never had a bird in them, so the infection could not have come from the cages.

Evidently the birds that I had kept as being free from eye disease, must have been already infected, though so slightly as not to be noticeable. The jostling in the cages, and the fright which would make them dash about, would naturally injure them, and cause the eye condition to progress rapidly.

One possible explanation occurs to me. For two or three years prior to this there had been a drought on the west coast, which is a farming district, and sparsely settled. The country is sandy, and winds were almost of daily occurrence. Farmers would sow their crops time after time, watch them sprout and show above the ground, perhaps 2 or 3 inches. Then came the sand storm, and the crops were cut off, shrivelled up, and buried with sand. Heartbreaking for the poor farmers, some of whom sowed their crops five and six times, and reaped nothing.

It is possible that the constant dust and sand storms with their flying particles of grit, may have irritated the eyes of the Parrots until they developed this eye disease. I have no proof, however, and merely offer it as a suggestion.

I think that early cases of eye disease may be checked, and even cured in Parrots the size of Many-colours, and the larger ones such as Barrabands and Rock Peplars (which, by the way, are called Rock Pebblers with us). But I do not think there is much—if any—chance of curing the smaller Grass Parrots of the *Neophema* species.

Soon after my return from the west coast, a patient who lives at Keith, in the south-east of South Australia (not a great way from where the Orange-breasted Grass Parrots have been seen), sent me a

young Porphyry Crowned Lorikeet, which was unable to fly when its parents and brother (or sister) left the nest. I noticed that it had no flight or tail feathers, and resembled in appearance the Budgerigars that most of us have been unlucky enough to breed sometimes, with what is known as " French moult ".

I kept the bird in a small cage, and fed him on bread and milk and sugar (Dr. Allinson's food being unobtainable in Australia), and he thrived amazingly, but has never grown tail or flight feathers.

He was kept hanging under the grape vines close to my talking Amazon—the only two birds I have in small cages.

The Amazon's cage is 5 feet long, 4 feet high, and 3 feet wide, so he can move about and get some exercise.

I never knew that these small Lorikeets could talk, but this one has picked up a few words from the Amazon, and says: " Hello boy," " Hello cocky boy," and " How are you," in a very gruff voice, but clearly enough to be understood.

As he seemed lonely, I put a hen of the same species in with him. She was always getting out of her aviary somehow, and I never discovered how she got out. The daily catching of her became a nuisance, so I put her in with the lonely one as a punishment. He bosses her around, and makes amazing noises that are not Lorikeet sounds.

I had heard that French moult does occur in the natural state, but this is my first personal experience of it.

The bird is $2\frac{1}{2}$ years old, now, so I can see no reason to hope that he will ever grow feathers. He was very tame, and I used to carry him round perched on my finger, and show him all the other Parrots.

[A remarkable case of what appears to have been the condition known as " French moult " occurred in wild Red-rumped Parrakeets in the Adelaide district some forty-five years ago, as recorded by Mr. Edwin Ashby, as follows, in *The Emu* for April, 1907, and referred to in this Magazine in June of that year. " In the neighbourhood of the Adelaide Hills the Red-rumped Grass Parrakeet (*Psephotus hæmatonotus*) was up till the years 1887–8, one of the commonest representatives of the family *Psittacidæ*. One of the early settlers in the Mount Barker district, who settled there in 1839, says that they were most numerous in that neighbourhood until the years named. I can endorse this as regards the years 1885 and 1886, when I first visited the Colony. In the years 1887–8, a disease, if such it

can be called, attacked the species. When the birds moulted they did not get their feathers again. I caught a number of them, and they appeared to be quite healthy, except being destitute of feathers. I conclude that the practical extermination of this species, as far as the Adelaide Hills were concerned, was due to their falling an easy prey to predaceous animals. So complete was the destruction that neither my friends nor myself observed the species in the Mount Barker district for several years."—ED.]

BIRDS AND VITAMINS

By W. L. ENGLISH, M.B.

I trust that no one will be disappointed. The title might suggest that something is known about birds and vitamins, but one searches the literature and finds only a few references. In Miss Browning's monograph, *The Vitamins*, the word bird does not appear in the index. There is something still to be learnt in this respect. The classical experiments on polished rice and polyneuritis in Pigeons are mentioned.

Some time ago a lady remarked: "Doctor, I will never see you again without being reminded of a monkey." This was not a reference to my habits or appearance, at least, I think not, but to the fact that I keep forty to fifty of the more delicate monkeys under observation. A knowledge of vitamins is necessary, else the monkeys surely die. It is illegal to try any experiment in feeding, in which any living thing is deprived of something necessary to its comfort. It is not illegal, as we do here, to bring dying marmosets and monkeys back to life, using the skill and knowledge which we possess. It is miraculous to see a dying marmoset improve under violet-ray and vitamin treatment. The cure is certain. The complaint is rickets.

Marmosets, especially the Pigmy variety, always remind me of birds, hence this article to stimulate the interest of aviculturists in the subject.

What are vitamins? Vitamins represent the pounds, shillings, and pence of existence. We cannot live on money, but in a complex civilization we cannot live without, even in the midst of apparent plenty. Similarly a complex organism such as a bird or animal cannot live even in the midst of apparent plenty without these accessories to food.

Vitamins can only so far be recognized by their absence. We can tell that something is absent in certain dietaries, since the animal

or bird suffers in health. The addition of the appropriate vitamin restores the sufferer.

I suggest an instance of vitamin-activity of interest to aviculturists.

Lime salts with vitamin D are necessary to a bird's existence. Lime salts (calcium) are necessary for the general mechanism, for heart-beats, bone-growth, and feather-growth, for the requirements of the growing embryo, and for the formation of egg-shell. Now, it is a well-known fact that birds whose young are hatched in a developed condition have thick egg-shells, while birds whose young are hatched undeveloped have thin egg-shells. Necessarily, birds which must fend for themselves on hatching have sturdy legs, feathers, beak, etc. The growing embryo absorbs lime from the shell during incubation, to form bones, feathers, and beak, the shell gets more fragile, the bird breaks through and runs off.

In the nest, with naked and helpless young, lime salts are supplied by the parents with food, after hatching. It was thought that the thick shell was a protection, and it is ; it is a protection against a shortage of lime salts, which means rickety, undeveloped young.

Science means knowledge. It is a scientific or known fact that this process only takes place in the presence of vitamin D. The embryo obtains this necessary vitamin D from the mother bird.

Apply this knowledge to "soft eggs". The mother bird needs vitamin D and lime salts for her own use ; if she is short of either the embryo must go short and the embryo lacks the hard shell necessary for its existence.

Vitamin D is necessary for the assimilation of calcium, and all the lime salts in the world, whether in oats or anything else, will not prevent harm to the organism if vitamin D be absent.

Rickets is a defective calcium metabolism, caused by the absence of vitamin D. But, and it is a big but for Aviculturists, birds and animals can manufacture their own vitamin D in their skin-coverings of hairs or feathers under the influence of sunlight or the ultra-violet ray.

Vitamin D and Tuberculosis

Generally nature's method of protection against the bacillus is to enclose the diseased area in a calcareous mass of lime salts. During

the moult and when breeding, when calcium metabolism is at its highest, this calcareous protection, if vitamin D and calcium are not balanced, may be withdrawn and the disease progresses unfavourably. This explains perhaps the harmful effect of too much sunlight on certain birds. Too much sunlight or ultra-violet ray may actually precipitate a fatal attack. I blame the rapid dissolution of a Dusky Parrot to my misguided efforts with a mercury-vapour lamp. *Post mortem* examination showed this bird was tuberculous.

From theoretical conclusions I should predict that there is some relation of vitamin D to " suppressed moult " in birds.

Rickets

The problem of rickets is complicated by the fact that certain grains, notably oats, contain a rachito-genic principle. A diet of oats can actually cause rickets, which makes one wonder why a prominent aviculturist actually recommends oats for Parrot-like birds. Rats develop rickets when fed on an exclusive diet of oats, or yellow peas, or wheat, or rye.

Sterility

Pigeons are sterile with a vitamin B deficiency, and probably in a vitamin A deficiency.

Absence of vitamin E causes re-absorption of the embryo after impregnation has taken place.

Occurrence of Vitamins

Generally vitamins occur in the most actively growing tissues of plants, formed under the influence of sunlight.

Young lettuce and cabbage-leaves contain all the vitamins. Lettuce is especially rich in the anti-sterility vitamin E. In a wild state birds live on growing shoots and buds, or on some insect or bird or animal which lives on these things. Vitamin D can be formed in its feathers by light. The vitamin problem is complicated by the individual animal or bird. A prominent authority has said to me : " It is not so much a question of giving a balanced diet as of giving the animal something which it will eat." Further, one must not expect

immediate results from replacing a vitamin deficiency. There is invariably a latent period of three weeks.

During this latent period the animal or bird may die although amply supplied. In birds this improvement might be deferred to the next moult.

It is probable that birds can manufacture the other vitamins in their skin, as well as vitamin D.

Clear eggs are due to a vitamin A or vitamin B deficiency, mostly, or vitamin E.

The whole subject bristles with difficulties, like the Echidna at the Zoo which should lay eggs; it overwhelms one. We do not lose any marmosets now. I wish I could say the same of our birds.

Can we improve the health of delicate Softbills by feeding meal-worms on vitamin-rich substances? The experiment might be tried with dried lettuce and cabbage-leaves, yeast, carrot, and cod-liver oil mixed with meal.

FOREIGN BIRDS AT THE CRYSTAL PALACE

The annual exhibition of Cage Birds was this year held at the Crystal Palace from 4th to 6th February, and was conducted by the officials of the Palace. Mr. S. A. Legg acted as secretary and show manager, and is to be heartily congratulated on the success of the undertaking. The Foreign Bird Section was staged in the large dining-hall, a most happy arrangement, as the heating and lighting were both excellent. Numerically, the show was not quite up to last year, though in quality it left nothing to be desired.

The Parrot classes suffered from the continuance of the regulations prohibiting the importation of these birds, which might safely now be cancelled or modified.

In the class for LORIES, LORIKEETS, AND HANGING PARROTS, Miss Horne secured first prize with a beautiful pair of Worcester's Hanging Parrots, Mr. A. Wilson taking second with a good Purple-capped Lory.

In the LOVEBIRD AND PARROTLET class, Mr. Whitley obtained first place with a pair of Green Parrotlets (*Forpus viridissimus*) which, I understand, bred successfully last summer. Mr. Whitley's pair of Abyssinian Lovebirds were second, a very good Red-faced shown by Mr. Frostick third, and a pair of Fischers, belonging to Mr. Rigby, fourth.

Amongst the COMMONER PARRAKEETS, Mr. Whitley won first with a Rosella, and Mrs. Beauchamp second with a Tui; while in the CONURES, Mr. Whitley showed a very fine Wagler's Conure, a Patagonian, and a Red-headed which obtained first, second, and third respectively. Mr. Whitley also took the

first three prizes in the class for KINGS, CRIMSON-WINGS, BROADTAILS, AND ROCK-PEPLARS, with pairs of Kings, Crimson-wings, and a Yellow-collared, Captain Liddell-Grainger obtaining fourth with a good pair of Rock-peplars.

In the "ALL OTHER SPECIES" class, Mr. Whitley again captured all the prizes with a fine team consisting of his splendid old cock Queen Alexandra, a beautiful Red-shining, a Malaccan hen, and a Pileated or Red-capped, while Mr. R. N. Knight showed a very nice Prince Lucien Conure, Mr. C. T. Maxwell a pair of Browns, and Captain Liddell-Grainger a Blue Bonnet.

In the class for the SHORT-TAILED PARROTS, curiously enough there was not a single Grey. Mr. Whitley was again to the fore with, first a fine Salvin's Amazon, second a very fine Spectacled Amazon, and fourth, a Yellow-naped, Mr. Maxwell coming third with a charming pair of Meyer's.

Then came the WHITE COCKATOOS, amongst which the three sent by Mr. Whitley, a Philippine Red-vented (*K. hæmaturopygia*), a White-crested (*K. alba*), and a Lesser Sulphur-crest, obtained the first three places in the order named.

The next class was for "ALL OTHER SPECIES OF COCKATOOS AND MACAWS", and it contained five entries, which were placed as follows:—First, a Palm Cockatoo (Whitley); second, ditto (Maxwell); third, Lear's Macaw (Whitley); fourth, Banksian (Whitley); and v.h.c., Spix Macaw (Maxwell).

The class for "ALL OTHER SPECIES OF PARROTS" contained ten entries. Mr. Whitley again took first, second, and third prizes with a Red-capped, pair of Duskey, and a pair of Blue-rumped Parrots (*Psittinus incertus*). Mr. Maxwell took fourth with a nice Rüppell's. Mr. Whitley also sent a good Aubrey's, and Mr. L. A. Wilkins a good pair of Hawk-headed Parrots.

Then came the class for HYBRIDS AND ABNORMALLY COLOURED BIRDS, and in this Mr. Whitley's cinnamon coloured Piping Crow, a lovely specimen, took first prize, his hybrid Crimson-wing × Rock-peplar second, and third, his most interesting hybrid Rose-breasted and Lesser Sulphur-crested Cockatoo, a striking bird of a silver-grey colour with rusty patches on its cheeks, rusty-yellow tinge over breast and on the throat and collar, and yellow under the wings. The fourth prize went to Mr. H. T. King for a pair of Bengalese × Silverbills.

A pair of Blue Masked Lovebirds, bred in the Zoological Gardens, were exhibited here, but not for competition.

The next class was for QUAILS, RAILS, PHEASANTS, PARTRIDGES, DOVES, DUCKS, AND WADERS. There were no Ducks or Pheasants, but Mr. Whitley sent a fine Black-headed Partridge (*Alectoris melanocephala*) which took first prize, a Black Rail third, and a Bartlett's Bleeding-heart Pigeon fourth, while Mr. G. Beever took second with a Scallop-necked Pigeon (*C. speciosa*). There were two pairs of Chinese Painted Quails.

There was a class for ZEBRA-FINCHES with ten entries, while the WAXBILLS AND MANNIKINS wers strongly represented in three classes, but call for no comment.

There were sixteen entries in the class for the AUSTRALIAN FINCHES AND QUAIL FINCHES, the most interesting perhaps being Bicheno's and Ringed Finches, the former with the white rump and the latter with black, both forms being represented. It was also interesting to compare the two forms of the Long-tailed Grassfinch, the Yellow-billed (*P. acuticauda*) and the Red-billed (*P. a. hecki*). Captain Liddell-Grainger took first prize with a pair of Ringed Finches, Mr. Whitley second with Cherry Finches, and third

with Heck's Long-tails, while Mr. John Frostick's nice pair of Diamond Finches came fourth.

There were seven entries in the class for GOULDIAN FINCHES, a brilliant array, while the next class was for the RARER GRASSFINCHES, WAXBILLS, AND OTHERS not previously mentioned and contained twenty entries. Mr. Whitley came first and second with a Peale's Parrot Finch and pair of Rufous-tailed Waxbills, Mr. J. Walsh's Violet-eared Waxbill coming third, and a Black-cheeked Waxbill shown by Mr. Abdel Khalek fourth. Mr. Crama's Dufresne's Waxbills obtained v.h.c., Mr. Beauchamp's Violet-ears h.c., and a wonderful pair of Pintail Nonpareils sent by Mrs. Goddard only c. I think these last should have been nearer the top.

The next class was for BUNTINGS, RED-CRESTED and PILEATED FINCHES, Seed-eaters, *Sporophila*, and others. It was a fine class of twenty-five entries, but one bird, catalogued as a Bunting, was one of the Seed-eating Tanagers (*Buarremon*). Mr. P. W. Beauchamp took first prize with a Golden-breasted Bunting, the second going to Dr. Macklin's Red-crested Finches, third to Mr. Beauchamp's *Junco*, and fourth to Mr. Frostick's Rainbow Bunting. Mr. J. R. Nicholson obtained v.h.c. with a nice Lazuli Bunting.

The class for CARDINALS and GROSBEAKS contained twenty-one entries, first and second going to Captain Liddell-Grainger for his beautiful pairs of the rare Black-throated and Black-cheeked Cardinals. Third prize went to Mr. Beauchamp for a pair of large Blue Grosbeaks, and fourth to Mr. Whitley for a Small Blue Grosbeak.

There was nothing startling in the class for WEAVERS and WHYDAHS, but much of interest in the section for SOFTBILLS which followed. The first three classes in this section were for TANAGERS and SUGAR BIRDS. The first of these for BLUE, SCARLET, MAROON, ARCHBISHOP, SUPERB, TRICOLOR, and a few others. Mr. Maxwell took first with a very fine Superb, Mr. Whitley second with an Archbishop, Mr. Allison third with another Superb, and Mr. Lawrie fourth with a Tricolor.

In the class for ALL OTHER TANAGERS (not exceeding a Superb), SUGAR BIRDS, QUITS, AND ZOSTEROPS, Mr. Maxwell secured first prize with a beautiful Purple Sugarbird, Captain Liddell-Grainger second with a rare Tanager (*Tanagrella ?*), third with another Purple, and fourth with a Spotted Emerald Tanager. This was a splendid class with nineteen entries. The class for ALL OTHERS LARGER THAN A SUPERB contained only five entries. First a rare Red and Black Tanager belonging to Mr. Maxwell, who also took second with a fine Magpie Tanager. Third prize went to Mr. L. A. Wilkins, for an Olive and Blue and fourth to Mr. Whitley for Black-throated Saltator.

In the SUNBIRD CLASS there was only one entry, a fine Scarlet-breasted shown by Mr. Maxwell.

The ROBIN CLASS contained twelve entries, all Pekins and Blues, and that for SHAMAS, DHYALS, AND MOCKING BIRDS, eight entries, the first prize going to a fine pair of Mocking Birds shown by Mr. Whitley.

In the GLOSSY STARLING CLASS, Mr. Whitley obtained first, second, and fourth prizes with a fine Crowned Starling, a Long-tailed Glossy, and a Burchell's respectively, Mr. Maxwell receiving third prize with a beautiful pair of Royal Starlings.

The class for MYNAHS and STARLINGS (other than Glossy), THRUSHES, BABBLERS, etc., contained fourteen entries. Mr. Whitley obtained first,

third, and fourth prizes, first, a rare Ground Thrush, *Geokichla interpres*, third, a Temminck's Whistling Thrush, and fourth, a Finch-billed Bulbul. Mr. Webster obtained the second prize with a Hardwick's Fruit-sucker.

In the HANGNEST class, Mr. L. H. Sutton secured first prize with a Yellow-crowned Hangnest. There were seven entries. Mr. H. E. Gardner took second, and Mr. Whitley third and fourth prizes, but unfortunately my notes fail me here as to the species shown.

The class for CROWS, PIPING CROWS, JAYS, BARBETS, and MOTMOTS contained six entries, the first prize going to Mr. Whitley for a good Motmot, Mr. L. A. Wilkins taking second with a fine Swainson's Jay, third going to a Golden-fronted Barbet belonging to Mr. Maxwell, and fourth to a Blue-cheeked Barbet sent by Captain Liddell-Grainger.

Class 297 contained five entries, all BIRDS OF PARADISE. Mr. Whitley sent a wonderful trio consisting of a Rothschild's, Wallace's, and a New Guinea Rifle-bird—awarded the first three prizes, while Mr. C. T. Maxwell took fourth and v.h.c. with a lovely Lesser Bird and a Wilson's.

The class for TOUCANS, BOWER BIRDS, BELL BIRDS, etc., contained seven entries, the first and second prizes going to two Toco Toucans belonging to Messrs. Whitley and Maxwell. Third to Mr. Whitley for a Naked-throated Bell Bird, and fourth to Mr. F. Hopkins for an Ariel Toucan.

The last class was for ALL OTHER SPECIES, the most noteworthy exhibits being two entries of Pittas beautifully shown in large cages, each with a carpet of saxifrage. They were a Malaccan Pitta and a pair of Blue-tailed Pittas shown by Mr. Whitley, and they secured the two premier prizes. Mr. Maxwell took third with his lovely Mexican Woodpecker, and fourth with a Fairy Blue Bird. Mr. Whitley was awarded v.h.c. for a Coucal.

D. S-S.

REVIEW

"THE BUDGERIGAR IN CAPTIVITY"

It is really rather a tragedy that it is becoming difficult, and will probably soon be impossible, to obtain a pure Green Budgerigar of the wild type, that is not liable, when it breeds, to produce birds of some other colour, but so it is that within the space of a very few years a large number of colour variations have been evolved, and so keen on these have Budgerigar fanciers become that they are tending to entirely neglect the wild form. Some of these varieties are certainly extremely beautiful, and their appearance has caused the Budgerigar to be one of the most popular of cage and aviary birds as it well deserves to be. Books on the management and breeding of these Parrakeets

have appeared, the latest of these from the pen of Mr. Denys Weston, than whom no one that we know of is better suited for the task, for he has studied Budgerigars and their colour-breeding for many years past. On the subject of breeding he quite rightly advocates the outdoor aviary with a good dry shelter, and not too much glass, but we disagree with his statement that " what glass is used should be Vita-glass ", which, in our opinion, is no better and no worse than any other glass for this purpose, because no advantage is gained by attempting to admit more ultra-violet rays to the shelter when the birds can fly in the open flight and their nestlings are hidden in boxes, so the additional expense may well be saved. Winter breeding the author rightly, we think, discourages, but we should like to know his authority for stating that " Swallows migrate in sex flocks " ; and if they did so, that does not prove that Budgerigars do the same. And what proof has he that wild Budgerigars have but two nests in the year ? Greene said so, but without quoting his authority. Campbell tells us that the breeding months are from August to December, but then he mentions young in July, and further, that in the Interior " they sometimes breed during the winter ". But these are minor points, and we can very heartily recommend Mr. Weston's book as a sound and practical guide to the successful keeping, breeding, and exhibition of Budgerigars, the treatment of their ailments, and their correct mating to produce the various colours desired. It is, attractively produced, with a very nice coloured illustration on the cover and, at the price, 2*s*., it is within the reach of everybody. It is published by *Cage Birds*, 4 Carmelite Street, E.C. 4.

CORRESPONDENCE, NOTES, ETC.

I was very much interested in E. J. Boosey's article on the Blue-winged Grass Parrakeet, and I see that he mentions about an eye disease that is easily contracted by these birds. Whilst my experience with Parrakeets is practically nil, I should like Mr. Boosey to describe this disease. Eye disease called Xeropthalmia, is very rampant in various species of Softbills, and fruit-eating species, and is

caused by a deficiency in the food, and I am wondering if it is the same complaint in the Parrots, etc. If so, I should be pleased to have any bird suffering from it sent to me, as in all probability I could bring about a cure. I have cured many hundreds of Softbills of this complaint.

P. H. Hastings.

Old Engine House,
Milton, Portsmouth.

THE BLUE-WINGED GRASS PARRAKEET

Lord Tavistock considers the plate of this species, which appeared in our last number, somewhat untrue to life. "The green," he says, "is too rich and not sufficiently olivaceous and suggests the plumage of the Orange-bellied Grass Parrakeet," and "a hen Blue-wing never has an orange abdomen; her wing-patch is as wide as the male's, though less vivid and flecked with green, and the yellowish markings round the eyes are quite well developed".

ORANGE WEAVERS

Mrs. Irvine points out a mistake in her letter on p. 43, sixth line from the bottom, should read "He would go there calling her to him".

BREEDING MEALWORMS

If any member of the Society could enlighten me as to the best method of breeding mealworms I would be more than grateful. It is impossible to buy them in Australia, and my own attempts at raising them have been almost a complete failure as at the best of times I only have enough to feed half a dozen birds, and then only as a supplement to their ordinary diet.

R. R. Minchin.

Adelaide, S.A.

ZEBRA FINCHES IN THE WILD STATE

In a very interesting paper, published in the January number of *The Emu*, Mr. W. D. K. MacGillivray describes an expedition to a spot in the north-west corner of New South Wales to study the habits of the Flock Pigeon (*Histriophaps histrionica*), a species that has recently reappeared in large numbers after many years' absence. We shall hope to refer, in our next number, to his success in watching the Pigeons, but his note on some of his companions at his camp may be quoted here :—

" There were two cane grass sheds, remains of the old homestead, near by our camp ; these had been taken possession of by Chestnut-eared Finches, which had numerous nests in the roof and sides at all stages of construction, and others containing eggs or young at all stages of incubation or growth respectively. The Finches were also nesting in the framework of an old dray. A long, low sandhill, about a mile out on the plain, and which was topped by stunted hop-bushes needle-bushes, a few mulgas, dead finish, and one whitewood, had as its only bird inhabitants numbers of Chestnut-eared Finches and a few Crows. The Finches were nesting everywhere. They increase enormously in a favourable season, like the present, and die in thousands in a time of drought, often by sticking to a drying waterhole till all the water has gone, and then not being able to reach any other water."



Splendid Grass Parrakeet.
Neophema splendida.

THE

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THE SPLENDID GRASS-PARRAKEET

In my note on *Neophema splendida* in the February number of this Journal I referred to a pair acquired by the Zoological Society in 1871 and stated that "from these a young bird was hatched the following year, though whether this was reared to maturity or not I have been unable to discover". Further research has shown that the printed records are incorrect, and it is almost certain that the species *has never bred in captivity!* On page 328 of the eighth edition of the Zoological Society's official *List of Vertebrated Animals*, published in 1883, appears the following entry :—

"*Euphema splendida*, Gould. Splendid Grass Parrakeet.
Hab. South Australia.
a. Male ; *b.* Female. Purchased, 30th January, 1871.
c. Purchased, 21st June, 1872.
d. Hatched in the Gardens, 21st July, 1872."

I have looked up the daily occurrence records from which the *List of Vertebrates* was compiled and I find that on 21st June, 1872, this species *is not mentioned*, whereas on 21st July, 1872, the following entry occurs : "1 Splendid Grass Parrakeet, *Euphema splendida*, purchased of Mr. A. Jamrach, 20*s*.," so there can be little doubt that all the authors who have mentioned this species since the 1883 *List* was printed—Russ, Butler, Neunzig, Tavistock, Hopkinson, and myself, have been led astray by an obvious clerical error in the compilation of that *List*.

The Splendid or Red-breasted Parrakeet was apparently never a common species anywhere and very few specimens have reached Europe alive, though to read Greene's *Parrots in Captivity* one would imagine that, at the time that was written (1884) it was by no means impossible to obtain specimens if the dealers were given adequate inducement to obtain it, for he says, "the Splendid Parrakeet is not a difficult bird to keep, so that the £10 or so given for him is much more safely invested than if risked upon a couple of pairs of Paradiseas or Many-coloured Parrakeets." By the way he writes one would think he had kept the species, but we may be quite sure he never had the opportunity to do so, and probably only saw those at the Zoo.

Gedney, whose *Foreign Cage Birds* is undated (probably about 1876), was doubtless nearly correct when he wrote of this species: "They are very rarely met with even in Australia, and no specimen has ever reached the hands of an English dealer," though we know that the Zoological Society's specimens came from dealers.

A note in the *Proceedings* of 1871 referring to the Zoo's original pair is as follows (page 102):—

"A pair of the Splendid Grass-Parrakeet (*Euphema splendida*, Gould, B. of Aust. v, pl. 42). These are, I believe, the first examples of this beautiful Grass-Parrakeet ever brought alive to this country. We purchased them on 30th January from a London dealer, who states that they were received from a vessel coming from Adelaide." The price paid for this pair was £7, and for the single bird from Mr. Jamrach £1! At the present time I suppose a pair of these birds would be worth more like £100.

It is very satisfactory to find that this lovely Parrakeet is probably no rarer now than it has always been and it is much to be hoped that the pair owned by our King, and now in this country in the capable charge of Mrs. Fetherstonhaugh, may be successful in reproducing their kind.

D. Seth-Smith.

GAPES AND ITS TREATMENT

By W. H. Workman

Have any of our members been troubled with this nasty disease amongst their birds, which is caused by a Nematode by the name of *Syngamus trachealis?* If so my experience and the way we cure it may be of use to some reader who like myself has had a few losses. The symptoms are that one notices the affected bird coughing as if it would choke to death. This is caused by one or more of these horrid thread-worms which have made a home in the trachea or windpipe and have settled there to breed. In a short time there will be a family of them and the bird will die from suffocation. We dissected a Californian Quail which died from this worm, finding the worms in the windpipe. My man asked me to get him some " gapes powder " so as to be ready in case of another bird being attacked. Sure enough the next victim was a very fine Pagoda Starling and this is how we treated him with first-class results. We put him in a box cage, covered the front with a stout bag, put some of the gapes powder in a little dish inside the cage. Then we gave the powder two or three vigorous blasts with a bicycle pump till we had what we call in Ireland " a proper stour ", which means a thick fog of powder in the cage. We kept the bag down and allowed the bird to breathe this atmosphere for about fifteen minutes for about four days, then gave a dose alternate days, and in a little over a week the bird was completely cured and we put it back with its mates in the aviary. The powder is very fine, light grey in colour, and smells strongly of naphthalene: it is called " Kuride " and seems to work well.

So much for the cure; now as regards prevention. Poultry keepers when they get gapes amongst their stock shift their pens to fresh ground, but this is impossible with fixed aviaries, so one has to resort to other methods. I have very thoroughly limed my ground with well-slaked, in fact dead, quicklime and this so far seems to have been quite effective. I also understand that a sprinkling of common salt is another good preventative; it could be sowed on with a little dry sand as one does weed killers.

One theory regarding the life history of these Nematodes is that

they first pass into the earth, then part of the cycle is passed in the earthworms which are swallowed by the birds. They then make their way from the intestines to the trachea. If this is the case, we should be watchful in the use of earthworms when feeding them to Waders, etc., in case they come from bad ground and transmit the disease.

THE HARLEQUIN BRONZEWING PIGEON

The *Emu* for January, 1932, contains a coloured plate of the Flock Pigeon or Harlequin Bronzewing (*Histriophaps histrionica*), a very beautiful ground Pigeon that was once to be met with in countless numbers at certain seasons in the Northern and Central parts of Australia, but for many years past its numbers have been decreasing as a result of sheep farming and the ease with which it may be shot during its regular visits to some favourite drinking pool.

This is one of the most beautiful of the Australian Pigeons, its upper surface being sandy brown, its breast and abdomen deep violet grey. The primary features black tipped with white ; the secondaries edged with metallic green and purple forming a speculum, as in the other Bronzewings. The male has the forehead white and most of the head and throat black with two lines of white on the side of the head, and a large band of white on the lower throat. The female is easily distinguished by the absence of black on the head which is buff, the throat being blackish. The legs and feet are red.

It is a purely terrestrial species, never perching upon trees and nesting upon the ground beneath a tussock or bush.

Very few examples appear to have been imported into this country and I can only remember seeing one living example, but in 1865 three specimens were presented to the Zoological Society of London by the Acclimatization Society of Victoria, and there is a record of these having bred in the Gardens the following year.

It is very interesting to notice the way in which certain Australian species that were thought to have become extinct, or to be on the verge of becoming so, have a way of reappearing when conditions become more favourable to their existence, such as the cessation of

a long period of drought. And this seems to have happened in the case of the Harlequin Bronzewing, for in a very interesting article, accompanying the coloured plate above referred to, Mr. W. D. K. MacGillivray tells of the appearance of vast numbers of these birds. He quotes a note from Mr. Ian MacCulloch who, writing from Central Queensland in March, 1931, remarks: "At present there must be twenty thousand Flock Pigeons watering at the tank where I am camped. At another tank on this property about twenty miles from here there must be four or five times as many birds as there are here. I first noticed a small flock of Pigeons about twelve months ago, and after some heavy rains in May last we had a wonderful growth of grass and herbage. I noticed the birds were nesting in July and up till September. They did not appear to be greatly worried by the sheep as they nested in the paddocks in which the sheep were running.

"It is a fine sight to see the flock here come to water. They light on the surface of the water, drink, and fly again, not troubled in any way by wet feathers. They also land on the embankment and approach the water like a regiment of soldiers. The front line drink and fly, their places are taken by the next line, and so on till all are watered."

It will be observed that the habits of these Pigeons very closely resemble those of Sand Grouse. Subsequently Mr. MacGillivray had an opportunity of watching some of these Pigeons himself, which appeared on a limited area in the north-west corner of New South Wales after an interval of over forty years. Camping near an old dam, situated in the centre of 6 square miles of Mitchell Grass, "the birds started to arrive," he remarks, "at 4.40 p.m., in small flocks of from ten to twenty, the intervals between the arrivals of the flocks shortening as time went on. The earlier flocks settled in the grass two hundred yards or more from the water. Later flocks became bolder, and circled over the water, but would not settle at first, no doubt from having been shot at. Finally, one or two dropped near the edge, walked into the water, drank rapidly, and left. Other and larger flocks kept coming in from all directions. Many settled on the edge, but several alighted on the deep water, folded their wings, immersed their heads completely, and had a good drink. They found no difficulty in rising from the surface of the water and flying off."

The habit of actually settling on the water like Ducks is of great interest, though it had been recorded previously in this as well as in some other species.

Mr. MacGillivray continues : " A cold wind blew during the night, and we were glad to be up at dawn to light the fire and prepare breakfast. The earliest arrivals were a few Galahs which came silently to the water, and were gone before it was properly light ; then a flock of Budgerigars, Chestnut-eared Finches, and a few Little Crows. The Pigeons started to come in at a quarter to eight, at first singly, then in pairs, quickly followed by flocks of from five to thirty. They kept coming for over half an hour, after which they became fewer, and all had finished and gone by 9 a.m."

D. S-S.

PHEASANTS AT LOW HALL, KIRBY MOORSIDE, YORKSHIRE

By Captain C. Scott-Hopkins

I have been asked by the editor of the Avicultural Magazine to give an account of my collection of Fancy Pheasants, which I think I can safely say, is the finest in Great Britain. There are over thirty species of pheasants which can be kept in captivity. Some are beyond the reach of most Pheasant lovers as the prices are very high. I have kept most kinds, with the exception of about half a dozen. At the present moment I have about twenty-five different species including some rare birds. I think many would-be fanciers of these beautiful birds imagine that because they come from tropical countries they must be delicate, and they are afraid to keep them. This is by no means the case. There is only one kind of Pheasant that I have found too delicate for this climate (although it might thrive better in the South of England), and that is the beautiful Palawan Peacock Pheasant. I have had two pairs of these birds bought from Mr. Rogers, of Liverpool, but they did not live long. They were, of course, imported birds. It is only quite recently that they have been imported into Europe and no home-bred birds are available. I sincerely hope that it will

be found possible to keep and breed these charming Pheasants in this country. They are certainly the prettiest of the Peacock Pheasants. Many kinds of Pheasants can be bought quite cheaply and anyone desiring to start this fascinating hobby should begin with a pair each of Golden, Silver, Lady Amherst, and Reeves. A cheque for from £10 to £12 would buy you a pair of each of these Pheasants, providing you do not buy them from dealers. There are none more beautiful than these four species, they are very hardy and easy to breed, and they are moreover easy to sell. When keeping the Lady Amherst it is always advisable to give the male bird at least two hens and preferably three, as he is a very pugnacious gentleman when spring-time comes round. Some Amherst cocks will kill nearly every hen given to them, whilst others are just as docile. Don't let this deter anyone from keeping these birds as, in my opinion, they are the most beautiful and graceful of all Pheasants. I always endeavour to keep a good selection of them, but beware of hybrids! I should think that 85 per cent of Amhersts in this country have Golden blood in them. It is surprising how many people have shown me what they really thought were pure Amhersts, when they were very far from pure. When I started keeping Pheasants I was "had" in the same way!

You are safe with the Golden, Silver, and Reeves. To the beginner who is ready to put his hand a little deeper in his pocket I would recommend the Swinhoe, about £12 a pair, very beautiful and hardy. The pure Mongolian is a fine bird, and difficult to beat for colour and is quite cheap. The Monaul or Impeyan Pheasant is a magnificent bird and is always popular and very striking. To see this bird with the sun shining on his back is a wonderful sight. He is very hardy, and his price should be £20 to £22 a pair.

I have three species of Tragopans—Satyr, Cabots, and Temmincks. The Tragopan Pheasant is my favourite. The male bird is superb. These Pheasants have one great attraction to me, and that is that they become remarkably tame in a very short time, especially the Satyr. Unfortunately they are not easy to breed, as I have found it very difficult to get fertile eggs. The price of these Pheasants should be about £25 a pair.

Freshly imported birds can be bought for about £6 apiece, and this

is very often the only way you can procure these birds, as there are very few bred in this country.

There are four species of Fireback Pheasants kept in captivity, three of which I have, the Siamese, the Bornean, and the Vieillot. The Firebacks are somewhat different in appearance to most Pheasants. The tail is rounded and not long and they are blessed with enormous spurs, especially the Vieillot. They are hardy and beautiful but not easy to rear. They are late layers. The price should be about £25 a pair.

The Peacock Pheasants (*Polyplectron*) are most attractive little birds and very hardy in spite of the fact that they come from a very hot country. There are three or four species kept in aviaries, two of which I have, namely, the Chinquis and the Germain. The former is the brightest in colour. They are delightful little birds to keep and soon become quite tame. These birds will incubate their own eggs and are splendid mothers. Don't let any other Pheasants come near, as they are very quarrelsome and will kill any bird their own size. Last summer a pair of young Chinquis got into an aviary full of young Goldens and Amhersts and two young Edwards: they killed seven, including one Edward worth £20. One has to put up with such misfortunes at times. Rats have killed me pounds' worth of birds. Rat-proof aviaries are worth every penny they cost, but be careful they *are* rat-proof!

Peacock Pheasants should cost about £15 a pair, except the two rare kinds. Edwards and Imperials are somewhat similar in appearance, the latter being the larger. Both are of a lovely blue, the Edwards cock having a little white on the head. Edwards are easy to rear. My pair of Imperials did not lay last year, but I am hoping to get some eggs this year. Both these are very expensive and the Imperial is one of the rarest Pheasants known to science. Edwards should be about £40 a pair and Imperials about £70. The Elliot Pheasant I can strongly recommend for several reasons. He is a fine upstanding bird with beautiful colouring and very hardy. They are good layers and early layers. The chicks are easy to rear, and are very independent little fellows, finding their own food at a very early age. They are quick growers.

Elliots are easy to sell, especially in America. The male bird gets his full plumage the first year. The price is £20 a pair. Many varieties of Pheasants do not attain full plumage until the second moult. This is rather a drawback, as it means waiting a whole year before you see them in their full beauty. Goldens, Amhersts, Silvers, Tragopans, Monauls, and others all take a year before they are in full plumage. The Argus Pheasant is a beautiful bird and the largest Pheasant known. They are not very hardy, and it is very difficult to get fertile eggs from them. There are three species of Argus kept in aviaries. They are all rather expensive, especially the Rheinhart (*Rheinardia ocellata*), which may cost £60 or more a pair. The Mikado Pheasant is another rare species. I am fortunate to possess two pairs of these birds, and hope to breed some this year. They are good layers, I believe, are hardy, and easy to rear. The predominant colour is dark blue with white spots. The hens are similar to most Pheasant hens in that they are dull-coloured compared to their husbands. These birds are worth about £60 a pair.

The Sœmmerring Pheasant is a beautiful bird, and distinctly rare and difficult to buy. The males are very pugnacious and often kill their hens. I have given my bird three wives, so I hope he will be content and not be too rough with them. I was not able to get any fertile eggs from them last year.

I have not mentioned all the different Pheasants I have or have had, as it would take up too much space. I will give a list of the Pheasants I have now actually in stock at the end of my article. Fancy Pheasants are very inexpensive to keep, they eat less than poultry. The best corn is wheat all the year round, with a little crushed maize and a little dari. I feed mine twice a day, but I know some people think once a day sufficient. I leave it at that. I think a little meal at this time of year is beneficial and helps their fertility. *Plenty* of green food all through the year is absolutely essential. Cabbage in the winter, dandelions and cut grass in the summer. Fresh water every day, not every other day. Keep the water tins absolutely clean, and a little disinfectant in the water once a week is a good thing. Keep your aviaries scrupulously clean, and in the moulting season (which begins about July–August) pick up all feathers. In the breeding season, be

sure and gather all eggs every morning or as soon as you see them, in case any of your birds get into that dreadful habit of sucking their eggs. Be sure and have plenty of cover (fir branches, etc.) in the corners of your aviaries in the breeding season, so that the hens can seek refuge from the cocks, otherwise the mortality amongst some of your hens will be terrible. This is *most important* with every kind of Pheasant, except the Tragopan which is a real gentleman and I have never known him molest his wife. She does not nest on the ground, as every other Pheasant does.

I do hope this short account of my Pheasants will encourage others to go in for this delightful hobby. Don't get downhearted if you have a bad year now and then. Keep plodding on and your patience will be well rewarded. Last summer was the worst I ever experienced. I am hoping and expecting much better luck this summer. I shall be very pleased to give any information and help to would-be Pheasant keepers, and I shall be delighted to show bird lovers my collection. I take this opportunity of thanking the editor, Mr. Seth-Smith, for allowing me so much space in the AVICULTURAL MAGAZINE.

The Pheasants now to be seen in my aviaries are the following :—

Golden, *Chrysolophus pictus*, from China.
Amherst, *C. amherstiæ*, from China and Tibet.
Silver, *Gennæus nycthemerus*, from China.
Nepal Kalij, *G. leucomelanus*, from Nepal.
Edwards, *G. edwardsi*, from Annam.
Imperial, *G. imperialis*, from Annam.
Swinhoe's, *G. swinhoii*, from Formosa.
Elliot's, *Calophasis ellioti*, from S.E. China.
Mikado, *C. mikado*, from Formosa.
Bornean Fireback, *Lophura ignita*, from Borneo.
Vieillot's Fireback, *L. rufa*, from Siam.
Siamese Fireback, *Diardigallus diardi*, from Siam.
Old English, *Phasianus colchicus*.
Melanistic, *P. colchicus* mut. *tenebrosus*.
Pure White, *P. colchicus* var.
Mongolian, *P. colchicus mongolicus*, from Mongolia.
Impeyan, *Lophophorus impeyanus*, from Kashmir.

Satyr Tragopan, *Tragopan satyra*, from S.E. Himalayas.
Temminck's Tragopan, *T. temminckii*, from Tibet and China.
Cabot's Tragopan, *T. caboti*, from S.E. China.
Argus, *Argusianus argus*, from Malay States.
Chinquis Peacock Pheasant, *Polyplectron bicalcaratum*, from Burma.
Germain's Peacock Pheasant, *P. germaini*, from Cochin China.
Bulwer's Pheasant, *Lobiphasis bulweri*, from Sarawak.
Reeves, *Syrmaticus reevesi*, from N. and W. China.
Sœmmerring's, *S. sœmmerringii*, from Japan.
Also pair of Vulturine Guinea-fowl and Californian Quails.

CORRESPONDENCE, NOTES, ETC.

NESTING HABITS OF THE RED-FACED LOVEBIRD

In his very excellent *Birds of Tropical West Africa*, of which the second volume is just published, Mr. David Bannerman writes of the breeding habits of *Agapornis pullaria :* " In Sierra Leone Major Scovil found it breeding in a Woodpecker-like hole scooped out from the side of the mud nest of a species of termite which builds in trees. Colonel Thompson corroborates this ' situation ', having many times seen these holes himself. In Cameroon Bates found the same thing, the ants' nest he describes as hard and earthy and firmly attached to the large stem of the *aseng* tree. Big ants inhabited this nest, and savagely attacked a boy who climbed it ; the Lovebirds appeared not to be molested, and are evidently permitted by the ants to rear their brood in peace, the ants successfully warding off intruders ! "

The fact that the Red-faced Lovebird, although it has been known to aviculture from a very remote period, has never been known to breed in captivity, may be accounted for by the absence of suitable nesting sites. Perhaps some aviculturist will try the experiment of constructing an artificial mud ants' nest in a tree and trust that the birds will excuse the absence of the ants !

D. S-S.

HYBRIDS

I notice in the February issue of the AVICULTURAL MAGAZINE a list of hybrids Dr. E. Hopkinson is making. I wonder if he has got any of the following on his list, which I have successfully reared. In each case the cock bird is mentioned first :—

Common Grey Waxbill × St. Helena Waxbill.

Common Grey Waxbill × Orange Cheek Waxbill.

Cape Canary × Green Singing Finch.

Green Singing Finch × Cape Canary.

Yellow-rumped Serin × Border Canary and Roller Canary hen.

Brown Linnet × Cape Canary.

Brown Linnet × Green Singing Finch.

I had a fertile egg from the hybrid Yellow-rumped Serin × Canary, but just as the egg was due to hatch this cock caught a chill and died.

Another interesting cross I had fertile eggs from was a cock Green Singing Finch and a Golden-breasted Waxbill hen. This nest got washed out one night in very heavy rain, and they did not nest again—that was in 1929.

The Common Grey × St. Helena I exhibited at the Crystal Palace in 1929 and 1930.

I also sent the Common Grey × Orange Cheeks, but these died upon arrival at the Show through an oversight after arrival. I have had one of these stuffed—also the Yellow-rumped Serin × Canary—which proved a fertile hybrid.

P. W. TEAGUE.

A TAME ROOK

We spent Christmas at Sidmouth and one day, at breakfast, I saw a boy carrying by the window one of those round greengrocers' baskets, on the edge of which was perched a large Rook. I asked about it, as it looked so unusual and the bird so placid ! and was told it belonged to the chef of the hotel, so I asked if I might see the bird, which I was allowed to do. The chef showed off her pet with much pride, though he was a little " peeved " at being taken from the nice warm kitchen.

However, he let me scratch his head. His name was "Jimmy", and he had been found three and a half years before lying under a tree with a damaged wing and not fully fledged. He was adopted there and then, and has become a great pet; he understands everything that is said to him and has a language of his own. He eats anything that comes his way, and I imagine in a kitchen like that it is a good deal, and is especially fond of chopped up hard-boiled egg, also currants and sultanas, and he knows the cupboard in which these live.

JESSIE N. COLLINSSPLATT.

FOUR QUESTIONS FOR AVICULTURISTS

Three or four years ago I somewhat reluctantly allowed my name to be put up for membership of the Avicultural Society by a friend, and was honoured with election. "Reluctantly" because I did not feel qualified to be a member for, although my interest in birds is strong, I am not as yet in any sense a "fancier". Some time in the future I hope to keep and breed Waterfowl and Waders. In the meantime, as a matter of interest, I would like to ask some member to be so very kind as to answer four questions:—

(1) What is the object of crossing birds (generally, different species of the same genus), i.e. why are people interested in producing hybrids?

(2) How many species of birds have been saved from extinction by aviculturists, i.e. how many species now exist only in the captive state, or in a natural state solely due to aviculture?

(3) How many species of birds, if any, can be said to have been rendered extinct owing to the desires of aviculturists to secure specimens and which, when secured, have not been successfully bred to ensure non-extinction?

(4) Is there any authoritative list of birds so rare in their natural state that by agreement among collectors and others no efforts are made to capture them, alive or dead? Or is it seriously considered that to capture the last ones alive gives the species a better chance of survival?

L. MCCORMICK-GOODHART.

[We shall look forward to answers to the above from other members, but may make the following observations:—

(1) The crossing of different species may serve a definite purpose in proving the relationship of certain birds to one another or the origin of certain forms. For instance the breeding of Pheasants in captivity has shown that the crossing of any two forms of the genus *Phasianus* produces fertile offspring, whereas *Phasianus* mated to any other genus of Pheasant results in sterile hybirds. The crossing of various species of *Agapornis* also produces interesting results. But at the same time it is to be feared that many take up hybrid breeding with no other object than to produce curiosities.

(2) We understand that the Silver Pheasant (*Gennæus nycthemerus*), a common aviary bird, is nearly extinct in the wild state, and the wild Golden Pheasant (*Chrysolophus pictus*) is said to be very rare, while, to turn to Mammals, the American Bison, Mountain Zebra, Blesbok, and Bontebok have been saved from extinction by a life in semi-captivity.

(3) Certainly no species of birds have been rendered extinct owing to the desires of aviculturists to secure specimens.

(4) We know of no such list. ED.]

EYE DISEASES

In reply to Mr. Hastings' letter with regard to the reference, in my article on Blue-winged Grass Parrakeets, to the susceptibility of the species to eye disease.

It is a complaint of which, I am thankful to say, I have had, so far, no personal experience; partly, perhaps, because none of the Grass Parrakeets we possess here at the Keston Foreign Bird Farm have ever arrived previously infected; and partly because, as I stated in my article, we give nearly all our Parrakeets a separate aviary to each pair of birds, thus minimizing the risk of subsequent infection.

The study of the diagnosis, cure, and prevention of the varied, and, as in the case of Septicæmia, mysterious maladies that afflict Parrakeets in captivity, and to some extent, according to Dr. Hamilton, in a wild state also, is, comparatively, in its infancy. I imagine, however, that the Xerophthalmia, which, in Mr. Hastings' letter, he refers to as being so prevalent among soft-food eaters, is entirely

different to the eye disease which attacks the members of the Grass Parrakeet family, also to a lesser extent others, particularly the Polyteline Parrakeets—and is a form of conjunctivitis, and usually fatal.

Incidentally, it would be interesting to know whether the latter is the same as the eye complaint from which Dr. Hamilton found wild-caught Many-colours suffering in Australia though, from his description, it sounds not unlike Catarrhal Fever, in which the eyelids rapidly become so swollen and inflamed as to render the bird temporarily blind.

For a description of the eye disease I mentioned in my article on Blue-wings, I cannot do better than refer Mr. Hastings to page 46 of Lord Tavistock's book *Parrots and Parrot-like Birds*, where he will find a complete account of the symptoms of Contagious Conjunctivitis, as it affects Parrakeets, particularly of the *Neophema* group.

The account is too long to quote in full, but in it Lord Tavistock says: "Eye disease may make its first appearance either in an acute or in a chronic form. In the former case the area round one or both eyes suddenly swells up enormously so that the eyes themselves become almost closed, the bird may linger for several weeks or even months, but finally succumbs either from general debility or through the formation of an abscess pressing on the brain."

"In the chronic form of the disease nothing may be noticed for six or seven months beyond a very slight tendency to close the eye partially or blink a little more frequently than normally. The bird's general health and appetite remain good and it may even show signs of playfulness. Gradually, however, the symptoms become more marked, and the disease slowly assumes an acute form . . ." After that, it would seem, the bird's fate is usually sealed.

EDWARD J. BOOSEY.

A BI-COLOURED BUDGERIGAR

I think you will be interested in a description of a wonderful Freak Budgie that I now have in my possession. The bird is a typical Sky-Blue on the whole of one side and a typical Green on the other.

The head, is, on the whole, more Blue than Green, and the mask is white, though there are a few yellow feathers among the white on the right (the green) side. The remarkable feature about this bird is the very regular division of the blue and white feathers on the left side of the bird from the yellow and green on the right side. This division runs down the very centre of the back from the mask to the tail and a ruler might have been used to define it, so straight and regular is it even on the rump. One wing is the typical blue and white, the other the typical green and yellow. The dividing line on the breast is not so regular and straight, but, even so, there is not a blue feather on the left or a green one on the right after allowing about a quarter of an inch for the mixed feathers in the centre of the breast. The under tail feathers too, when spread out, are perfectly divided, the blue and white of the Blue Budgie on the left and the green and yellow on the right side.

The bird is about six months old and has completed the head moult, I should judge from the "mealy" appearance of the wings (both the blue and the green) that these are still the nest plumage.

The bird was bred by a friend of mine from a Blue mated to a Green-Blue. It appears to be perfectly healthy and was bred and wintered in a very exposed outdoor aviary. The left foot is deformed, and the bird is on the small side, but not smaller than most of this breeder's birds. It is a male.

I believe I read an account of a similar bird (or was it a Love Bird ?) being bred at the Gardens. Is this one still in existence ? I took mine to Primley Zoo this morning, Mr. Whitley was not there, but Miss Salter was most interested in it.

I am sorry I did not hear of this freak before the Palace Show, it would have been a near rival of your beautiful Blue Love Birds !

PERCY NEWMAN.

[A Budgerigar similar to the one described was exhibited at the Crystal Palace a few years ago and was afterwards purchased by Lord Rothschild and deposited for a time in the Zoological Gardens. This was a male that had been produced in Germany. A second example, a female, was bred in France and sent to me when dead, though on arrival it was too decomposed for anatomical examination.—ED.]



Gouldian Finch
Poëphila gouldiæ.

Upper figure Adult female.
Middle figure Adult male.
Lower figure Adult male, red-headed (*mirabilis*) phase.

THE

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THE KING OUR PATRON

His Majesty the King has been graciously pleased to grant his patronage to the Avicultural Society.

COLOURED DRAWING OF THE SPLENDID GRASS-PARRAKEET

The original coloured drawing of the Splendid Grass-Parrakeet from which the coloured plate, which appeared in our last number, was reproduced, was presented to the King, who owns a pair of these birds, and the following is an extract from a letter received by the Editor from Colonel Sir Clive Wigram, K.C.V., etc., the King's Private Secretary: "The King is delighted with the drawing of the Splendid Parrakeets which you have so kindly had framed and for which His Majesty desires me to express his sincere thanks. I am also to thank you for arranging for copies of the AVICULTURAL MAGAZINE to be forwarded."

GOULDIAN FINCHES

By P. W. Teague

It has been suggested that some further and fuller notes on my experiences in breeding Gouldian Finches would be useful to other enthusiasts, including those in New Zealand, who have often asked for articles on the keeping and breeding of the more or less common birds.

I have specialized in these birds and I can claim to have been fairly successful with them, but beginning with Gouldian Finches in England was anything but a cheerful or hopeful proposition, for practically the only information I could get was: "Yes, very beautiful birds, but they only seem to die," or, "they don't last long—like spring flowers."

I enquired from as many sources as I could, including members of our Society, and these are a few of the encouraging replies I got: No. 1: "Once acclimatized they do quite well for a time, and most of them will attempt nesting, but my experience is, that the young very rarely live more than three to four months—I have had nest after nest of them and all have gone the same way, so I have given them up in despair." No. 2: "I commenced the season with four pairs and have now only one cock bird left—all seem to die for no apparent reason." No. 3: "They are very beautiful, but not worth wasting your money on, sell them out as soon as you can and cut your losses." I nearly did this, for all had the same cheerful tale. However, I decided to try methods which had proved very successful with birds I had kept when abroad, although many things I use now were unobtainable there.

Necessity is the mother of invention, and this is how I came to find out one of the finest revivers or foods I have yet used. I live miles from a chemist's shop so was compelled to use anything I could think of that we had in the house, to revive a Gouldian Finch which arrived a mere feathered skeleton, and so exhausted and bad that if you touched it, over it fell and there it lay until you picked the poor thing up again. I hadn't the usual brandy or whisky, but there happened to be some Virol at hand. A small quantity of this was diluted with warm water, and as the bird was too weak to drink or eat, my wife and I kept

dipping its beak into this Virol water, until it began to show signs of reviving, then it began to shell some soaked seeds; finally recovering it is now one of my best breeders.

There is no need for me to waste space by attempting to describe this lovely bird, well known to most of you, but its colouring is gorgeous, and a true description of the brilliant colours would sound almost unbelievable to those who have not seen it. I have kept numerous kinds of birds from time to time, but amongst the seed-eaters, the Gouldian is one of the most beautiful. It is clean in its habits, and dainty in every sense of the word, whilst the sibilant little song of the cock bird is really most pleasing, and so is his quaint little love dance. A group of ten or a dozen of these brilliantly coloured birds together in full plumage is a lovely sight.

I cannot tell you anything about its wild life, but I will attempt to tell you my observations of them in cages and aviaries. They can be bred with comparative ease in either the outdoor aviary, or a good sized breeding cage in the house. Some of the most successful hatches I have had have been in box-pattern breeding cages, 36 × 11 × 16 in. with a nest-box fixed at one end, well hidden by bits of heather, broom, and empty millet sprays. Give them plenty of nice soft hay for building and leave them alone. You will soon hear when you have any young in the nest. Many have asked me what sort of a nesting box to use, if anything they show a preference for those small cardboard bird travelling boxes, and the next best is an ordinary foreign Finch nest-box, only add a deeper piece of wood to the front. You can give them a good choice in an aviary, but in the breeding cage I find they will take to the one provided as a rule, if they intend breeding. Incubation takes 12 to 13 days, but I have had them go 15 days. The nesting plumage of the young is plain dusky green, shading to fawn under the breast without any of the adult coloration. In spite of what previous writers in our Magazine have said, I find they take a long time to come into complete adult plumage, and very often not until the second moult at 18 months or 2 years old; individual birds differ considerably. I have hatched and successfully reared Gouldians from early May up to and including December, and I have birds in my aviaries representing each of those months, so I am not writing

on observations from an odd nest or two, for I am now well away with my second generation, and have strong hopes of breeding my third generation this next summer. Out of fourteen youngsters hatched in May and June, twelve were kept in the outside aviary, unheated, and with no artificial light—the other two were brought indoors and kept in a cage. These two completed their moult when about 10 months old, whilst the twelve outside had not completed theirs until 12 months old or more. Two August hatched birds were kept together, fed and treated exactly alike, one moulted completely to adult plumage except its head at 9 months old, whilst the other, which is now 19 months old has scarcely changed a feather, yet another from a December hatch, was half through its moult when 6 months old then stopped, leaving it with a very patchy appearance.

Personally, I prefer the early hatched birds, because there is often an abundance of fresh seeding grasses and green food to be obtained which gives the youngsters that extra bit of stamina to stand the strain of winter and the moult. Yet on the other hand my feeding method has successfully reared the very late ones and it will help the town enthusiasts who experience great difficulty in obtaining fresh seeding grasses. The great danger in late breeding is egg-binding in the hens, and one must be constantly looking out for this. Probably there is nothing new about my feeding methods except perhaps the frequent use of Virol in the water, neither am I going to suggest you try experiments I saw recommended by a certain writer a little time ago. I was forced to experiment and I have paid the usual price, but it was *the only way* I could get any satisfactory information about these birds. Individual Gouldians, like human beings, have varied tastes, with one exception, and that is, they all eat a large proportion of canary seed, so give them the best. In addition I give white millet and red millet—some Gouldians are very fond of red millet, whilst others scarcely touch it. Indian millet is also supplied, but chiefly in the form of spray millet. All seeds are given in separate hoppers which I make out of half-pint bottles on the same principle as the water bottle. These hoppers I stand on two rails (2 inches or so from the bottom) in a box about 5 inches deep and long enough to stand all the bottles in with a space of about $\frac{3}{4}$ in. between each, this allows

all husks to fall into the box and not be scattered all over the aviary, and it will catch any seed split. This is a useful suggestion for all aviculturists who like to keep their aviaries clean and tidy. Care should be taken to have a small shallow receptacle under the neck of the bottle hopper, then the bird will crack the seed over the side thus keeping the seed receptacles more or less free of husks. If these bottle hoppers are properly arranged you need have no fear of their failing to work so long as they are kept in the aviary out of the rain. By giving the seeds separately, you cater for the individual tastes, and economy in seed. In addition to the above-mentioned seeds, I also have one containing Niger seed—here again some are quite fond of this and others only eat it occasionally. The use of this seed has been strongly condemned as too fattening for a somewhat sluggish bird like the Gouldian, but mine have it winter and summer. I shall be glad to know how to make a Gouldian over-fat, for I have not yet discovered the secret, as it is a dainty feeder and it will rarely eat the things we consider good for it. Spray millet appears to be almost essential to these birds, but I had one exception and this bird did not touch it until it was over 12 months old. It is now making up for lost time. I soak all millet sprays in cold water for three or four days, changing the water daily, but don't give it wet in severe frosty weather. Before using, dip the spray in hot water for a moment or two, but if the spray has commenced to sprout, only thoroughly wash it in warm water so that you do not injure the tender sprouts. I also give my birds daily—if it is eaten up—soaked seeds. No doubt with these soaked seeds I have unconsciously produced certain foods now known as Vitamins. It was the daily use of these soaked seeds that brought me many successes in rearing birds whilst I was abroad, because where I lived any foods out of the ordinary were unobtainable. I believe these soaked seeds play an important part in my success with Gouldians in England, combined with the frequent use of Virol water, or it may be due to a combination of feeding and management. I soak seed in the proportion of three tablespoonfuls of canary to one of white millet—sometimes plain canary seed only. White millet takes a very long time to soak and germinate therefore it is an advantage to soak this seed separately if possible giving it a longer soak. These seeds

are placed for soaking in a perforated zinc strainer—similar to a coffee-pot strainer (this shape ) and then stood in a jar or tin of cold water. The idea of these strainers is to facilitate easy cleaning of the seeds and changing of the water. These soaking seeds give off an offensive smell unless the water is changed at least once a day. This is only a moments job holding the strainer under the tap. I have five of these strainers, four of which are always in use and these are all numbered so that I know which one to use, should they get mixed. For instance if you are using No. 1 to-day, fill up the empty No. 5, then when the next one is used, refill No. 1 and so on. It will be noticed these seeds are soaking four or five days—sometimes longer except in summer as the seeds germinate quicker. Before use, thoroughly wash seed in the strainer under the tap, and if seed not much sprouted, dip into hot water for a moment or two to ensure thorough cleanliness and quick drying. Now stand strainer of seeds on a damp cloth to draw all surplus water off, this is quicker and far more convenient than trying to dry the seed between a cloth. The seeds are then placed in a basin to which I add a teaspoonful of good honey—or fine castor sugar, honey for preference—thoroughly mix, then add a tablespoonful of small seeds, again mix and allow to stand as long as convenient to soak up the honey. Allow about half a teaspoonful per bird daily, when feeding young replenish whenever necessary. This is my stock mixture of small seeds: Equal parts of grass, dandelion, and niger seeds, half parts of white lettuce and maw seeds, and a bit of gold of pleasure seed—or a bit of thistle seed; but I don't use the latter now as I have a garden! I also offer this small seed mixture occasionally dry and they enjoy it. This mixture is the outcome of close observation of what they like, some favouring one seed and some another. I cannot give you any whys and wherefores for the above mixtures or methods. They are entirely my own and the fact remains that their efficacy has been proved by practical results both for rearing young Gouldians and keeping them in good health and condition. The above may appear to be a lot of trouble, but you will find it is really quite easy and the birds enjoy the changes, and who of you would not go to this little extra trouble to keep one of the loveliest birds living in good health and condition? When feeding the soaked seed mixture only put small quantities at

a time in small shallow dishes, and place these on a grid or a bunch of used millet spray to keep dirt and sand from getting into it when the birds hop on to the dish. Another thing by only placing a small quantity in each dish the husks will not hide the seeds at the bottom. Do not try to take a short cut to soften the seeds by boiling them, as was once suggested to me. It is not the same because you do not want to soften the seed only, it is the slow soaking which allows the seed to germinate and get pulpy that is wanted, thus I suppose, producing more naturally certain vitamins. In separate dishes offer a few short oats and an occasional bit of crushed hemp seed, but be very sparing with the latter as it appears to have a peculiar effect on the bowels. I have also experimented with the use of C.L.O. for these birds with unfortunate results and I regret to say I cannot recommend its use, although I have had good results from it on other birds. I am now experimenting with " Radio-Malt " by adding a small quantity to the soaked seed mixture. The birds certainly enjoy this and like the malt flavour. When rearing young also offer a little sweetened bread and milk, or a bit of sponge cake soaked in milk, one or two small meal-worms, or a bit of insectile mixture. Some will eat a bit of egg and biscuit, but I find the many proprietary brands of soft food are rarely if ever, touched. I have tried nearly all makes, and even starved the Gouldians in the attempt to induce them to eat it, but without success. Give as many fresh seeding grasses daily as you can obtain, their favourite being Rye grass (tinker-tailor grass). Also a clod or turf of grass from which they will eat quite a lot of the tender blades. I also turn these clods upside down for them to pick over, this they greatly enjoy. I find they prefer tender grass to almost all other green food, but they will eat lettuce, dandelion, and sow thistle and, very occasionally, watercress. I also throw them chickweed, groundsell, etc., but I have never seen them eat any. Keep ringing the changes with your foods, except the staple seeds, and to borrow an expression from the Marquess of Tavistock, " Use some bird sense." When giving fresh grasses, pick these with long stems and place in a jar of water to keep them fresh, taking care to fill the neck of the receptacle with grass or something to prevent the birds attempting to reach the water or you will surely have an accident. I have kept grasses fresh in this

way for a week or more. This is another useful hint. In addition to the usual sand in the cages and aviaries I mix the following grit: Save all the egg-shells from the household, bake them in the oven, and then smash up small; add to this some very fine flint chicken grit, fine powdered oyster shell—or cockle shell grit—a bit of old mortar if obtainable, and some small broken cuttlefish bone. Keep a shallow tin of this in your aviaries as well as scattering a little on the floors. Personally, I attach great importance to this grit mixture, and you will be amazed at the quantity they will eat. I know some people deprecate the use of egg-shells on account, they say, of it teaching the birds to eat eggs. I have never had a bird take to this bad habit, although I have kept and reared birds rather longer than I care to remember. I have never had Gouldians to eat cuttlefish bone from the piece but they will eat a little when broken up into small pieces. When kept in cages they are fond of pecking at rock salt, but I never see them do so in the aviaries. My birds usually get cold boiled water to drink and bathe in, and I only give them a bath on very favourable days in winter. I prefer to boast of having a live bird to a clean dead one. To those who can arrange it, don't leave the bath water in the aviaries after lunch in our treacherous climate. This refers more especially to winter. The Gouldians love to bathe by rubbing themselves in wet grass, so lightly sprinkle a turf of grass for a change.

Now how to use and mix the Virol: I cannot speak too highly of this, for I have given it a thorough test and I have used it regularly on my Gouldians the last four years. Prepare it in the proportion of one teaspoonful to half a pint of warm water—not boiling. When first starting to give this, make the solution weaker for the first few times. This Virol solution I give two or three times a week, if weather not too hot—and almost daily during the winter and when moulting. Continue its use on the young stock until after they moult. The birds get to like it and I have seen them drink this solution in preference to plain water. It should be mixed *fresh daily*, and economize by giving only sufficient for the day if possible, and take care to place the Virol water out of the sun. I have had some wonderful results from its use combined with my other methods given above—good health in stock, large percentage of fertile eggs, and vigorous young birds. The one

drawback to Virol water is, the birds will try and bathe in it unless it is given in very small vessels. A 3*s.* 9*d.* jar of Virol lasts me over six months. An Australian enthusiast visiting my aviaries said he had never seen Gouldians with such sheen and clean beaks even in the wild state.

In hopes of preventing the usual intestinal troubles we get in the summer, I tried Yadil in the drinking water on alternate days. As the season was an exceptionally cool one I can hardly judge this experiment, but I lost no birds from this complaint last summer. If you do get a bird with intestinal trouble I know of no better medicine (and I have tried many) than Galloway's "Pinko". I am indebted to Mr. Hicks for the recommendation of this excellent preparation. If you are unfortunate enough to have a sick bird, cage it separately and have it in your living room if possible, for they seem to like human company. Clean the cage out daily and provide a supply of well soaked thoroughly washed millet spray fresh daily, also some of the soaked seed mixture previously mentioned, in a tiny finger drawer pushed between the cage wires. The finger tins I use measure $1\frac{1}{2}$ inches long by $\frac{1}{2}$ in. deep and this rests on the perch through the wires. You will find this method of feeding a sick bird almost irresistible, for if the bird can get on to the perch at all it can't resist picking from this finger drawer—try it and see.

When breeding, I only allow one pair to a cage or small aviary and you are more likely to succeed if they are entirely by themselves. You can associate a few Waxbills and a pair of Bengalese in the same small aviary, but some Gouldians even resent their presence when nesting. All breeders of foreign Finches should keep a few of these wonderful little foster parents—Bengalese—I have even got Bengalese to hatch and rear birds when they themselves have not laid an egg—but this is another story. Gouldians should be separated (the sexes) in the winter or you will have numerous losses from egg-binding.

I have not described an aviary as most people have their own ideas on this point, and the design depends on the money one has to spare. I have fitted removable Windolite shutters to all my aviaries, these are a great comfort to the birds, especially during the winter and wet weather. Gouldians do not like cold winds. I do not believe

in putting the birds to unnecessary discomfort under the illusion that they are being made hardy, although they can stand plenty of dry cold when shut in their shelters, but not the conditions some people provide for them. I have seen aviaries with no other cover than the shelter shed—the owners forgetting the fact that birds are not quite blessed with the same sense as themselves—and then they wonder why they die!

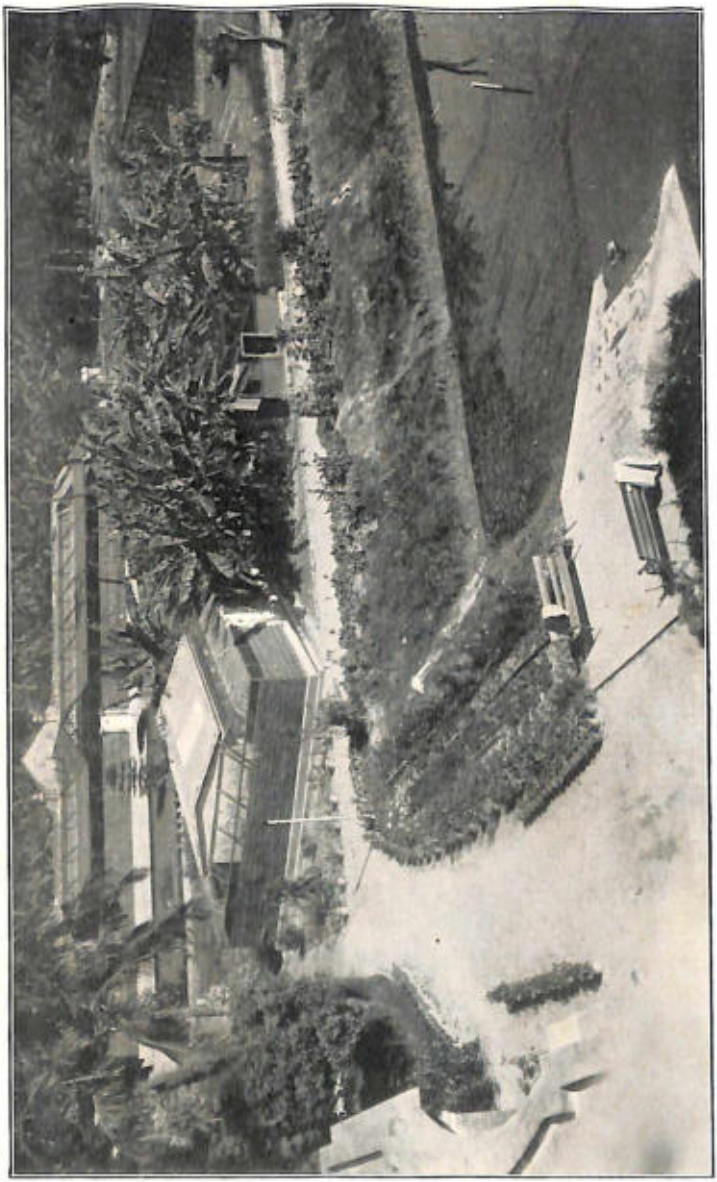
The ground in this district is heavy wet clay and very exposed, so I have entirely boarded the floors of my four small aviaries. This I find a great improvement in every way. My birds get no artificial heat or light during the winter, except after a very dark winter day I occasionally provide a lantern for them to have a late evening feed, yet I think a little heat would be beneficial in the winter. My aviaries are free from draughts, wet, and cold winds, and in this way I have kept between twenty and thirty Gouldians in perfect health and condition the last two winters. If you do see a bird looking out-of-tone or unhappy catch it up and bring indoors. You may have to do this as their moulting period varies, some commencing in October and November—but most of them moult in February, March, and April.

Keep your cages, aviaries, and all utensils thoroughly clean.

Perhaps some of you will wonder what my losses are or have been. Well, I am not afraid to tell you because I keep careful notes. Total number of deaths: five in the last four years, made up as follows: Two hens, egg-binding trouble, one of which I killed through over-anxiety; one from jaundice and biliary fever—directly traceable to the C.L.O. experiment; two from enteritis (intestinal inflamation), newly acquired pair. That reminds me to recommend all who wish to start Gouldians to purchase acclimatized birds or British aviary bred specimens if possible. They may cost more, but it is worth it.

I find many have failed to rear young Gouldians to maturity because they have been fed almost entirely on dry millet spray and seed, with the result that they lack stamina.

Many of you no doubt hatch and rear them without this little extra trouble, stick to your own method if successful; but to those who have not been so fortunate, try the above method, for it has proved successful to other Gouldian enthusiasts who had previously failed.



Panoramic View of Dr. Satya Churn Law's Aviaries.

To face p. 99.]

In conclusion, I hope these notes will prove useful, and help to bring success to the many Gouldian admirers—and they are many.

N.B.—After writing the above notes, the 19 months old bird mentioned went in the moult and died suddenly. The P.M. said: "Death due to exposure"—probably the result of the severe weather at the time.

It appears significant that of the deaths mentioned in four years, only one bird was of my own breeding.

THE AVIARIES OF AN INDIAN BIRD LOVER

By Alfred Ezra, O.B.E.

Many of our readers know that our fellow member, Dr. Satya Churn Law, is the happy possessor of large aviaries about ten miles from Calcutta, where the most difficult Indian insectivorous birds, as well as many foreign species are kept in most perfect condition, and very often bred.

Last winter, I took the opportunity, when on a visit to Calcutta, to visit these fine aviaries twice, spending two whole mornings with Dr. Law.

Dr. Law is not only a keen and able aviculturist, he is also an excellent ornithologist, botanist, and naturalist in general, all his work being carried out in a thoroughly scientific way. Among his many degrees and qualifications, he is an Honorary Correspondent of the Zoological Survey of India, and in this capacity, has completely revised, since 1926, the collection of bird skins in the Indian Museum, at the same time collecting numerous species and valuable data on several expeditions in different parts of India. For a very long time Dr. Law has been particularly interested in solving the difficult problems of feeding and housing delicate birds under tropical conditions. All the year round, the most delicate birds are given live ant cocoons, grasshoppers, larvæ and pupæ of *Oecophylla smaragdina*, while the staple diet of all birds is "suttoo" (grain meal). The aviaries consist of small inside shelters and large flights, all covered with bamboo matting, which protects the birds from the sun as well as from Kites and Crows.

They are also protected against ants, which are such a curse to aviculturists in India, by surrounding each block of aviaries with a narrow cemented canal filled with water. As will be seen by the photographs here reproduced, the flights are planted thickly with suitable shrubs. The bird accommodation consists of the following :—

Aviary No. I (*Outdoor*).—This block of many compartments is arranged in a natural way with trees and grass, also Orchids, Crotons, and other ornamental shrubs. Birds for special mention are : Bulbul, Oriole, Green Pigeon, Flycatcher, White-eye, Coppersmith and Barbet, Emerald Dove, Shama, Pitta, Thrushes, Babbler, Wagtail, Lark, Finch, Bunting, Partridge, Junglefowl and Pheasant, Lovebird, *Loriculus*, Fancy Duck, Swallow-shrike, Drongo.

Aviary No. II (*Outdoor*).—Designed for smaller and rather delicate birds : Flowerpecker, Minivet, Nuthatch, Chat and Robin, Redstart, Tit, *Iora*, Himalayan Flycatcher, Glossy Stare, White-eye, Bluethroat.

Aviary No. III.—Paddock for Demoiselle Cranes.

Aviary No. IV.—Duck Enclosure.

Aviary No. V.—For rather hardy species, e.g. : Hill Mynah, *Myiophoneus*, Shrike, Laughing Thrush, Quail, Coot, Rail, and Crake.

Aviary No. VI (*Indoor*).—Cuckoo-shrike, Local uncommon birds, Rare Bengal Doves, Green Avadavat, Waxbill, American Bunting, Royal Starling, Californian and Cuban Quail, Delicate foreign Finches.

Among Indian birds, the following rare and delicate species may be mentioned, those marked with an asterisk having bred :—

The Himalayan Brown-eared Bulbul (*Ixos flavala* Blyth.).

* The Slaty-headed Scimitar-babbler (*Pomatorhinus schisticeps* Hodgs.).

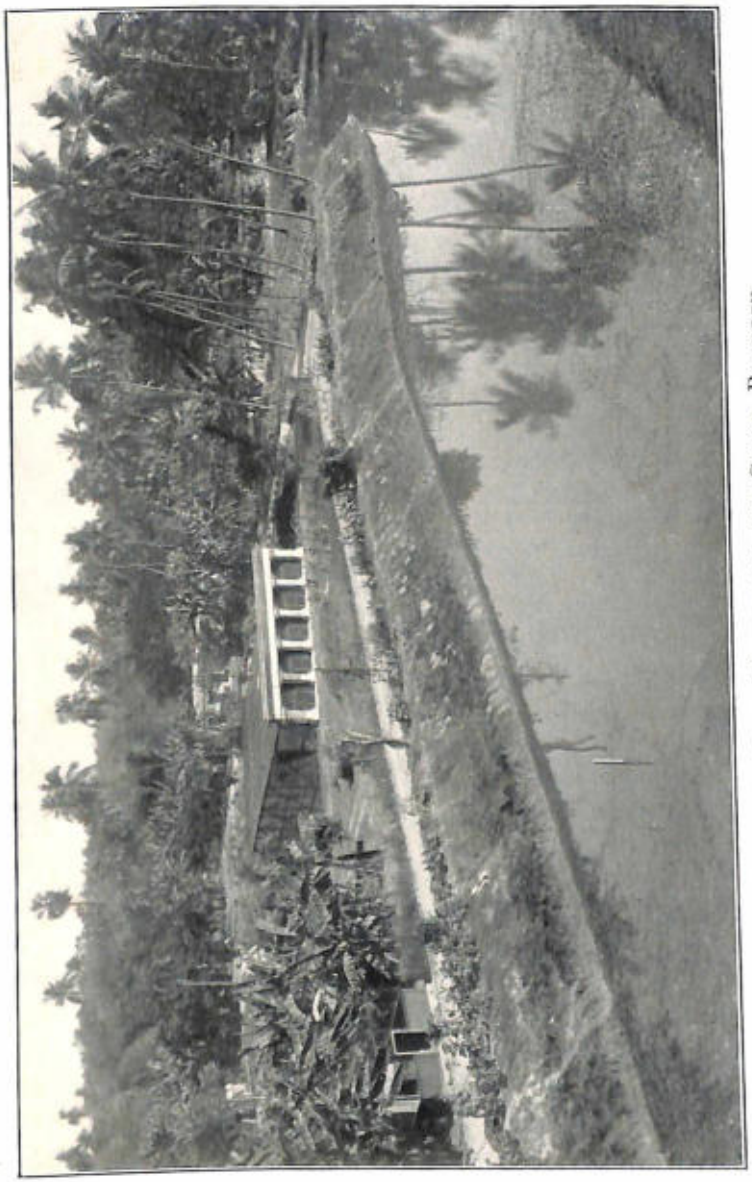
The Striated Laughing Thrush (*Grammatoptila striata* Vigors.).

Hardwick's Green Bulbul (*Chloropsis hardwickii* Jerd. and Selby).

Jerdon's Green Bulbul (*C. jerdoni* Blyth.).

The Indian Black-naped Oriole (*O. chinensis diffusus* Sharpe).

The Maroon Oriole (*O. traillii* Vigors).



Dr. Law's Duck Enclosure and Crane Paddock.

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* The Large Pied Wagtail (*Motacilla maderaspatensis* Gmel.).
The Himalayan Siskin (*Hypacanthis spinoides* Vigors).
The Crested Bunting (*Melophus melanicterus* Gmel.).
The Pin-tailed Green Pigeon (*Sphenocercus apicaudus* Blyth.).
The Wedge-tailed Green Pigeon (*S. sphenurus* Vigors).
* The Streaked Laughing Thrush (*Trochalopterum lineatum griseicentior* Hartert).
The Bengal Red-capped Babbler (*Timalia pileata bengalensis* Godw.-Aust.).
The Indian Black-headed Shrike (*Lanius nigriceps* Frank.).
The Hooded Pitta (*Pitta cucullata* Hartlaub).
The Yellow-cheeked Tit (*Maclolophus xanthogenys* Vigors).
The Green-backed Tit (*Parus monticolus* Vigors).
The Blue-headed Rock Thrush (*Monticola cinclorhyncha* Vigors).
The Chestnut-bellied Rock Thrush (*M. erythrogastra* Vigors).
The Blue-headed Robin (*Adelura caeruleocephala* Vigors).
The Red-flanked Bush Robin (*Ianthia cyanura rufilata* Hodgs.).
The Slaty-blue Flycatcher (*Muscicapula tricolor* Hodgs.).
The Himalayan Whistling Thrush (*Myiophoneus temminckii* Vig.).
The Red-spotted Bluethroat (*Cyanosylvia suecica* Linn.).
The Dark Grey Bush Chat (*Rhodophila ferrea* Gray).
* The Sonnerat's Junglefowl (*Gallus sonnerati* Temm.).
* The Peacock Pheasant (*Polyplectron bicalcaratum* Linn.).
The Scarlet-backed Flowerpecker (*Dicæum cruentatum* Linn.).
The Fire-capped Tit-warbler (*Cephalophyrus flammiceps* Burt.).
The Velvet-fronted Nuthatch (*Sitta frontalis* Horsf.).
The Wryneck (*Iynx torquilla* Linn.).
* The Ashy Swallow-Shrike (*Artamus fuscus* Vieill.).
The Black-headed Cuckoo-Shrike (*Lalage sykesii* Strickl.).
The Common Indian Wood Shrike (*Tephrodornis pondiceriana* Gmel.).
The Small Minivet (*Pericrocotus peregrinus* Linn.).
The Scarlet Minivet (*P. speciosus* Lath.).
* The Common Iora (*Ægithina tiphia* Linn.).
* The White-bellied Drongo (*Dicrurus coerulescens* Linn.).
* The Black-chinned Yuhina (*Yuhina nigrimentum* Hodgs.).
The Little Pied Flycatcher (*Muscicapula melanoleuca* Hodgs.).

The White-browed Blue Flycatcher (*M. superciliaris* Jerd.).
The Verditer Flycatcher (*Eumyias thalassina* Swains.).
The Rufous-bellied Niltava (*Niltava sundara* Hodgs.).
The Small Niltava (*N. macgregoriae* Burt.).
The Blue-throated Flycatcher (*Muscicapula rubeculoides* Vigors.).
Tickell's Blue Flycatcher (*M. tickelliae* Blyth.).
The Red-breasted Flycatcher (*Siphia parva* Bechst.).
* The Himalayan Black Bulbul (*Microscelis psaroides* Vigors.).
* The White-cheeked Bulbul (*Molpastes leucogenys* Gray).
* The Rufous-bellied Bulbul (*Ixos m. macclellandi* Horsf.).
The Black-crested Yellow Bulbul (*Elathea flaviventris* Tick.).

The foreign birds consist of the following species :—

Royal Starling, Spreo Starling, Cuban Tree Quail, Californian Quail, Carolina Duck, Pileated Finch, Rainbow Bunting, Indigo Bunting, Nonpariel Bunting, Blue Grosbeak, White-throated Grosbeak, * Masked Lovebird, * Fischer's Lovebird, Peach-faced Lovebird, * Black-cheeked Lovebird, * Nyasaland Lovebird, * Swinhoe's Pheasant, * Reeve's Pheasant, * Gouldian Finch, * Long-tailed Grass Finch, Dufresne's Waxbill.

N.B.—Breeding results were obtained from Birds marked (*) during 1930–31.

I was delighted to notice that most of the birds were in perfect health, and showed their brightest natural colours, which so often, unfortunately, fade in our dry indoor aviaries in Europe. Practically all the birds are tame, and a good number nest and rear young every year, particularly the interesting and difficult bird, the Iora.

Among Dr. Law's greatest successes at hand-rearing birds from the nest, I might mention his successful rearing of the Paradise Flycatcher (*Terpsiphone paradisi*) and of the Fantail Flycatcher (*Rhipidura albicollis*) two insectivorous species particularly difficult to keep in captivity. My visits to Dr. Law's beautiful aviaries will long remain a happy memory, while the sight of so many rare and delicate Indian birds reminded me of the bygone days, when the late Major Perreau used to bring us, periodically, those beautiful birds of the Indian jungles, rarely seen nowadays in our English aviaries.





Inside Views of Dr. Law's No. 1 Aviary.

[*To face p.* 102.

A STUDY IN FEMININE PSYCHOLOGY

By The Marquess of Tavistock

Among the older members of my collection is a hen Barnard's Parrakeet. How long I have had her I do not clearly remember, but it cannot be far short of twenty years. Although still hale and hearty, not to say exuberant in spirits, she has done no good as a breeder. At times I have wondered if she were not sterile, so complete has been her indifference to nest-boxes of every sort and pattern ; but I believe, after all, her trouble has been mental rather than physical. Home duties do not appeal to her, and the husbands I supplied have left her cold. Barnards are very temperamental birds. Indeed, I have known a higher percentage of cranks among Barnards than among men, which is more than I can say of any other living creature !

Last autumn, having grown weary of the old lady's persistent refusal to lay a single egg, I decided to let her take her chance as a liberty bird. She would enjoy herself and if she strayed she would be no great loss. I expected her to take little or no interest in the cock she had lived with for the past four years, and I thought she would wander about a good deal. In this I was wrong. For some time she never left the cock's aviary and insisted on roosting on the open wire of the flight, in spite of every effort I made to oblige her to seek more safe and comfortable quarters for the night.

In a little while she began to feel more at home. She discovered another pair of Barnards a few aviaries away. This was great fun. Not since she left her home-land nearly a quarter of a century ago had she had the chance of a real good fight and hen Barnards love fighting almost as much as the sterner sex. By the end of a really enjoyable day she had bitten the cock's foot and got the upper hand of the hen in spite of a double lot of intervening wire netting. A little later she had an equally pleasing row with the Yellow-rumps, and bit the hen's toe. To do her justice, however, she was not a bully. Having drawn blood and, in her opinion, won on points, she no longer annoyed her adversaries, nor did she attack the Kings, Crimson-wings and Barrabands at liberty—inoffensive creatures unworthy of the prowess of a true sportswoman. She never

went any distance away. Occasionally, I would hear her loud, sweet whistling as she crossed the field to some oak trees a few hundred yards off, but that was the limit of her excursions.

Then the unexpected happened. She fell in love at last! Earlier in the winter I had obtained a pair of Mealy Rosellas. They were not a very good pair, and the hen soon died of a rather curious ailment, leaving her husband a disconsolate widower. What the hen Barnard saw in him I cannot imagine, but the fact remains that she fell for him utterly and completely! Her behaviour was very amusing. She was a larger and far more powerful bird than he and could have chewed him up in a minute had she desired to do so, but she knew perfectly well that if there is one thing more than another that a gentleman Broadtail appreciates in his fiancée it is a timid and modest behaviour, so, for the first time in her life, she became really coy. It is perfectly certain that she was not really in the least afraid of the Mealy. He had been most polite from the first; indeed, I am sure that the rapturous whistle: "What a perfectly *divine* creature!" which struck unexpectedly on her ear as she toured the aviaries in search of fresh conquests for her beak, effected, at long last, the conquest of her heart. No one had ever called her *that* before! So day after day she came to the Mealy's aviary and settled on it and near it, though if ever he approached her very closely she edged demurely away.

Poor old thing! I am afraid I treated her rather badly, though it was just a little her own fault. For a time I was tempted to make her happy by releasing her lover, but I really did not dare, for fear of the mischief they might do by fighting. Even as an unattached spinster she had been far too rowdy; as a triumphant bride, she would have maimed half the Broadtails in the collection! Moreover, I did not in the least want hybrids and someone else required the Mealy, so I hardened my heart and sent him away.

A few days later she was back on the Cock Barnard's aviary and as hen Parrakeets make far less fuss about a change of partners than cocks do, I assumed that she had decided to make the best of a bad job and forget her idyll. But in a very few moments I noticed something in her demeanour which had not been there when she had sat on the aviary at the time of her release. There was a nasty intentness about

the way she peered down at the cock and a sinister expedition in her movements as she followed him to and fro. I knew that look. Some years ago I had had a cock Yellow-bellied Parrakeet. He possessed a mate of whom he was reasonably fond, but not so fond that, when released in autumn, he was content to stay near her, as a normally dutiful Broadtail husband will always do. He desired company as little as he feared the hardships of the English winter, and he would roam the countryside in solitude, being often not seen for months at a stretch. But when in late April the trees were covered with bursting buds and the groves were musical with the songs of mating birds, a call sounded in the lonely wanderer's heart bringing him home unerringly year after year. Was it thoughts of his disconsolate wife and hopes of baby Parrakeets in a dark log that drew him back ? Not a bit of it ! He used to return to kill a certain cock Yellow-rump : for that purpose and for that purpose alone. Why he wanted to kill that particular Yellow-rump more than any other bird in the collection I have no idea, the less so that he never took the slightest interest in him during the winter. But as soon as late April came round, as regular as clockwork, the over-mastering conviction that the Yellow-rump was a thing unfit to live would enter the Yellow-belly's mind, and back he would travel over field and forest to do him in. On arrival he would spend all day glaring at the Yellow-rump through the wire roof and following him wherever he went, until, by placing his intended victim in a cage as a decoy, we lured him into an aviary and thence returned him to spend another summer in domestic dulness with his own mate.

The expression and actions of the murderous Yellow-belly were now plainly those of the hen Barnard. Her blighted hopes had turned her heart to gall and bitterness, and she was bent on venting her feelings on her former companion. Why *he* should have been blamed, poor fellow, I cannot imagine. If there was to be unpleasantness at all over the Mealy incident it might more justly have been shown by *him* ; but what angry and heart-broken elderly lady was ever reasonable ? I suppose when she came back to the cock Barnard, after finding the Mealy's aviary empty, everything about him grated on her by contrast with the charms of the dear departed, and so, like the Psalmist, he was hated without a cause.

I had hopes, somewhat faint, I must admit, that, as the cock Barnard had always been master before, he might put the virago in her place when she was let in with him. It was no use, however; she went for him like a tigress; he made no attempt to stand up to her and I had to separate them to save his life. By way of discipline I subjected her to 10 days' solitary confinement in the Mealy's empty aviary, partly to convince her of his absence; partly to bore her into better behaviour. I had little anticipation, however, that the plan would succeed as no cock Barnard I have ever had who disliked a hen as much as she disliked the cock has ever relented under any circumstances whatever. If she would not behave I meant to cut her wing but I decided to give her one more chance.

Accordingly at the end of her time of penance she was transferred back to the cock's aviary. At the sight of the catching-net, which contained her, he slipped into the shelter and we waited outside to see the meeting. After a considerable time he emerged slowly. He had not forgotten her late treatment of him for he did not display but eyed her cautiously and uncertainly. I expected her to fly at him, the more so as a hen Broadtail despises a cowardly suitor as much as a cock dislikes a too forward bride. Femina mutabilis semper! She *didn't* go for him, though by every rule of Broadtail misconduct she should have done so. The old hussy dropped her shoulders in a slight display of greeting and whenever he could not avoid approaching her a little, she very ostentatiously and demurely edged away or flew on to another perch. She might have fretted and gone back in condition? Not a bit of it. When she heard the other pair of Barnards she was as keen as anything to fight them. She was a woman of the world, that's all!

DEMOISELLE CRANES

By W. H. Workman, F.Z.S., M.B.O.U.

In all the papers on this side of the Atlantic, and on the other, which are devoted to our favourite hobby we find innumerable articles on, and directions how to feed and care for, all the small birds, especially those belonging to the Passeres or perching family of birds, and of these I think the Waxbills and Weavers get most attention. Now with our editor's permission I should like very much to give some information about the larger birds which can be kept in captivity, either loose about one's garden or in an aviary, and here let me remark that quite large birds can be kept in a garden say in the suburbs of any of our big cities with most excellent results as far as the health of the birds is concerned and with the greatest pleasure to their owner and his friends.

Lord Tavistock, in his article on Cranes in *Aviculture*, commences with these words: "Anyone who has a park or large space at his disposal will find Cranes extremely interesting to keep. Their large size, majestic deportment, and beautiful plumage, are all points in their favour: besides which they are easily fed, most are hardy, and the probability that they will live at least half as long as their owner."

Therefore as a start I want to tell you all about my pair of Demoiselle Cranes (*Anthropoides virgo*) and how I made up my mind to try them in quite a small garden about ¾ acre in area. When I read in the above article how that the birds would live for half a life time I made up my mind to get busy at once as I am sorry to say half a life time is past for me, so with any luck on both sides if I were to enjoy my Cranes for a long time the sooner I got them the better.

Now I had the very best of good luck for I got a present (just think of it) from a very well-known aviculturist of a most beautiful pair of Demoiselles. They arrived at my place from the London Zoo where they had been deposited for pinioning. This slight operation had been most successfully carried out and I would state here and now that it is most necessary to have Cranes pinioned, otherwise some fine day you will find the birds flown, I will describe the operation later.

The Cranes arrived in a huge case about 4 ft. 6 in. each way,

so it was some job getting it through the gate and into position opposite the door of their temporary run. At last we managed it and out marched two of the most elegant birds I had ever seen. This species is one of the smallest of the Cranes and one of the most beautiful. It is a pale grey colour with the head, neck, and tips of the long wing and tail plumes deep bluish grey, shading to black. Just behind the eye, or where the ear should be, there is a bunch on each side of lovely white feathers which hang down the neck curling back at the tips. The eyes of these birds are large and brilliant, of a blood-red colour, and the legs are black. There is no difference in the sexes.

As this Crane is a native of southern Europe, western Asia and North Africa, it needs a certain amount of shelter during our long and dismal winter. A good house can be constructed in some corner, of match boarding covered with felt or rubberoid, and I would strongly recommend that ½ in. wire netting be stretched over the bottom and door so as to keep out rats and mice. On the wire netting put down a good thick bed of peat moss litter which is healthy, warm, and will keep clean for months. I made a little yard outside the house so, if necessary, I can keep the birds shut up say in frost or snow and at the same time they can get a little exercise. If kept out all night, except during the warmest summer weather (which we in the North don't have) they got very stiff legs and quite evidently suffer from acute rheumatism, so I drive my pair in every night and with our climate I think this is much the better plan.

Now you will want to know how these birds are fed, but first let me tell you that though big birds they have extremely small appetites, in fact a healthy starling would beat them hands down. I feed them on cracked maize, dari, wheat, and small whole maize with now and then a little hemp. The best way to feed Cranes is in the morning and evening in their house: put the food and water in strong earthenware dishes, those that you buy for a dog, made of brown pottery, very heavy and measure nearly 6 inches in diameter. I put them on an upturned box about 6 or 8 inches high so that they cannot put their big feet into the dishes and dirty the food and water, for in this way they are rather stupid big things and exceedingly nervous, which makes them do silly things, but nervous humans often do likewise.

Through the day they consume large quantities of grass, in fact they graze after the manner of geese, besides which they are on the constant hunt for insects great and small. In the morning and evening they are constantly on the prowl from plant to plant snapping up innumerable small deer. Then they quarter the ground for small creepy-crawlies which must be nearly microscopic for I've never been able to see what they are after, every now and then there is a snap and another little life is ended. There seems to be only one thing they like by way of a dainty and that is *small* bits of household bread, especially the brown crust. They come to the window for this if hungry and I have only got to call " Jack and Jill " to bring them up at a run.

If the weather is very hot they go into a small pond for a bathe much to the detriment of the waterlilies, etc., as they leave a white film on the water which is just like flour, but after a day it clears away and the water is all right again, one can't have everything.

With regard to pinioning these birds it is much better to get a veterinary surgeon to do the work. If properly done there is extremely little loss of blood and, as far as one can judge, very little pain to the subject. Just at the tip of the wing you will find a little joint with a number of flight feathers attached, but on the outside of this joint you will find a spur with a few feathers only attached. This spur must be left on as these few feathers give a nice shape to the wing after pinioning. The best illustration I can think of is the right hand. The thumb represents the spur and the fingers the flight feathers. You cut away the fingers at the joint leaving the thumb intact. The vet should freeze the joint and afterwards apply on a piece of cotton wool addrinoline and iodine, the former to stop bleeding and the latter as an antiseptic. If properly done all will be well and you can take off the bag from the bird's head and let it loose. The bag is of great use as it covers a very sharp beak which, if left uncovered, would require most careful watching ; with big birds one must take a little care. A friend of mine when working with a Bittern forgot to watch that Bittern's business end and before he knew what had happened gone was a perfectly good eye. But this was a Bittern and they have nasty little ways like the Heron tribe.

REVIEW

A GUIDE TO THE BIRDS OF AUSTRALIA

We have been favoured with a copy of Mr. Neville W. Cayley's book, *What Bird is That*, which has just appeared in its second edition, the first apparently having been sold out soon after publication, which is not surprising seeing what a very excellent book it is and the ridiculously low price at which it is offered.

Our members are now familiar with Mr. Cayley's work as a bird artist, and it is greatly owing to his skill as a faithful delineator of birds that the excellence of his book is due, for it contains a coloured figure of every one of the many hundreds of birds of Australia. There are thirty-six coloured plates, each containing between twenty and thirty figures of birds and each of these is extraordinarily faithful to life considering the necessarily small size of some of them. These coloured illustrations render a detailed description of each species unnecessary, and in fact enable one to identify any particular species much more readily than any amount of printed matter would do. And the letterpress is sufficient; a third of a page or so to each species, giving the trivial and scientific names, derivation of the latter, distribution, notes on the habits, description of the nests and eggs. There are 293 pages of letterpress and a good index.

This book is primarily intended for the field naturalist and so the arrangement of the species is not in the orthodox method of classification, but, for the most part they are grouped in habitats, such as: "Birds of the Brushes and Big Scrubs," "Birds of the Open Forest," and so on. But although we cannot all go and see these birds in their wild habitat as most of us would wish we could, there are many of our members who know many of the Australian birds in life here in our aviaries, and to all such this excellent book of Mr. Neville Cayley's will appeal.

Although published in Australia (Angus and Robertson, Limited, 89 Castlereagh Street, Sydney), *What Bird is That* may be obtained from The Australian Book Company, 16 Farringdon Avenue, Farringdon Street, London, E.C. 4, at the price of 12*s*. 6*d*.

CORRESPONDENCE, NOTES, ETC.

ELDERLY BANKSIAN COCKATOOS

I have just lost the last of the four Banksian Cockatoos I received on Sir Charles Lawes-Witterong's death about twenty-three years ago. "Timmie," as she was called, in spite of her sex, was the least good specimen of the quartet, but she has had a fairly adventurous career. For three summers I kept her at liberty and she behaved, on the whole, with discretion, only once going off on a long exploratory flight for some days. About four years after I got her she and another hen caught tuberculosis from a diseased Roseate and were terribly ill but made most amazing recoveries from that fatal complaint. Recovery was so complete that many years afterwards "Timmie" laid and incubated two clutches of eggs, though I could never get her a satisfactory mate.

Of the other three birds, the fine cock "Teddy" unfortunately contracted a fatal chill the second autumn I had him. One hen I sent to Germany as an exchange; the other strayed in company with a very wild new cock whose flying powers I underestimated, and was never heard of again.

I still have a magnificent hen, bought from Mrs. Anningson, which I believe to have been about forty years in captivity. She lays and sits not infrequently but so far the eggs have always been infertile, although her mate is very attentive to her.

I have had further evidence this winter of the great hardiness of the African Grey Parrot. In the late autumn I was misled by an imaginative vendor into buying an alleged cock as a mate for Canon Dutton's old "Polly". On coming into breeding condition "he" proved to be a hen, but until I recently gave her away she throve in a small outdoor aviary with nothing but shelter from direct wind and wet and no closed shelter at all.

TAVISTOCK.

BIRDS OF PARADISE AND BLUE RING-NECKED PARRAKEETS IN INDIA

When in India recently, I visited Mr. Mullick's Marble Palace in Calcutta, where I saw over a dozen Birds of Paradise, all in tip-top condition and colour. A good many of these birds live to a ripe old age, some of them have been with their present owner for over sixteen years. These birds are fed on bread and milk with a piece of papya fruit only. It must be the climate that agrees with them so well. In Europe it is difficult to keep Birds of Paradise in perfect condition for more than eight or ten years, and very often not so long. The birds I envied most of all at Mr. Mullick's place were a pair of the blue variety of the Ring-necked Parrakeets. They were the most beautiful things I have ever seen, and I wish I had them here to breed some blue Ring-necks.

ALFRED EZRA.

A USEFUL FOOD

There is a most useful food on the market which I think aviculturists are probably not familiar with because I have never seen it mentioned in any avicultural articles. The food I refer to is a preparation of maize and beans. The maize, I understand, is partially steamed or cooked along with the beans and then seems to be rolled out into very thin irregular wafers and allowed to dry and become quite crisp. It is beautifully clean and I understand is sold under various names, such as "Clarendo", "Feedal," etc. It is extremely light in weight and a stone takes a large bag and only costs a shilling for 14 lb.

I use this food in various ways, for instance, during hard weather I mix a little dry with the wheat, etc. for the fancy ducks and give it to them on their floating tray. They love it and it does them no harm as a treat. The Demoiselle and Crowned Cranes get it mixed with their ordinary seeds and they seem very fond of it, a friend feeds his Crowned Cranes on nothing else; by the way, can any member get Cranes to eat animal food during the winter when live food is scarce? I have tried cooked and raw meat without success, bread broken small they like in small quantities. I find my Trumpeters exceedingly fond of this

prepared maize and beans and they get it mixed with their other seeds, which, of course, is in addition to their soft food. Some of our members who keep Waders I am sure are sometimes hard put to to make a variety for these delightful birds. I have found this maize excellent for this purpose, I mix it up with coarse biscuit meal, a little rice or mashed potatoes and add crissel or raw heart chopped up, then scald the mixture with boiling water. (If using raw heart scald before adding this.).

I would here like to make a suggestion ; that is : that writers telling us about the various rare birds that they procure from time to time should make a point of telling us in every case exactly how they feed these birds for we often get most interesting descriptions of rare acquisitions, but never a word as to how they are fed. I find I use the back volumes of our Magazine more for this than any other purpose.

W. H. Workman.

AN OLD COCKATIEL

A correspondent writes of a Cockatiel that had lived in his possession for twenty-four years, and was believed to be two or three years old when received.

D. S-S.

CUBAN BIRDS

From the United States Naval Station, Guantanamo Bay, Cuba, Lieut.-Commander Carlton Brett Morse, U.S. Navy, writes :—

" If any members would care for anything which I might be able to get for them while I am here I should be very glad to do so. I shall be here two, or perhaps three years, and would like to be of help to any one of the Society's members."

BREEDING MASKED LOVEBIRDS

In my opinion *large* aviaries are necessary for Masked Lovebirds, and they need plenty of green food. Movable aviaries are excellent for Lovebirds, as these always have plenty of grass. In small aviaries with no turf the young are often half-naked when they leave the nest.

A. Decoux.

VIOLET-EARED WAXBILL BRED IN GERMANY

I read in a German periodical that the Violet-eared Waxbill (*Granatina granatina*) was successfully bred in Germany last year. I think it is the first time that this species has successfully reared its young in any aviary.

A. Decoux.

EYE DISEASE

I thank Mr. Boosey for his reply to my query *re* the eye disease in Parrakeets, and for his description as quoted from Lord Tavistock. Unfortunately I am not as a rule interested in Parrakeets, therefore have not the book to hand from which Mr. Boosey quotes, but the symptoms quoted are identical with those that have come under my care, and there is not much room to doubt that it is the one and same disease. This disease is caused by a deficiency of (fat soluble) Vitamin A. Whilst most cases investigated have been in Softbills, I have had many instances in Hardbills, and also in English-bred Quail; all have been effectively cured by the same treatment, viz. the application of Vitamin A given direct in the beak. Complete cures are effected in from forty-eight hours to seven days, according to the condition of the bird. I am rather interested in this disease where Parrakeets are concerned as I should like to ascertain for sure if it is one and the same disease and, should any of our members have a bird suffering with it, with the symptoms as described by Lord Tavistock, I should like to have the bird for an experiment, with a view to effecting a cure.

It was interesting to learn from Dr. Hamilton of the eye disease in the wild state. Unfortunately he does not describe the symptoms fully, but I should not be surprised to find that this is the same disease also. I come to this conclusion because of his mentioning of the climatic conditions of the district for several years and the failure of the farmers to grow their crops. Young shoots of grain, leaves, etc., and the food of these birds in the natural surroundings naturally contain fat soluble substances, and it is probable that the birds were

suffering from the deficiency accordingly. This belief is strengthened by the fact that some of the birds recovered in captivity.

In the case of those described where the eye receded, this is, in my opinion, a different disease altogether, for whereas I have effected a cure in the first-mentioned, in the latter I have been unable to, even with a balanced diet containing the three essential Vitamins A, B, and C. I have in my possession now a Canary from a well-known breeder with this complaint. There is certainly a slight improvement in the eye, but I am rather doubtful if it can be cured by feeding. Time will tell, as I am still treating the bird, although I have had it about four weeks.

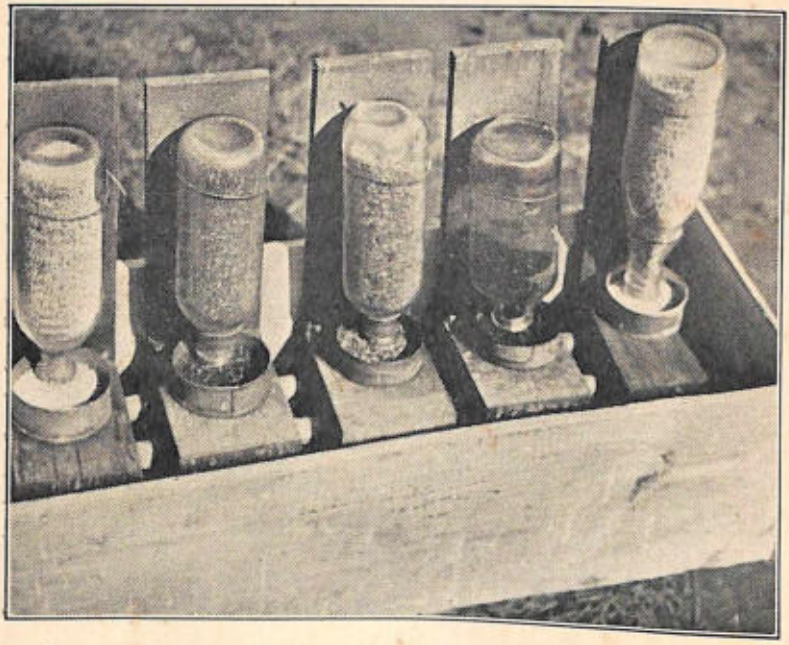
Regarding the query of W. L. English in the March issue as to whether we can improve the health of delicate Softbills by feeding Mealworms with Vitamin-rich substances: we could of course improve the feeding value of these by vitamin feeding, but the result would be in the minority as it were. Mealworms do not form the staple diet of Softbills in captivity, therefore the extra food value in them would not be of much use to the birds. What must be done is that the staple diet must be balanced with the essential vitamin substances, then success would be obtained. It may be of interest to Softbill keepers to know that if they use a dry stock mixture, or a mixture that has to be moistened with water, that they are supplying their birds with a food that fails to supply the essential vitamin substances necessary for health and longevity, because it is practically impossible for a dry mixture to contain them.

Whilst on this subject, I have just received a letter from a prominent doctor member of ours, explaining that he has had many birds with the eye disease, and in the case of young Blue Robins he has been troubled with Avian Polyneuritis. For the benefit of any fanciers who have been troubled with the latter disease, it may interest them to know that it is due to a deficiency of Vitamin B, or water soluble B, which is a most essential substance because, unlike the fat soluble substances it cannot be stored in the body tissues, therefore it is more quickly apparent and death, incidentally, quicker.

P. H. Hastings.

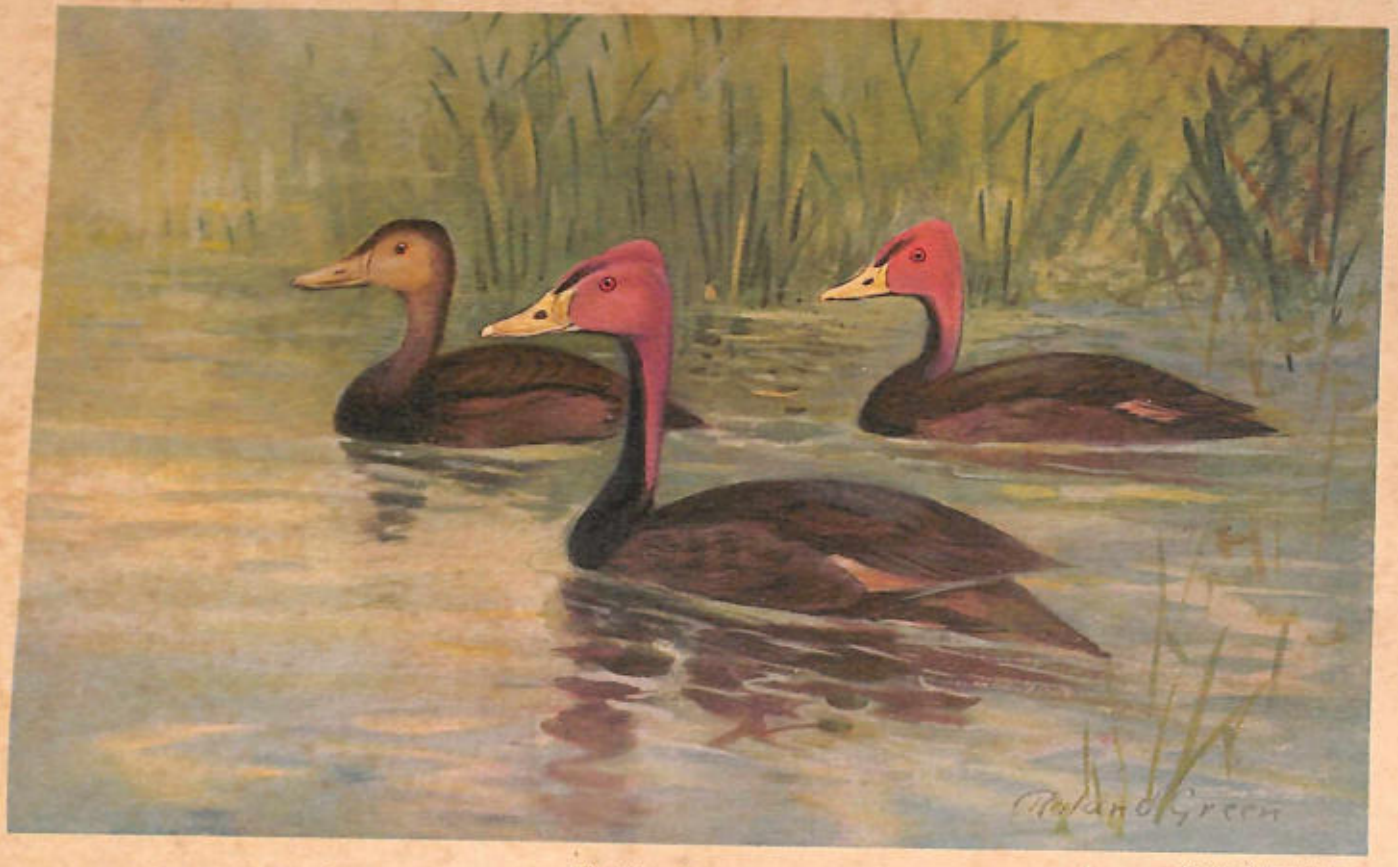
A USEFUL SEED-HOPPER

I am sending you a photograph of my seed-hopper arrangement mentioned in my article on Gouldian Finches (page 90). As can be seen, the small shallow receptacles keep almost entirely free from husks. The birds stand on the small platform to shell the seeds, and the husks and any dropped seeds fall into the box below. This method



works very satisfactorily and keeps the aviary wonderfully clean of seed-husks. The box itself is about five inches deep and long enough to take as many bottles as are necessary. My hoppers contain white millet, red millet, Canary-seed, niger-seed, and another Canary-seed. Indian millet is usually given in the form of spray millet. When cleaning the box out the husks, etc., can be emptied into a sieve, and the husks blown away.

P. W. TEAGUE.



Pink-headed Ducks.
Rhodonessa caryophyllacea.

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FOXWARREN PARK

Situated within twenty miles of London, within a short distance of the main Portsmouth road, Foxwarren Park is not only a most beautiful spot but it is ideal for the realization of its owner's ambition, to form a wonderful collection of living birds and mammals. The soil is sandy loam, the ground beloved of pine-trees and, however persistently the rain descends, the ground is dry a few hours later. It has been a home of foreign birds for many years, for a former owner kept Parrots which he allowed to fly loose.

The present collection is magnificent ranging from Sunbirds to deer, and including the rarest and most beautiful foreign birds that have ever been brought alive to this country.

The outdoor aviaries are very extensive and situated in a lovely spot sheltered by a larch wood and yet catching every gleam of sun that shines. They are not elaborate aviaries, but they certainly could not serve their purpose better than they do. Wooden shelters, built of double boarding, each compartment some 10 or 12 feet square, lighted by skylights and front windows which open out into flights which are turfed and planted with shrubs. These flights are not too large, but they in their turn open out into very large flights where there are plenty of bushes, long grass, and ponds, an ideal arrangement because the birds can always return to their warmed house if the weather

becomes cold. The outside flights, instead of being formed on an iron or ordinary timber framework, are of larch poles which gives a rustic appearance and answers the purpose admirably.

The population of these aviaries, of which there are two ranges, each consisting of eight separate aviaries opening into two very large outer flights, is very large and contains very many rarities such as Madagascar Partridges, Renault's Ground Cuckoos, Blacksmith, White-winged, South African Wattled and Australian Black-breasted Plovers, Fairy Bluebirds, Sun Bitterns, Japanese Jays, Crowned Pigeons, and a host of others, not forgetting a South African Bee-eater which has lived there for six years and is still going strong.

A range of twenty-three smaller aviaries each designed for a single pair of birds where they may be undisturbed for breeding, and here one finds the rare Starlings such as Rothschild's Grackle and the Crowned Starling, both of which bred successfully last year for the first time. These aviaries consist of shelters and wired flights, and there is an excellent arrangement for feeding from the back through a small trap-door without entering the aviary.

Then there is the range of Parrakeet aviaries where the Queen Alexandra Parrakeets bred so successfully last year and the hen is sitting now. Malabars are also nesting, and the wonderful Blue Alexandrine and many of his progeny, Lutino Ringnecks, Derbians, and a splendid pair of Hooded Parrakeets may be seen.

The Bird Room, near the house, contains a number of rare Birds of Paradise, rare Woodpeckers, Amethyst Starlings, and many other rare birds which are kept in special large cages.

In the garden itself is a flock of Demoiselle Cranes which come right up to the house to be fed, when they are generally accompanied by a pair or two of full-winged Chukar Partridges and some of the numerous Indian Spotted Turtle-Doves that are at large in the grounds.

Looking to the West from the house one gets a beautiful view away to the valley of the Wey, which appears as a silver streak in the distance, while in the foreground are seen Cranes, deer, wallabies, and Pheasants, which are enclosed in a space of some fifty acres including wooded hills, scrub, and gorse on the high ground, which falls away to grassland, on which are herds of deer and antelopes and flocks of Cranes.



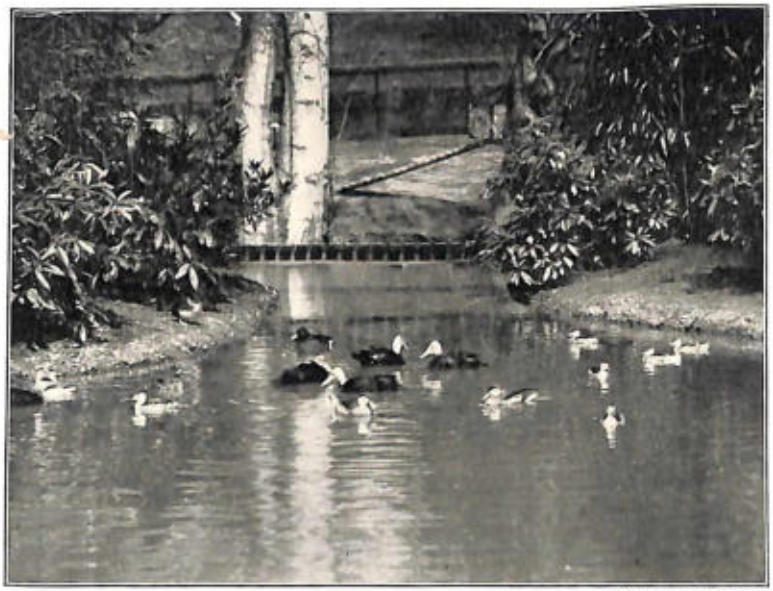


Photo D. Seth-Smith.

Foxwarren Park. Part of the Duck Collection.

Above.—Carolinas, Bahamas, Cotton Teal, and Mandarins.
Below.—Group of Pink-headed Ducks, Bahamas, and Cotton Teal.

[*To face p.* 118.

This enclosure is surrounded by a fox-proof fence which, where it passes the garden, is completely hidden by passing along a cutting, an ideal arrangement allowing an unobstructed view from the house and garden.

This enclosure is a very beautiful and most interesting place in which all of the mammals and birds have done remarkably well. Wallabies have increased greatly in numbers, and at the present time every female has a large "Joey" in her pouch if it has not already left this. Spotted deer and hog deer have increased from three or four to a herd, and the same may be said of blackbuck. Amongst quite a large flock of Sarus Cranes are some with full powers of flight, and to see these sailing down the valley in full flight is a wonderful sight.

Chukar Partridges are all over the place, both inside and outside the enclosure, all now paired and nesting. It is strange that this species appears to be always tame and will merely move out of one's way with a protesting and almost hostile gesture. There are Pheasants here too, three hen Monauls are either sitting or conducting their chicks through the undergrowth while their husbands have had to be confined on account of their murderous tendencies towards other kinds of pheasants. Junglefowl, both Red and Grey, inhabit the woods, both inside and outside the fence.

One descends from the high ground, passing plantations of small birches, clumps of gorse and bracken, beneath pine trees and oaks, stopping on the way to admire the wallabies with their heavily-laden pouches, or startled at the sudden springing up of a Chinese water deer, of which there are many in the enclosure, which will lie until nearly trodden upon, and then dash off like huge hares. We come to the Waterfowl ponds, which have been cleverly formed from a stream supplied by a ram which ensures a continuous supply of fresh water. Like the rest of the collection, the Waterfowl are of many kinds, and some very rare. The Pink-headed Duck, to be seen nowhere else in Europe, is represented here by several males with brilliant pink heads and blackish bodies, and one female. There is quite a little flock of Cotton Teal, most difficult to import but thriving at Foxwarren. Mandarins are really establishing themselves, several full-winged birds breeding in barrels fastened in the trees from which the ducklings

tumble to the ground without sustaining the slightest injury. Amongst the rare Ducks may be seen the Hottentot Teal and the strange-looking White-backed Duck of South Africa and Madagascar which hatched young last year.

There are rare Geese, too. A lovely pair of Emperor Geese, the very attractive Orinoco Goose, and Blue and White Snow Geese, while in an inner enclosure in the wooded part of this large naturalist's paradise Australian Brush Turkeys are busy with their mound.

Such is a brief and very inadequate description of this wonderful Park to which, by the kind invitation of Mr. and Mrs. Ezra, the members of the Avicultural Society paid one of a series of much-appreciated annual visits on 28th May.

THE BREEDING OF THE MALLEE FOWL (*LEIPOA OCELLATA*)

By Dr. E. Hopkinson, C.M.G., etc.

When *Records of Breeding in Captivity* was published in 1926, I knew nothing of any record for this bird, but I now find that its omission was a result of ignorance, for in its native country it has been bred in captivity for several years previously, first by Mr. Bellchambers, and later by Mr. Downer.

On a recent visit to Australia I had the pleasure of meeting the last-named, an old resident and a great exponent of sport in all forms, shooting, racing, polo, etc., and a great authority on everything to do with Australia's fauna. He took me out to his delightful house in the suburbs of Adelaide, and there I saw the breeding Mallee Fowl.

They inhabited one of a pair of pens (the other contained Brush Turkeys) measuring about 15 by 4 yards. The stock consisted of a pair of old birds and five young of varying ages. The mound from which they came occupied one end of the enclosure, and as the owner thought that another young bird was overdue to appear, he made my visit an occasion for digging into the mound, and there sure enough was a fully feathered young bird about 6 inches down, which had evidently died in its struggle to reach the surface.





Photo D. Seth-Smith.

Foxwarren Park.

Above.—Spotted and Hog Deer. *Below.*—A pair of Emperor Geese.

[*To face p.* 120.

They have been breeding in this way for a good many years, and such breeding seems to offer the best chances of survival for this and so many other Australian birds and beasts whose existence changed conditions and civilization are threatening so ominously.

For a good account of the experiment, I cannot do better than quote an article from the *Advertiser* (Adelaide) of 2nd February, 1932, contributed by Mr. Downer :—

" Mallee Fowl are being fast exterminated by foxes and iguanas. This is much to be regretted, and every assistance and support should be given to the family of the late Mr. Bellchambers to carry on the good work which he started in breeding these birds at Humbug Scrub. The Mallee Fowl digs a hole in the ground and builds a huge mound of dirt, leaves, and sticks. Leaves are scratched into the bottom of the mound, which is opened, mostly by the cock bird. The hen lays an egg, which the cock sets and covers with leaves, sand, sticks, and stones. The decaying leaves generate sufficient heat to hatch the egg, and the young bird makes its way unassisted out of the mound. When it reaches the top of the mound it is feathered, can fly, and is independent of its parents. The old birds appear to take no notice of their young. This dry summer has been ideal for my pair of birds. Strange to say, two young birds came out on the same day, a third five days later, the fourth five days later, and the fifth three days later, and I am expecting more shortly. The birds can tell by the nose and beak whether the temperature is right, and they open and close the nest according to requirements. Bellchambers said that these strange birds never drink in their native state, but do so occasionally in captivity. Who wants to be a Mallee Fowl ? I have kept these birds for about fifteen years, and the only time I have ever seen them take water was the other day, when one of the young ones took three drops. It is not known how many eggs a Mallee Fowl will lay. I have seen sixteen in one mound in three tiers, but whether more than one hen used the nest I do not know.

" Frank H. Downer."

Many other Australian birds inhabit the garden and adjoining paddock, two of the Plover, various Ducks, etc., and a few aviaries house smaller birds, but the Mallee Fowl naturally have pride of place.

THE DISPLAY OF RHEINART'S PHEASANT

Rheinart's Pheasant (*Rheinardia ocellata*) was for a number of years known only from a single tail-feather reposing in the Paris Museum. Later specimens were collected in Annam. To Mr. Delacour belongs the credit of introducing the living bird to Europe. He has spent many months in French Indo-China, and has heard the call of this fine bird in the densely wooded mountain slopes, but he has never seen the bird wild, and it is doubtful whether anyone else has done so, for it lives in the densest jungle which is well-nigh impenetrable to a human being, and the only way of securing it is by means of nooses set in its runs, a method of trapping at which the natives are very skilful.

It is not a gaily-coloured bird by any means, its chief colours being dull browns and greys of various shades, the plumage spotted throughout with white spots, like a Guineafowl. The cock has a wonderful tail, the feathers being of great length and breadth, and spotted with chestnut as well as white. A crest decorates the back of the head, but as a rule this hangs as a few inconspicuous, dark, hair-like feathers, while similar feathers grow from the cheeks.

These forest Pheasants are not fond of the sun, and if one wishes to witness a display by the cock to the hen, a gloomy morning in April or May must be selected. It was on such a morning that I first saw the cock Rheinart's Pheasant display. From a considerable distance I noticed a conspicuous white object nearly the size of a tennis ball moving about in the enclosure. It was too dull to distinctly see the bird itself, but this white object was clearly visible. As I came nearer I noticed that the appearance of the cock bird was completely altered by the presence of what looked like a large, white powder-puff on the top of his head. From beneath the ordinarily visible and inconspicuous crest had appeared this snowy white tuft of the finest down-like plumes while his cheek plumes were thrown forward.

Apart from this extraordinary head ornament the actual display was not nearly so striking as that of the Argus Pheasant with his wonderfully decorated and overgrown secondary wing feathers. The bird runs round the hen with his very broad tail made even broader



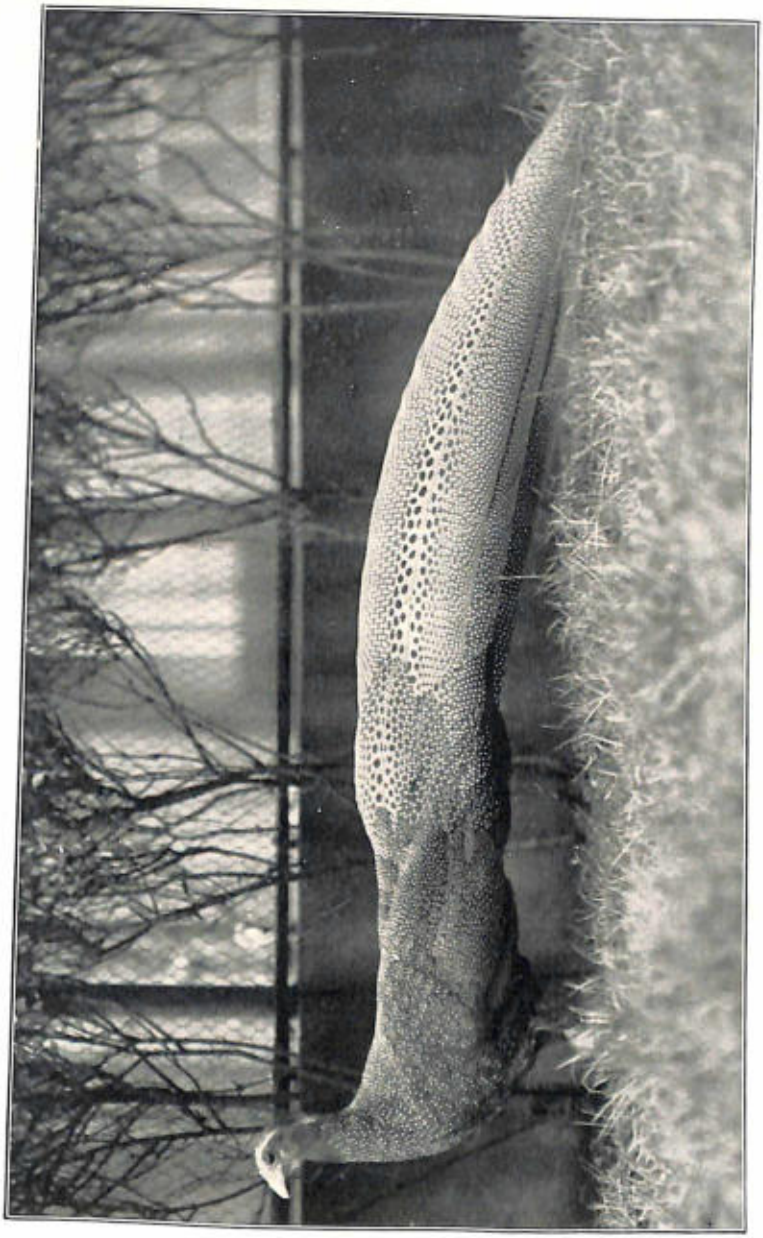


Photo D. Seth-Smith.

Head of Rheinart's Pheasant.

Upper.—In normal attitude. *Lower.*—In display.

[*To face p.* 122—*a.*



Rheinart's Ocellated Pheasant. *Photo D. Seth-Smith.*

[*To face p.* 122—*b.*

by the feathers being spread in the same way as the Amherst spreads his tail. But the transformation of the head is in itself sufficiently remarkable to be worthy of placing on record.

D. Seth-Smith.

SOME BIRDS IN EGYPT AND PALESTINE

By Captain John S. Reeve

During a visit to Egypt and Jerusalem, I made notes of the birds I saw. Since my return I went to see our Editor, who surprised me by asking me to write an article on the subject.

Well, I went to see temples, tombs, mosques, holy places, etc., but never dreamt of writing an article on birds! I wished, however, when I had returned and began to make up a systematic list, that I had taken a little more trouble by jotting down dates, places, etc. more carefully, and should I ever do such another trip, I should certainly make my notes in a systematic manner.

Egypt, its temples, mosques, etc., is well worth seeing, but my wife and I agreed that Palestine was the more fascinating and that we should like to return there for a month on the first opportunity.

I am strongly of the opinion that all believers in the Old or New Testament who can do so, should take the earliest opportunity in their career of visiting the Holy Land.

I trust that as a somewhat amateur ornithologist I shall not display too great ignorance! The only information *re* dates I can give, is to say that I was in Cairo from 16th December to 6th February (except 11th–13th January in the Fayoum, 19th–26th January up the Nile, 26th January to 1st February at Assouan). It must be borne in mind that many of the notes were made from car, boat, train, donkey-back, etc., and that on many occasions in Egypt being with other travellers it was impossible to stop or spend much time on identification, that both countries were entirely new to me, and that my one source of reference was Nicoll's *Birds of Egypt*. I believe no book has been published on the birds of Palestine. What a delightful job for some young man! I conceive, however, that it would entail some long and arduous work,

and one is still liable to fall among thieves, and that not only between Jerusalem and Jericho! The main roads, since the British occupation, are as good as any in England, and the hotels in Jerusalem are up-to-date, this by the way.

I have not put scientific names as where cases of sub-species arise owing to circumstances I could not guarantee them, and it is obvious that in the commoner species, such as Black Kite, Hoodie, and House Sparrow, they were the Egyptian forms.

"Up the Nile valley" means somewhere between Cairo and Assouan!

Dealing first with the Egyptian birds, I saw a pair of Brown-necked Ravens, in the Wady Hof (near Helouan). Hooded Crows were very common in Cairo, the Fayoum, and elsewhere. Starlings I only saw at Chakchouk (Fayoum); most noticeable about these birds was the large white spots all over the breast. I believe that only in the first year do birds here have any white points to the breast feathers, but in the Fayoum birds they were so striking for their size and whiteness, and they surely could not all have been young birds. Nicoll states that Poltaratsky's Starling is common in the Fayoum, but he does not mention *this* as a distinctive mark; can any reader throw some light on this point?

I saw two or three Trumpeter Bullfinches on Tutankhamen's tomb. House Sparrows were everywhere abundant. Crested Larks (*Galerita cristata maculata* Nicoll) were at Chakchouk and Assouan.

The White Wagtail was common at Chakchouk and elsewhere; I got within a few yards of a dozen or more on the edge of the desert at Heliopolis, but they were also in the streets, on the outskirts. I saw one Pipit (Meadow?) at Lake Karoun, Chakchouk.

In the Assouan public garden near the Cataract Hotel, I saw a pair of Nile Valley Sunbirds and White-vented Bulbuls were to be seen in the gardens at Heliopolis and at Chakchouk, where the Chiffchaff was also very common, as also at Assouan. The only other Warbler I saw was unknown to me; it was skulking on or near the ground in a private garden at Heliopolis. I thought it might be the Sardinian or Graceful.

Two or three Song Thrushes were in the same garden, and a Blue Rock Thrush (Western form) I saw at the Great Pyramid, and another

in the Valley of the Kings, Luxor. One Mourning Chat was on Tutankhamen's tomb, and one near the Assouan Reservoir.

When motoring through the desert on the Pyramids–Fayoum road, I saw another Chat which might have been the above or Finsch's Chat. Not being familiar with these Chats or able to handle them, I found them very difficult. Nicoll gives twelve *Œnanthe* as occurring in Egypt, Palestine, etc., the majority of which might be difficult to distinguish from each other in the field.

I only saw one Stonechat, at Chakchouk, and one or two pairs of Black Redstarts were about the Heliopolis gardens on the edge of the desert.

A few Bluethroats (*occidentalis*) were at Chakchouk, very Robin-like in their movements.

Swallows (Egyptian form—*Savignii*) were near Cairo, at Chakchouk, etc., and the little Crag Martins at Sakhara Pyramids and up the Nile.

A flock of Swifts (Egyptian form—*Pallidus*) were over the Citadel at Cairo, some at Chakchouk, and were seen south of Cairo to Assouan.

The Little Green Bee-eater was plentiful at Chakchouk, and appeared to be so in all suitable places from Cairo to Assouan.

Hoopoes were common everywhere, including Heliopolis and the Cairo Zoological Gardens. At the former I saw one and a Kite sitting on either side of a dome above the main street. Curiously enough I never saw one of these birds with crest erected. The Pied Kingfisher was everywhere on water, from the Delta to Assouan inclusive; it was very pretty to see these birds hovering like a Kestrel, but with head bent down between the outstretched wings at right angles to the body. Not having seen Nicoll's statement (p. 337) till afterwards, I unfortunately did not note the nearest station to which I saw a European Kingfisher from the train window; I estimated it was about seventy miles south of Beni Suef!

At Chakchouk one could get quite close to the Lark-heeled Cuckoo as they skulked in the foliage of Palms, etc.; a good plate of this bird is given in Nicoll. I saw two or three Rose-ringed Parrakeets flying about in Cairo Zoological Gardens (see Nicoll, p. 347).

A Little Owl was in a palm grove on the west side of the Nile, south of Helouan and one in Luxor temple and I heard one in the temple of

Setï and Rameses at Abydos. I imagine they are general in all suitable localities. Kestrels were everywhere ; I watched one sitting for some time on a balcony of the Heliopolis Palace Hotel. I saw two or three Harriers up the Nile valley, but could not identify them, but Russell Pasha told me he thought they were probably the Pallid. While motoring near Chakchouk I saw a Harrier-like bird of a grey colour, like a Chanting Hawk I shot in Cape Colony in 1902 ; it was skimming low over the ground in broad daylight, but I put it down as being possibly a Sooty Falcon.

Of Sparrow Hawks I only saw one at Heliopolis and one at the Sacred Lake, Karnak.

Black Kites were nearly everywhere, and you can scarcely look up in Cairo without seeing several in the air. I was told that they constantly swoop down and pick up golf balls, and the Grenadier officers told me the men's dinners had to be covered up when carried from the cook-house as these birds swooped and picked meat off the dishes. One officer then stated he had seen one pick up a polo ball, which statement was immediately entered in the officers' battalion lie-book ! At one place where our Nile steamer was moored, thirty or forty continually hovered round, flying quite close to one, and picking the refuse out of the water with their claws ; they then ate it on the wing, lifting the claw to meet the beak. Since seeing this I am of opinion that the above "lie" should probably be erased !

I noticed one tidying up a nest in the afore-mentioned gardens at Assouan on 31st January, and another carrying a long stick in Cairo on 2nd February. Between Baliana and Abydos was the only one I saw of those beautiful birds, the Black-winged Kite ; in the brilliant sun it looked almost pure white, except for the black on the wings, and its shape in flight reminded me of a Peregrine.

Two or three Egyptian Vultures were on a Nile sandbank near Guerga with Griffons of which there were six or seven, and at Assouan I watched a pair of the latter circling high above me over the Cataract. At one place on the Nile I saw one or two White Storks.

Buff-backed Herons were everywhere from the delta to Assouan (inclusive). The "Paddy-birds" were on all cultivation close to the fellaheen at work, and to the roadsides. I never picked out any Little

Egrets among these birds, and I feel convinced the vast majority were Buff-backed, but at this time of year I could see no buff, even on the head, they appeared quite white.

The only three or four Little Egrets I saw were in a canal between Baliana and Abydos. On the bank of the Nile just north of Komombo, I observed a pair of Geese, which from their size I believe were Egyptian. They were some way from our steamer, and I think were too large for Ruddy Shellduck.

I went out shooting one morning with Russell Pasha, on some water at Ezbet, near Cairo, where we saw Mallard, Pintail, Pochard, and Teal, which last I also saw on the Sacred Lake at Karnak. A White-eyed Pochard killed near Tel-el-Kebir was shown to me, and I also saw two or three of these birds on the Sacred Lake.

A Marbled Teal and a Stiff-tailed Duck killed near Cairo, were sent me by Russell Pasha who asked the Zoo to skin them for me.

Our first morning in the Fayoum my wife and I were out on Lake Karoun before sunrise, and were rowed into a somewhat inefficient "hide" made of palm branches stuck in the bottom of the lake; just at dawn the Duck came in from a southerly direction and great portions of the lake became smothered with them, and they appeared to be about half Shoveller and half Tufted, and I could see no other species of Duck. Just before dusk they could be seen clearing off in the direction whence they came.

I saw one or two Cormorant on the Nile near Awfad Guebara. I believe that I saw about three flocks of White Pelicans on the Nile sandbanks; from their shape I could not see what else they could be, but it was most difficult to identify birds on these sandbanks; in many places the river must be quite a mile wide, and naturally the steamer is always on the far side from the sandbanks. It is often very shallow in the deepest part, and it is no uncommon thing for the steamer to get stuck in these shallow reaches; two of the crew stand on either side of the bows with long poles and continually feel the bottom, and shout up to the bridge the depth as they go along.

The glare of the sun also was most extraordinary, birds looking quite a different colour after one had passed them. With the flocks of Pelican were always some tall birds which looked like Herons or may

have been the common Grey Crane. I was informed by the Swiss who kept the shooting lodge where we stayed at Chakchouk on Lake Karoun that a flock of Flamingos and Pelicans were on the lake last November, for six weeks. At Chakchouk I handled a Rock Pigeon which had been shot; the rump was a very light grey. Palm Doves were common from Cairo to Assouan, and in the Fayoum; they were always in the Hotel and other gardens.

I took a small flock of birds on some rough ground near the Temple of Denderah to be Stone Curlew; they got up and skimmed over the hillocks and I tried to find them again, but for fear of losing my party going into the Temple I failed to do so. Ringed Plover at Lake Karoun, and in a canal near Luxor, I could never get near enough to say if they were this species or the Little Ringed, or Kitlitz Plover. Some I saw at Ezbet near Cairo, Russell Pasha told me he thought were Kitlitz.

Odd Green Plover were seen up the Nile valley and in the Fayoum, and the handsome Spur-winged Plover was common in the latter, where I could easily have shot some, and a saw a few up the Nile.

I heard Redshank at Ezbet, and saw several at Lake Karoun where I shot three.

A few Green Sandpiper got up singly out of the ditches in the Fayoum and up the Nile valley.

Black-tailed Godwit were seen on the wing at Ezbet, and Common Snipe were shot there.

A flock of Gulls on Lake Karoun I could not identify, but from studying Nicoll thought they might be the Great Black-headed. I saw a Moorhen or two on a village pond near Cairo and Coot were numerous at Ezbet, several on Lake Karoun and a few on the Sacred Lake Karnak.

Palestine

As our train climbed up to Jerusalem on the pouring wet morning of Sunday, 7th February, a good covey of Partridges got up from close to the line, and I presume they can only have been Chukar; on the following morning they were snow-balling in the streets of Jerusalem! The Corvidæ are well represented in Palestine; I saw Raven, Brown-necked and Fan-tailed Raven, and Hooded Crows;

the first I took to be *C. corax* by their note as they were circling above the Valley of Hinnom which I may mention runs on the south end of the city of Jerusalem ; the higher up of the two kept diving down with closed wings as Rooks sometimes do in stormy weather, and I wondered whether this was some form of display by the male, it being near breeding time ? Across this valley towards the Mount of Olives on the east side could be seen Ravens of one species or another wending their way by ones and twos each evening an hour or two before sunset. I saw one Brown-necked on the Jericho road and I believe one Fan-tailed sitting on the city wall near the Dung Gate, but several of these last flew across the north end of the Dead Sea as I was talking to Major Tullock (in charge of the Concession works there) ; very interesting to see the potash and bromide which is being obtained in large quantities but this must not be written of here !

It is interesting to note that in *The Ibis* of 1865, Tristram states that Jackdaws were common at Jerusalem and Shechem and that numbers resorted to the Dome of the Rock (in the Temple area). I thought I saw one just outside the south wall of the city, but it popped round a corner so quickly that I could not swear to it ; at any rate I saw no other in the eleven days I was in Palestine ; Luke and Keith-Roach in the list of birds in their *Handbook of Palestine and Trans-Jordan* give the Jackdaw as a common winter visitor and locally resident.

In Tristram's notes in 1859, he says the Egyptian Vulture was universally abundant and bred in great numbers in the Valley of the Kedron and that the Griffon was common in the Judæan hills and between Jerusalem and Jericho. The only Vultures I saw were a long way off between Engannim and Shechem and I should say they were a pair of Griffons ; as we left on 18th February, it is natural that we saw no Egyptian as they do not arrive till the end of the month ; it is interesting to note that at the time Tristram wrote there was hardly a single house outside the city walls ; now there is a large modern town with large hotels, 'buses, motors, etc. ; if the Egyptian Vulture nests in the Kedron Valley it is probably some way down from Jerusalem and the village of Siloam. I saw Great Tits at the Garden Tomb and elsewhere. Greenfinches, Chaffinches,

and Goldfinches seemed common about Jerusalem, and the House Sparrow was also at the Concession works and therefore doubtless in Jericho too.

The White Wagtail was common at Jerusalem and elsewhere, and I saw one Grey Wagtail in the Valley of Jehoshaphat; I saw a few Chiffchaffs at Jerusalem; a Palestine Bulbul flew past on the Jerusalem–Lydda road after leaving the hill country; two or three Blackbirds and Thrushes and a Black Redstart were among some olive-trees on the outskirts of Jerusalem (beyond the Pool of Gihon), and I saw one other of the last-named on Zacharias' tomb in the Valley of Jehoshaphat. One or two Mourning Chats (or Pied Wheatear, *O. lugens*) were seen, a Fisch's or Arabian Chat on the Jerusalem–Lydda road and a Stonechat between Shechem and Engannim. A Little Owl was sitting on the excavations of the Jebusite city of Jericho and did not appear as though even Joshua would have made him stir! I saw another on the road to Nazareth and heard one in the Valley of Hinnom. Kestrels seemed plentiful on the Plain of Esdraelon and in other places, but I was puzzled over some Hawks near Shechem and about six others were circling like Kites over Engannim (modern Jenin); I was some way from them but they resembled Kestrels in size but not in behaviour; is it possible they were Lesser Kestrels which I believe are usually in colonies? Tristram in 1859 stated that they were gregarious about ruins in the Plain district, there being fifteen or twenty pairs at Ramleh (near Lydda). I only saw one Black Kite, and it was on a telegraph pole near Engannim.

I saw a pair of Stock Doves (I forget where!) and a pair of Rock Doves on the road outside Jericho. Green Plover were about Dothan and the Plain of Philistia.

In all I am of opinion that I identified only twenty-eight species in the eleven days I was in Palestine, whereas while in the Fayoum for two nights I got twenty-six certain and three or four others doubtful, and in Egypt altogether about sixty. I don't know if there are 100 Palestinian residents whereas there are over 300 on the list, Palestine being situated in the centre of one of the great migration routes, and only in December and January is there no migration taking

place. No doubt had I been, as I ought to have, two months later I should have obtained a larger list and also seen the wild flowers in profusion; only the Scarlet Anemonies ("Lily of the Field") were coming out in any numbers.

THE MELANISTIC MUTANT PHEASANT—ITS POSSIBLE SOURCE AND ORIGIN

By Geoffrey H. Clark

This pheasant, which has from time to time appeared in British coverts during the last few years, has excited the interest of sportsmen and ornithologists alike, and there has been much speculation as to whence it has come. For some time it was put down as a sport, nothing more or less, to be classed on a par with black and wild rabbits and albino Pheasants. This theory held until it was found by catching and penning the birds that they bred chicks that grew up like the parents, and unlike a true freak did not throw back to the immediate ancestors. The opinion was then held that the bird must be a local sub-species, whose colouring was governed by the conditions under which it lived, and even more likely, by the food which it ate. But if this were so, why was it still possible to find *Colchicus*, *Torquatus*, and *Mongolicus* in the same coverts as those in which the Melanistic had made its appearance? To add to the general confusion it was found out that birds of precisely similar appearance to those found in English coverts were turning up in other parts of the world. This definitely refuted the idea of a local sub-species, for by no stretch of the imagination could similar conditions be said to exist in Asia Minor, whence the birds were reported, and Kent. I mention Kent specifically, because a friend of mine who owns a few acres of shooting near the Romney Marshes tells me that this last season he encountered some of "the new black Pheasants", and because in 1930, I was shooting a covert near Biddenden, and one of the party shot an unusually dark hen. I have always regretted that I did not pay more attention to this bird, but when I gave my opinion as to its possible identity, the remark was greeted with sceptical smiles, and I let the matter drop.

I was more or less given to understand that the bird was nothing more than a dark sport not to be dignified with such a highfalutin name as Melanistic Mutant.

Two cardinal facts stand out about the bird, namely : That it breeds true to its type and that it made a simultaneous appearance in more than one part of the world at once. Now a local variation may breed true to its type given that conditions remain the same year after year, but in no circumstances does a local variation turn up in such widely separated places as those mentioned. This seems to show that it is not a sport or it would revert to its nearer ancestors, and that it is not a local variation or it would not show in several places. We are, then, faced with the problem, what is it ? The answer is, I think, that it is a complete reversal to the old original form of Pheasant from which all known modern varieties have sprung.

This is a very sweeping statement I know, but I will endeavour to prove it to the best of my abilities. The first point is that Melanistic Mutant blood is far stronger than that of any of the ordinary covert breeds. In all crossings it is the Melanistic blood that predominates. This seems to indicate that there is something very special about it, for it seems unlikely that the blood of a sport or local variation would triumph over that of *Colchicus* or any other firmly established breed. This brings us to the question : If the Melanistic Mutant be the old original Pheasant, what then are *Colchicus*, *Torquatus*, and such breeds ? These, I think, are the local variations. It is generally accepted that a local sub-species will continue to breed true to its type as long as conditions similar to those which evolved the type continue, and as long as it is not swamped out with foreign blood.

When I was very young, I learned chemistry at school. Very little knowledge was thus inculcated into me as I spent most of the period in making surreptitious stinks under cover of a bench, but a little has remained. I remember that if a piece of metal is treated in a certain way, the exact treatment eludes me, it gives off a noisome smell and becomes a salt of that particular metal. If this salt is then subjected to another treatment it turns back to the original metal once more. It is my opinion that something similar has happened to the Pheasant. I do not, of course, intend that this parallel be taken scientifically, but

merely as a verbal simile to illustrate my point. Just as the first process evolved a salt from the metal, so did something happen in the life of the original Pheasant that caused all these " pure bred sports ", to coin a phrase for them, to be thrown forth. Perhaps some vast migratory movement, such as occurs from time to time in the history of a bird, occurred, which caused numbers of Pheasants to leave their original birthplace, wherever that might have been, and far forth to those places in which we now find them. Changed conditions in their new habitats involved radical changes, not only in the habits but in the appearances of the birds. Possibly the infusion of a little alien blood intensified these changes, and thus we get the various species of *Phasianus* and allied genera that we know to-day. Now we come to the process which the salt of the metal underwent in my simile. And this, reverting once more to Pheasant parlance, is the promiscuous interbreeding that goes on to-day among wild birds. Even as the original metal was brought back by certain things being done to the salt, so was the original Pheasant brought back by the process of interbreeding.

All over the world sportsmen are importing Pheasants to augment their native stock if such a thing exists. In England there is no native stock, but for purposes of argument it may be assumed that *Colchicus* comprises our native bird as it is the oldest established by far. It is comparatively of recent times that *Torquatus* and *Mongolicus* have been introduced. The bird resulting from interbreeding between these three is said to be a better bird from the sportsman's point of view, but from the point of view of purity of blood it is sadly deteriorated. Up to a certain point the most powerful strain would predominate. This is proved by the way the Versicolour and certain fancy strains were quickly eliminated by the more vigorous nature of the three main birds. Sooner or later, however, there would come a time when this triple interbreeding would get the blood into such a tangle that there was no saying which strain predominated. In such a case, we can imagine the embryo, utterly at a loss as to which strain to take after, cutting the Gordian knot by reverting right back to the original type. To endow the embryo with sufficient intellectual qualities as to induce perplexity, is, of course, rather infantile, but such a method of speaking

can illustrate my point more clearly than any other. I admit that this is largely in the nature of conjecture, but unless the propagation of the Melanistic Mutant is entirely fortuitous, and facts seem against this, there can be no other explanation.

There is one last suggestion I have to make. It is generally agreed that in its wild state the Pheasant is monogamous, or perhaps I ought to say, is by nature monogamous, for in many places it is forced into polygamy. But of recent times, within a few thousand years, it had abandoned the path of virtue and now the cock likes to keep a harem. This being the case it is necessary that more cocks should be killed than hens to preserve the balance of the species. Nature has, therefore, equipped the cock bird with a very eye-taking uniform so that it will be more conspicuous to those creatures that prey on it than the dowdy hen. The livery of the Melanistic cock, however, although undoubtedly handsome, is not nearly so conspicuous as that of, say, *Torquatus* or *Colchicus*. Its greens and greys harmonize excellently with the reeds amongst which it lived in its first incarnation, with the result that the sexes would be killed by vermin in about equal proportions. Does this not seem to point to yet another reversal to the conditions prevailing in the days of the original Pheasant ? I have not had much to do with these birds in their second reincarnation, and so cannot say whether they are monogamous in the wild state. Nor can anyone else, I think, as these birds seem only to have come under observation in the breeding pens where custom allows them many wives.

I freely admit that a lot of the foregoing is conjecture, as indeed is most of the matter in connection with this bird of mystery, and I would not for one moment wish to force my opinions down anyone's throat. It is said, however, that nothing happens in Nature for which there is not a good reason, and it is in an honest endeavour to fathom these reasons that I put forward these suggestions.

[Whether the Melanistic Pheasant, which is now known as *Phasianus colchicus* mut. *tenebrosus*, is a reversion to the original type or not is difficult to prove, but similar mutants have appeared in other species, such as the Golden Pheasant and the Peacock, in both of which the variety breeds true to type and, moreover, the melanistic blood seems to predominate. Melanism, when it appears as a "sport" is very

persistent, as is seen in the melanistic race of leopards in the Malay States where it has swamped the normal type, but there is little doubt that it first appeared as a mutation. Black rabbits are common in certain districts, and their numbers increase rapidly though, being far more conspicuous than the normal type, they are more liable to destruction.—Ed.]

NOTES ON THE SPLENDID OR SCARLET-BREASTED PARRAKEET

(*NEOPHEMA SPLENDIDA*)

By S. Harvey (Adelaide)

The colouring of an adult cock is wonderful, the coloured plates do not do him justice, the wax-like sheen of blue on the head is remarkable. There are two shades of blue, the face is royal blue shading into turquoise blue. The brilliant scarlet chest follows on from the royal blue and extends more than half-way down the belly, shading into pale yellow, faint scarlet spots continue on in the yellow.

A young cock taken from a nest in August was not showing the scarlet at the end of December, by the end of February a considerable amount of scarlet was showing, breaking through the green feathers. I should say it is at least two years before a cock is fully coloured. An adult hen has two or three dull red feathers under the green on the chest. I thought one of my birds was a young cock as these red feathers were showing, but no further colouring has taken place in six months, so I am convinced that this is an adult hen.

It is strange that these beautiful Parrakeets have shown up in three different parts of South Australia this season, but only in very limited numbers. Fortunately I have birds from each district, so barring accidents am well set up for breeding.

One Sunday morning a farmer from the west coast of South Australia rang me and said he wished to see the Scarlet-breasted Parrakeets, as he thought he had one, and, naturally, I was very pleased for him to come out. When he saw mine he thought his was like the hen. Some years ago a dead cock bird was found in the same direction,

but about 150 miles away from where this farmer lived. I had a feeling that this must be a Scarlet so took a holiday and motored over, about 400 miles from Adelaide. On arrival at the farm it was dark, but we straight away got a lantern and were taken to a small aviary on the front verandah. My delight, when I saw it was a hen Scarlet, can be imagined. I asked how the bird was caught, and was told that one day a Hawk was seen to catch this bird, and on running over to where the bird had fallen it was found to be injured and very exhausted ; it was taken inside and warmed. It was far too weak to feed, so they mixed up granose, oatmeal and honey, with hot milk and hand-fed it. Gradually an improvement was shown, and after a fortnight it had recovered. While this bird was convalescent it was put out on the verandah and the cock used to fly right down to the cage and, strange to say, no attempt was made to capture him. By the time we arrived the cock was nowhere to be seen. Fortunately I was able to secure the hen bird and she is now in perfect health.

During the trip, which lasted a fortnight, we travelled 1,500 miles, chiefly over unmade bush tracks in sparsely populated areas, but no other Scarlet-breasts were seen.

REVIEW

HANDLIST TO THE BIRDS OF SAMOA

This handlist has been prepared by Dr. John S. Armstrong for the use of residents and visitors to the beautiful Samoan Islands in the hope that it will enable them to recognize and record the habits of this very interesting fauna before the march of time and progress has denuded the hills and bush, with the inevitable result of destruction of the bird-life.

The islanders of Samoa have from time immemorial been in the habit of taming birds and the first discoverers of the islands found " their houses full of Wood-pigeons ". The Samoans, we read, still keep birds in captivity, but not to anything like the extent that was the case when the islands were discovered.

There are some half-dozen species of Pigeons or Doves on the islands, including the remarkable Tooth-billed Pigeon (*Didunculus*)

which has excited the greatest interest ever since its discovery in 1840. The body and legs are those of a typical Pigeon, but the heavy bill is notched on the cutting edge and hooked like the beak of a Parrot.

There is one very beautiful Lory (*Vini australis*), while another, the Ruffed Lory (*Calliptilus solitarius*) of Fiji is often kept by the natives, and escaped birds are sometimes met with in the bush. A most beautiful scarlet-breasted Robin (*Petroica pusilla*), two Kingfishers, a Fantail (*Rhipidura nebulosa*), several species of Honeyeaters, and a very beautiful Parrot Finch (*Erythrura cyanovirens*) are some of the more attractive birds met with of the sixty-three species indigenous to the islands. (John Bale, Sons and Danielsson, Ltd., Great Titchfield Street, W. 1, 8*s*. post free.)

CORRESPONDENCE, NOTES, ETC.

HYBRIDS

I was interested to read Mr. Teague's letter on Hybrids in the April number (p. 84).

In reply to the inquiry there, I can tell him that in my *Records of Birds Bred in Captivity* (Witherby, 1926), the first, second, and fifth crosses the writer mentions, i.e. the two Waxbill (Nos. 185*a* and *c*, p. 216) and the Yellow-rumped Serin × Canary (No. 63*d*, p. 187) were included, though none of the three records are as satisfactory as one would wish, and two only refer to success abroad.

Of the other hybrids reared by Mr. Teague, Cape Canary × Green Singing Finch and vice versa, Linnet × Canary, and Linnet × Green Singing Finch, I have no records at all.

If the breeder would give us particulars in our pages of these successes, they would be of real value, and of especial interest to me, a collector of such records and the possible producer of another edition of my 1926 effort.

E. Hopkinson.

AN OLD BANKSIAN

It may be worth recording that the Banksian Cockatoo whose demise I referred to in the May number proved, on *post mortem*, to have died of old age, and her body apparently showed no trace of the

severe tubercular trouble from which she miraculously recovered many years ago. She is the fifth bird in my collection to die mainly, or entirely, of old age, but all five were aged or fully mature specimens when received, and their total age was quite unknown.

TAVISTOCK.

THE MOULTING OF BIRDS OF PARADISE

Although most of the Birds of Paradise seem to be quite hardy and fairly easy to cater for, their moult seems to be a difficult problem, the new feathers remaining in their sheaths for a long time, and then becoming hard and brittle, and breaking off at the least touch. Then when the birds eventually get through their moult they seem to be listless and weak without sufficient energy to face the winter. I think more birds are lost through this faulty moult than from any other cause, and am sure an article on the subject in the Magazine would fill a much-needed want.

A. MARTIN.

[The condition referred to by Mr. Martin is especially noticeable in the Six-plumed birds (*Parotia*), which naturally live in a very damp climate and there is little doubt that it is due to insufficient moisture. A daily shower-bath would be good for these birds.—ED.]

GRASS FOR YOUNG LOVEBIRDS

Further to my former letter *re* young Masked Lovebirds leaving the nest not fully fledged.

Previously I mentioned the pair of Masked birds in my own aviaries that always produced perfect young ones, their aviary being well covered with grass, principally cocksfoot, prairie grass, and rye. In another aviary, where there was very little grass, two pairs of Masked Lovebirds had young, not fully fledged. These two pairs were transferred to another aviary, well covered with grass, and one of them has since had a nest from which the young left in perfect feather. In another aviary, where some Fischer's Lovebirds were breeding and in

which grass was very scarce, the young left the nest not properly fledged.

It seems to me, therefore, that the solution of the problem is either to supply ample quantities of lawn grass cuttings, or to have the aviary so stocked that the numbers of birds would never be sufficient to destroy the grass growing there. By so doing, the parent birds would be able to obtain from the grass sufficient nourishment to complete the diet necessary to rear the young in perfect condition.

G. Rowland Hutchinson.

IMPORTATIONS OF RARE BIRDS

The enterprising firm of Chapmans, Ltd. (24 Tottenham Court Road, W.), has recently imported two notable collections of birds, one from Abyssinia, the other from Mexico. The former included some rare Starlings, Crowned (*Galeopsar salvadorii*), White-capped (*Heteropsar albicapillus*), Amethyst, Royal, and Superb Spreo; also Donaldson's Touraco and Dinemelli's Weavers. The Mexican collection contained Swainson's and Blue Jays, Clarinos, Mocking Birds, Nonpareil and Rainbow Buntings, Red Cardinals, and the rare Thick-billed Cardinals and others. A very fine collection and all in good condition.

Such collections as these have been few and far between lately, but the fact that they seem to have sold well is an indication of continued or perhaps renewed interest in Aviculture in spite of the present economic conditions. Aviculturists are as keen as ever, though they may not be able to pay the prices they would formerly have given for rare birds.

PRESERVING DUNGENESS

Most of our members, in addition to being aviculturists are keen bird protectionists, and while they do not agree with some of the sentiments, inspired by ignorance, of certain well-meaning but misguided persons who profess to see cruelty in any captive creature, they are most anxious that everything possible should be done to protect wild species that are threatened. Many species which formerly frequented and bred in our country have disappeared while others are in danger.

Hence we feel sure that members of the Avicultural Society will give their whole-hearted support to the movement that is on foot to save from the builders part of Dungeness Promontory, which is one of the few remaining spots on our South Coast where the Lesser Tern, Kentish Plover, and many more of our priceless possessions in bird life have their home.

The land in question is imperilled by an imminent danger of bungalow building along its shores; but the Marquess of Tavistock and others have evidenced their determination that action shall be taken to avert the peril by having nominated two gentlemen as trustees, charged with seeing that all proceeds of the contributions which are now solicited shall be devoted to completing the purchase of two hundred and seventy-one acres of the promontory as a Bird and Nature Reserve. The two nominees who have accepted the trust are Mr. E. G. B. Meade-Waldo, a well-known member of our Society, and Chairman of the Watchers' Committee of the Royal Society for the Protection of Birds; and Dr. Norman F. Ticehurst, author of a standard book on the birds of Kent.

An urgent appeal is now made to everyone who cares for preserving untouched England in its natural state, and especially to naturalists whose interest will be so admirably served if this land can be bought and preserved for all time. Donations of any size, shillings or pounds, will be most gratefully received and should be made payable to the "Dungeness Preservation Fund", and sent to the Honorary Treasurer, Percival Jackling, Esq., O.B.E., Manager, Lloyd's Bank, Ltd., Folkestone.

MEMBERS ASKED TO WRITE

The Editor would like to remind Members that accounts of the doings in their aviaries, although they may seem of no very special importance, are of interest to other members, and they are earnestly requested to write their experiences and send them for publication in the Magazine. Considering the numbers of our members, those who contribute to our pages are very few indeed, and it is sometimes none too easy to fill our pages, so will members please not hesitate to contribute.



Sclater's Crowned Pigeon.
Goura sclateri.

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SCLATER'S CROWNED PIGEON
(*GOURA CRISTATA SCLATERI*)

By T. H. NEWMAN, F.Z.S.

The members of this family of Pigeons are the largest existing representatives of the order, and are characterized by the erect fan-shaped crest which adorns the head as well as by their large size, while they are further distinguished by having the metatarsus covered all over with small six-sided scales; there are sixteen feathers in the tail.

About seven forms are known which are placed in two species. They inhabit New Guinea and some of the neighbouring islands. Little has been recorded about their habits, but they spend most of their time on the ground, frequently on the banks of rivers, and feed on berries and small aquatic creatures. They nest in trees, laying one large white egg. It may be of interest to quote the description of probably the first Englishman to meet with the Crowned Pigeon. Dampier, in the year 1699, wrote: "One of my men killed a stately land-fowl, as big as the largest dunghill-cock. It was of a sky-colour; only in the middle of the wings was a white spot, about which were some reddish spots. On the crown it had a large bunch of long feathers, which appeared very pretty. His bill was like a Pidgeon's. His crop was full of small berries. It lays an egg as big as a large hen's egg. for our men climbed the tree where it nested and brought off one egg."

Sclater's Crowned Pigeon is found in Central and South New Guinea, it was met with by the British Ornithologists' Union Expedition in Dutch New Guinea, large numbers were killed for food, as it appeared almost the only fresh meat to be had. A description of its habits will be found in the AVICULTURAL MAGAZINE, 1929, p. 163. It has nested for several years in Mr. G. H. Gurney's aviaries at Keswick Hall, where young have been hatched, but not reared.

ST. HELENA SEED-EATERS BREEDING SUCCESSFULLY IN A CAGE

By NORMAN G. ALLISON

Perhaps the following account of the success I have attained in the breeding of St. Helena Seed-eaters (*Serinus flaviventris*) in an ordinary canary breeding cage may be of interest to members. I do not suppose for a moment that this is the first time that this species has been bred in captivity, either in an aviary or cage, but my pair have produced their youngsters under quite adverse conditions, and as these Seed-eaters are very good songsters and really quite attractive birds altogether they are well worth breeding.

All my foreign birds are brought in for the winter months, and the sexes separated so that there is less risk of them attempting to breed during the inclement months. Towards the end of February the hen Seed-eater commenced to lay, although she was separated from the cock bird and in a cage together with a hen Green Singing Finch and a cock Grassfinch. She laid three eggs on the floor of the cage, and I then hoped that she would not attempt further breeding until the better weather arrived. However, towards the middle of March she again showed signs of desiring to go to nest so, after a little juggling with cages, etc., I succeeded in clearing a canary breeding cage of its inmates and in one corner fixed up an ordinary wooden travelling cage, and in the other a Hartz-mountain wicker cage in which I placed a nest-pan with felt lining. The cage in question is about 3 feet in length.

The introduction of the cock Seed-eater caused me a little consternation as he was most hostile towards his future bride, and spent most

of his time denuding the lady of the feathers on her head and neck, until she eventually became a veritable rag-bag. However, in due course, eggs arrived in the Hartz cage, but only a very poor attempt was made to build a nest, the hen apparently thinking that the felt lining was quite sufficient for her needs.

She commenced sitting in earnest on the 24th March, but I was not aware of the number of eggs, if any, as the Hartz cage was a permanent fixture and previous experiences with foreign bird breeding had taught me that curiosity often killed ones hopes. On the 8th April the familiar squeaks of young birds could be heard. Then the next pitfall appeared in the shape of suitable food for them to rear the youngsters. No doubt it will be remembered that at this time the weather was extremely cold and no greenstuff was procurable, so I had to fall back upon occasional pieces of watercress, which, by the way, was also very scarce at that time. I also gave the parents a pot of insectivorous food as used for the Softbills, together with a few meal-worms of which they were extremely fond. Of course they also had the usual foreign bird seed mixture. All appeared to be going well, with the hen feeding regularly and the cries of the babies daily getting stronger, until the 15th April when youngster No. 1 was found dead at the bottom of the cage. This one was followed on the 19th with youngster No. 2.

My feelings were now somewhat mixed as I took down the nest and thoroughly washed the Hartz cage, and the only consolation I could get from this failure was from the fact that the weather was so cold and miserable that I could not have blamed a human being forsaking his or her young, let alone a St. Helena Seed-eater.

On the 5th May the hen again commenced to sit, and on the 17th the cries of young birds were again heard. It will be noticed that, whereas the eggs took fifteen days to hatch in the first instance, at the second attempt they actually hatched in twelve and a half days according to my records, although, of course, not being able to examine the nest daily, I may be half a day or so out in my calculations.

All went well with this nest until the 23rd May, when one youngster was found dead on the cage bottom, and my hopes again began to sink. However, knowing there to be still young in the nest, I succeeded

in curbing my curiosity for some days, until I was eventually rewarded in seeing two heads appear over the edge of the nest at feeding time. On the 2nd June the first youngster left the nest, followed on the 5th by the second. Then more trouble occurred, for the cock bird, which all the way through had not been on at all good terms with the hen, commenced to persecute the babies and, had I not luckily spotted him going for one, I firmly believe he would have eventually killed them both—in fact, I now think that the reason the others were found dead was that the cock had killed them through jealousy. I promptly removed him to another cage in sight of the hen and she has done her duty so well that they are now feeding themselves, and I intend to-morrow (9th June) to separate them altogether from the hen.

The two youngsters are very much like the hen in appearance, except that the first one out of the nest is a cock, as he is slightly lighter in body colour with a faint tinge of green on wings, rump, and tail, whereas the other is extremely dark with an obvious hen look.

They were supplied daily with a handful of fresh seeding grass, which at this time of the year is very plentiful, and of which they are very fond, insectivorous mixture, ordinary egg-food mixed with a little rape and maw seed, foreign bird seed mixture, and a hopper of Goldfinch mixture. They also had about *thirty mealworms daily* and, as far as it was possible to ascertain, the hen alone fed the youngsters, and the main items of food were the mealworms, egg-food and seeding grass—they hardly partook of any millet seed during the whole period of rearing.

The youngsters are now twenty-three days old and fine healthy little chaps they look, well repaying the attention that has been bestowed upon them. The hen, by the way, is now thinking about a further effort to bring some more Cockney Seed-eaters into the world.

They are the only foreign birds I have so far succeeded in breeding this year, the reason, I am afraid, being the wretched weather we have experienced in London. Even my Long-tailed Grassfinches, which reared young last year, have done nothing else but fight terribly this year, until they now look very bedraggled, and the hen very bare round the face. I also had the bad luck to lose my hen Gouldian Finch during a particularly severe cold spell, with egg-binding, and upon examining

the nest found she had already laid two eggs, which looked extremely nice, but made me very bad-tempered when I realized that young Gouldians would not be mine this year.

I am afraid these notes are a little long-winded, but perhaps they may serve some good purpose if any of our members are thinking of breeding this very interesting Seed-eater in captivity, and in conclusion would just point out two rather interesting and unusual peculiarities in connection with this species. Firstly, that the hen sings practically incessantly during incubation—a subdued form of the cock's song, and secondly, the extreme animosity shown by the cock towards the hen during incubation, and to the young after hatching.

HYBRID GRASSFINCHES AND OTHERS

By S. McGredy

In the early spring of 1931 one of a pair of Masked Grassfinches died off and the survivor must have paired with a Long-tailed Grassfinch. As I had quite a small flock of the latter in this particular aviary I presume this to be quite a natural result, both these species being so closely related.

The sexes of the parents I am unable to state definitely, but I believe the Masked Finch to be a hen. My supposition is strengthened by the fact that " she " has disappeared for the past ten days and, though I searched carefully to-day, I could find no trace of a carcass. As the aviary in which these Finches are confined is rather a large one with a flight 36 by 24 feet thickly planted with a shelter in proportion, I came naturally to the conclusion that the " Masked " was again nesting.

The hybrids, of which I must have quite a dozen from two nests, are pretty birds and clearly indicate their parentage. Their plumage is a very even mixture of the colours of the " Masked " and " Longtail ", and the same remark applies to their beaks. They have the " mask " of the Masked Finch above the upper mandible, but instead of the mask below the lower mandible they have a round black bib about half the size of that of the " Longtail ". They have a broad black band forming a girdle in the middle of the belly as in the parents.

Whilst quite a pretty hybrid I would not recommend any member to deliberately try and breed them as they are not quite so attractive as the Longtail Grassfinch which, in my opinion, is the prettiest of all the Grassfinches, not even excepting Gouldians.

Grassfinches breed freely with me and I have had, as stated, quite a little flock for some years.

Against all the walls of my aviaries—and covering as much space as possible—I have frames about 12 inches deep covered with cheap garden trellis. After erection these are stuffed with dry heather and once provided I have never known Grassfinches to make use of any other nesting-sites, though plenty are provided inside and out. In fact, all Finches seem to relish the dense natural " hedge " and one never knows what treasure is going to emerge as the nests in many cases cannot be seen.

The great beauty of this type of indoor cover is that one's natural curiosity is kept in bounds as it is practically impossible to go " poking around ". *But*, and a very big but it is, if mice can get into the shelter it is practically impossible to dislodge them without pulling all the heather out.

Some three years ago my man informed me that a lot of birds seemed to have deserted their nests (I am afraid he was poking around against orders). On investigation I discovered, in a bottom corner of the framework, traces of mouse droppings. I examined every nesting receptacle in the aviary—but no mouse. In the end I shook the " hedge " vigorously and out jumped Master Mouse. Not content I started pulling heather out, and inside half an hour, with the active assistance of my man, ten corpses lay on the floor. Unfortunately, I started to pull another hedge in the same aviary to pieces and spoilt a lot of nests. I may add this is the only serious trouble (by serious I mean undiscovered) I have ever had with mice and though half a day was spent in examining the aviary, both inside and out, the method of ingress remains to this day a mystery.

For nesting sites outside I favour clipped box-trees, and I always nail to two stout posts about 6 feet above the top a wooden cover roofed with felt to prevent rain reaching any nests.

During my tour of investigation to-day I discovered in one of these

the tiniest nest I have ever seen and from which flew a cock Green Singing Finch. On inspection the nest contained two newly hatched young and several eggs, and as the Singing Finch lost his mate several years ago I haven't the foggiest idea what the other parent of the nestlings can be. If they survive and the Editor thinks they are worthy of notice I will watch them carefully and record the result in some future issue.

Though I have a mixed collection of several hundred birds, housed in five large and three small aviaries, I have reared few hybrids with the exception of those between Lovebirds (of which I have had several crosses). The only hybrid other than those stated that I can recall to memory was Zebra Finch × Chestnut-breasted Finch (?). The latter I am not quite sure of.

LORIKEETS AND LOVEBIRDS

By Harry A. Collin

Many people seem to have the idea that Lories and Lorikeets are very difficult to feed, and also to keep clean and healthy. I have kept representatives of various species for some years, and my experience is that they are no more trouble than the Seed-eaters. Give them a good draught- and damp-proof shed, with a good layer of sawdust on the floor, and an outside flight and they will be perfectly happy, and will give their owner a lot of pleasure with their beauty and entertaining ways.

They are real acrobats and the most active of the Parrot-like birds, and to my way of thinking certainly the most beautiful.

My pair of Swainson's Lorikeets went to nest last July and hatched two chicks, but for some unknown cause these only lived to about twelve or fourteen days. The old pair went to nest again in January, and have reared one youngster, which is now four and a half months old, and a very fine bird. Incubation took twenty-one days and the young one left the nest when about nine weeks old. Its colouring is very beautiful, but not quite so brilliant as that of the old birds; its eyes are black up to the present.

I feed them on Mellin's Food and Nestlé's Milk, diluted with water, with pure honey in a separate pot, also green food. I also offer fruit, but they rarely touch it except perhaps a grape or two. They will not touch Canary seed, but sometimes will nibble a millet spray. I think this is only for the pleasure of pulling it to pieces. They are exceedingly fond of bathing and this keeps their plumage in lovely condition.

On this treatment they are always in perfect condition and have never had a day's illness during the four years they have been in my possession.

Lord Tavistock advises Dr. Allinson's Food in preference to Mellin's, and perhaps this is better; but as my birds have done so well with the Mellin's I have kept to that.

Referring to Mr. G. R. Hutchinson's remarks in the AVICULTURAL MAGAZINE for February, on Masked Lovebirds leaving the nest partly fledged. I have kept these birds since the first importation, and now have the third generation flying. They are kept in an aviary with concrete floors, both the shelter and flight, covered with sand, and have never had grass. Of course I give them plenty of green food. I have only once had them leave the nest partly feathered. The only difficulty I have had with them is that they will persist in nesting in boxes or husks in the shelter where it is too dry and so there is a large percentage of young dead in the shells. I keep Masked, Nyasa and Red Faced Lovebirds and Cockatiels together and have had no serious disturbance, but when I tried to introduce a pair of Fischer's I soon had plenty of trouble. The Fischer's tried to murder everything in sight, and one afternoon, hearing a noise in the aviary, I ran there and found one of the Fischer's just finishing the last of four young Cockatiels and the other doing its best to slay the mother.

Needless to say, the Fischer's were banished at once, and since then there has been peace in this department.

MORE ADDITIONS TO BREEDING RECORDS

By Dr. E. Hopkinson, C.M.G., D.S.O.

A first list of additions to my *Records of Birds Bred in Captivity* (Witherby, 1926) appeared in the 1930 volume of the Magazine (p. 18). More information having accumulated, the time seems ripe for another instalment, to include both Addenda and Corrigenda. The pages referred to are those of the original volume, and the numbers also indicate the position any new entry would take there.

Preface, p. ix, l. 7. *For the* De Brisay *paragraph, read*: The records given in various books by this author. *Colombes Exotiques*, Paris, 1888; *Dans nos Volières*, Paris, 1889 (Game-birds, Parrakeets, etc.); *Les Passereaux* (? date); *Insectivores Libres et Captifs* (? date); *L'Aviculteur chez l'Eleveur* (? date).

p. ix, l. 14. *For* "Two lists . . . etc., . . ." *read*: Three lists of birds which have been bred in the United States compiled by Lee S. Crandall in 1909 (*Bull. N.Y. Zool. Soc.*, p. 580, 1917 (p. 1447) and 1927 (p. 37).

(Lists of species bred in America have also appeared in recent issues of *Aviculture*, the Journal of the Avicultural Society of America.)

Lists of many hybrids are given in Hachisuka's *Variations Among Birds*, in English, but published in Japan, 1928. Some of them are new to me; when mentioned below, these appear as *Hachisuka*, 1928.

Finches

p. 1, l. 3, of No. 4. *For* 1934 *read* 1924. I should very much like more information about this record; *Mycerobas* has so rarely been imported.

p. 2, No. 8. Rose-breasted Grosbeak. *Add:* Whitley bred them easily in 1926 and 1927; in one case four young were reared from one brood.

p. 3, No. 5. Black-tailed Hawfinch. *Add:* But a recent success (three young reared) is recorded by C. W. Greatorex in *Cage Birds*, 20th April, 1929.

p. 3, No. 10. 1876 was the date of Russ's success with *cyanea*.

p. 3, No. 10, i. *Add:* Lazuline Grosbeak. *C. parellina* (Bp). Découx says (*A.M.*, 1924, 95) that it was bred in France

"some time ago". Later (15th January, 1927) in a letter to me he writes "bred by Abbé Charraud near Bordeaux; no record, but he told me himself".

p. 7. *Add to the* CHAFFINCH record: "Meade Waldo (*in lit.* 25th January, 1930) tells me he has also bred the Canary Islands race, *F. coelebs canariensis*; this was about 1905."

p. 9, No. 39. BLACK-MARKED SISKIN. *Instead of* "Hybrids recorded . . .", *read* "Bred by Gfeller-Rindlisbacher in Switzerland recently, *teste* Découx (*L'Oiseau*, 1927, 61)." *See also* D. G. W., 12th December, 1926, *and add.* p. 180 *before a.* SISKIN × BLACK-MARKED SISKIN. "Bred in Switzerland in 1926" *teste* Découx (*L'Oiseau*, 1927, 61). These two records may, however, refer to one event.

p. 182. Further RED SISKIN × CANARY crosses. *See A.M.*, 1929, 19.

p. 182. A BLACK-MARKED SISKIN × CANARY. *Add:* First bred in 1915 in Germany *teste L'Oiseau*, 1927, 62.

p. 9, No. 44. TWITE. An early record in the *A.M.* which I overlooked of the rearing of two young is to be found in vol. i. *See A.M.*, 1930, 338.

p. 184. Other LINNET hybrids. Teague (*A.M.*, 1932, 84) records the successful rearing of the two additional hybrids, LINNET × GREEN SINGING FINCH and LINNET × CAPE CANARY. I think these successes were also recorded in *Cage Birds* of 20th September, 1930.

p. 10, No. 49. DESERT BULLFINCH. *Add to record:* They also bred with him in the following years (*see A.M.*, 1900, 76). This was the first, and I think only, record for the United Kingdom till *A.M.*, 1927, 202, where Sich records success in 1926, I presume with the typical race.

p. 11, No. 50. ROCK-SPARROW. *Add to the record:* but Meade-Waldo (*in lit.* 25th January, 1930) tells me that he bred "*P. stulta*" a long time ago and that the event was recorded in an early volume of the *A.M.* This record, however, I cannot find.

p. 187, No. 63. ANGOLA SINGING FINCH. *Add to d:* Teague (*A.M.*, 1932, 84) records his breeding of this cross as "Yellow-

rumped Serin (which I take to mean the Angola) × . . . Canary. . . .

p. 14, No. 67. ST. HELENA SEED-EATER. *For from* No record . . . (l. 2) *read* No record for the United Kingdom till Shore-Baily's success in 1925 and 1926 (*see A.M.*, 1926, 328). Neunzig gives nothing further for abroad, except as to hybrids.

p. 188, No. 64, *e*. GREY SINGING FINCH × CANARY. A recent success is recorded in *A.M.*, 1927, 278. (Hartley.)

p. 188, No. 65. *Add:* CAPE CANARY × CANARY. This cross has been reared by Teague, *teste* Teague, *A.M.*, 1932, 84, and also vice versa.

p. 188, No. 68. *Add:* f. GREEN SINGING FINCH × GREENFINCH. One reared by Gilpin in 1930, *teste* Gilpin, *Cage Birds*, 6th September, 1930.

p. 190. CANARY hybrid Records, *a*, *b*, and *c*. But are not these records errors (clerical or otherwise) for the common crosses the other way?

p. 19. *Add* No. 88, i. YELLOW-BREASTED BUNTING (*Emberiza flaviventris* Steph.). In *A.M.*, 1930, 340 A. Martin puts on record his breeding of this species in 1911, a full report of which was sent to *Canary and Cage-bird Life* at the time. The one young bird reared was shown when a year old at Kettering.

p. 19. *For "saharæ" read "sahari"; delete the last para. of the record and read instead:* In 1926 Arnault succeeded in France; *see L'Oiseau*, 1927, 28. "Le premier élevage du Bruant striolé en captivité." This in view of Meade-Waldo's earlier success should be amended by the addition of "en France".

p. 20. *Add:* 94, i. HARRIS'S SPARROW, *Z. querula* (Nuttall). Bred by Shore-Baily in 1931; *see A.M.*, 1931, 252. The first success anywhere and the first known eggs, though these were discovered later in the same summer in far North America.

p. 22. PILEATED FINCH. *Add:* More recent successes in the United Kingdom have been Shore-Baily in 1928 (*A.M.*, 1928, 17) and Thomasset in 1931; two reared (*A.M.*, 1931, 303).

p. 22. *Add:* No. 105, i. RED-CRESTED FINCH, *C. cristatus* (Gm.). Although not uncommonly imported, the first breeding success seems to have been obtained as recently as 1926, when Découx in France reared seven young from three nests built by four-year-old parents. *See A.M.*, 1927, 22 and *L'Oiseau*, 1927, 9. It has been suggested that my record of the RED-CROWNED FINCH (No. 106) really refers to the RED-CRESTED, but I think that the record as given by Russ and Neunzig is sufficiently convincing, and although now hardly ever seen in captivity, there is no doubt that some were imported in the eighties.

p. 23. *Add*: No. 108, i. BLACK-CHEEKED CARDINAL, *P. nigrigenis* (Lafr.). First breeder, Découx in France in 1924; *see L'Oiseau*, 1925).

(To be continued.)

A SAD STORY OF COCKATIELS

By A. C. FURNER

If our Editor can find room for this tale of woe in our Magazine I should be grateful, as I am anxious to hear if any other member of our Society has experienced the trouble which I am having with my Cockatiels. My dates are uncertain, but facts only too certain.

I purchased my first pair of Cockatiels about three years ago, and kept them in an aviary with my Budgerigars. Their nest-box was a rectangular box about 14 by 8 by 8 inches with concave bottom to receive the eggs. The birds went to nest about six months after purchase and as soon as the eggs were laid the cock bird became a fiend, chasing the Budgerie from their nests and generally causing havoc. I had to take them out and the opportunity of young Cockatiels vanished for the first time.

I then divided the aviary into two sections with netting partition, and the birds went to nest again, and about a fortnight later eggs were laid and we were going strong again when, due to dry weather after

rain, the wooden feeding-slide warped and fell out and, of course, the birds eloped and bang went the hopes of young Cockatiels for the second time.

I advertised their loss and the same evening recovered the cock bird, which had fallen down a chimney about half a mile away. The following day a ring on the 'phone told me that my hen had been seen in some allotment gardens about 3 miles away from my aviaries. The cock bird was duly taken out as a decoy and with the aid of the old schoolboy method of riddle stick and string the hen was soon back with her mate in the cage.

I then put them in another aviary and they went to nest again; more eggs. When they had been sitting about eight days I was alarmed to hear the hen bird kicking up a fearful commotion. Investigation found the cock dead on the floor apparently as a result of his sojourn in the chimney. Bang went the hopes of young Cockatiels for the third time.

I replaced the cock bird and last season we had eggs again, and this time I found the hen dead one morning and the cock bird sitting on the eggs.

In a vain hope to save the situation I rang up a supplier and had a new hen put on passenger train, and introduced her the same day to the aviary. From that moment the eggs were never thought of, and bang went hopes of young Cockatiels for the fourth time.

This year, as a crown to my misfortunes, this is what happens: they mate, the hen lays, and for a day or two I see the hen bird out in the daytime and the cock bird in the evening, all according to book. About four days after, both birds are out, and on looking inside I find the eggs broken and apparently half eaten away.

I believe my aviary to be free from rats or mice and have seen no signs of either, so I must conclude that either Mother or Father has a nasty habit, and I think it is Father. This has happened three times since March of this year.

WHITTIER ORNITHOLOGICAL ACADEMY

By Dr. Leon Patrick, President

Reason, observation, and experience—that dependable trinity of science—have taught us that the greatest pleasures of life are those that are available to everyone. They arise from the simple, fundamental things in nature—the beautiful clouds, the ocean with its broad beaches, the mountains, lakes, streams, flowers, trees, and, most intriguing of all, the birds.

Birds are the dominating feature of nature, they have the greatest activity, the greatest emotional variety; they show the highest extremes of beauty in colour and pattern, they have the most striking and highly developed courtship of any group of creatures, and their songs are by far the most beautiful and elaborate music that the world knew before the coming of man.

Birds, in fact, are nature at her best, and we who are interested in conservation are coming to understand that bird life forms an ever-changing background for human life—indispensable, yet always fanciful. And we learn why the birds, with their twenty-odd thousand known species, are man's greatest allies in the struggle of survival.

Yet in spite of their æsthetic appeal and their economic value to mankind many beautiful and interesting species are fast nearing extinction. Like our Passenger Pigeon, the Carolina Conure, and the Heath Hen they will soon be but a haunting memory—unless some concerted, organized, practical plan or conservation is inaugurated to save them.

Others have said all this to a careless and indifferent public. But mere talk, however tangible and sincere, accomplishes nothing. Somebody has to do something—action is what is needed.

Realizing this, a group of far-seeing and unselfish individuals have organized the Whittier Ornithological Academy—the which is a Foundation chartered by the State of California "for the purpose of study, observation, and research along ornithological lines, with especial attention being directed to aviculture as a practical medium of perpetuating those rare and interesting species of birds, both native and foreign, that are threatened with or nearing extinction."

So you see we are engaged in a realistic task of great significance ; especially vital because bird propagation seems to be the blind spot on the retina of the American conscience.

Ten months ago the Academy existed only as a vision in one man's mind. To-day it is a practical reality—a thriving institution with financial reserve, employing three men in the constant care of the greatest bird collection in America.

For this unique avicultural park, together with all it means to natural science and aviculture in particular, all bird lovers are indebted, primarily, to three eminently public-spirited citizens :—

First, to Dr. W. F. Dexter, President of Whittier College, a man whose interest in natural science is both scholarly and practical, and whose vision, advice, and council have helped to formulate the plans and policies of the Academy.

Second, to Mr. F. E. Booth, of San Francisco, a manufacturer who has achieved an unusual business success while actively concerned with bird conservation in its truest sense. As a personal friend of the late J. V. de Laveaga, Mr. Booth voluntarily became plenipotentiary extraordinary for the Academy in its negotiations for the splendid collection of Waterfowl which Mr. de Laveaga had acquired during the past twenty years. That Whittier Ornithological Academy became the happy recipient of this exceptional collection, as a gift from the de Laveaga heirs, is due directly to Mr. Booth's resourcefulness, sagacity, and untiring effort—all engendered by his innate love for birds. Consistent with his usual perspicacity, Mr. Booth visualizes " a near future when Whittier Ornithological Academy will be the show place of the world for wild birds of every kind and from every country on the globe ".

Third, to Mr. W. K. Kellogg, of Battle Creek, Michigan, business executive and capitalist of more than ordinary distinction—a dynamic disciple of all that is good and beautiful in nature, who has contributed and accomplished more for the perpetuation of rare equestrian and avian species than any other man in America.

Being appraised of conditions, Mr. Kellogg voluntarily sponsored the Academy's cause and very graciously provided funds for the transportation of, and the necessary equipment for, the J. V. de

Laveaga Collection of Waterfowl, which, by the way, is the second largest in the world.

In deference to Mr. Kellogg's inestimable help, the Directors of the Foundation have decided that the 35 acre tract on which the birds are now located shall be designated and known as The W. K. Kellogg Bird Park.

The W. K. Kellogg Bird Park is about half-covered with timber in its primeval state, through which runs a small stream — all of which lends itself ideally to treatment as a park and provides most admirable conditions for propagating the birds.

These glimpses will epitomize the set-up at the W. K. Kellogg Bird Park, which is already destined to be the mecca of all bird lovers throughout the world.

That you may have a clearer conception of the magnitude of the J. V. de Laveaga Collection of Waterfowl, a complete list of the species constituting it follows :—

WHITTIER ORNITHOLOGICAL ACADEMY, WHITTIER, CALIFORNIA

Waterfowl Division

The J. V. de Laveaga Waterfowl Collection

Pied, or Magpie Goose (*Anseranas semipalmata*) .	Australia.
Spur-winged Goose (*Plectropterus gambensis gambensis*).	Africa.
Cereopsis Goose (*Cereopsis n. hollandiæ*) . .	Australia.
Blue Goose (*Chen cærulescens*)	North America.
Lesser Snow Goose (*C. hyperborea hyperborea*) .	North America.
Greater Snow Goose (*C. atlantica*) . . .	Greenland.
Ross Snow Goose (*C. rossi*)	Canada and California.
Grey-lag Goose (*Anser anser*)	Asia.
White-fronted Goose (*A. albifrons albifrons*) .	Siberia.
Tule Goose (*A. albifrons gambelli*) . . .	California.
Bean Goose (*A. fabalis fabalis*)	Asia.
Pink-footed, or Short-billed Goose (*A. brachyrhynchus*).	Spitsbergen.
India Bar-headed Goose (*Eulabeia indica*) . .	India.
Sebastopol Goose (Sport from *Cygnopsis cygnoid*)	Siberia.
Emperor Goose (*Philacte canagica*) . . .	Siberia and Alaska.
Common Brant Goose (*Branta bernicle hrota*) .	Arctic America.
Black Brant Goose (*B. bernicle nigricans*) . .	Siberia and Arctic America.

Bernacle Goose (*B. leucopsis*)	Greenland and Spitsbergen.
Canada Goose (*B. canadensis canadensis*)	North America.
Hutchin's Goose (*B. c. hutchinsii*)	Siberia and Arctic America.
Cackling Goose (*B. canadensis minima*)	Alaska.
Red-breasted Goose (*B. ruficollis*)	Siberia.
Chilean Goose (*Chlœphaga dispar*)	Chile.
Magellan Goose (*C. leucoptera*)	Argentina and Magellan Straits.
Ashy-headed Goose (*C. poliocephala*)	Chile and Argentina.
Ruddy-headed Goose (*C. ribiceps*)	Argentina.
Egyptian Goose (*Alopochen ægyptiaca*)	Africa.
Orinoco Goose (*Neochen jubata*)	South America.
Asiatic Comb-bill Duck (*Sarkidiornis melanota*)	Africa.
South American Comb-bill Duck (*Sarkidiornis carunculata*).	South America.
Muscovy Goose (*Cairina moschata*)	Mexico and South America.
Ruddy Sheldrake (*Casarca ferruginea*)	Asia.
African, or Cape Sheldrake (*C. cana*)	Africa.
Paradise Sheldrake (*C. variegata*)	New Zealand.
European, or Common Sheldrake (*Tadorna tadorna*)	Europe and Asia.
White-faced Tree Duck (*Dendrocygna viduata*)	South America.
Fulvous Tree Duck (*D. bicolor helva*)	Mexico.
Wandering Tree Duck (*D. arcuata*)	Philippines and Java.
Javan Tree Duck (*D. javanica*)	West Indies.
Black-breasted, or Red-billed Tree Duck (*D. autumnalis*).	Mexico.
Gray-necked, or Grey-breasted Tree Duck (*D. autumnalis discolor.*)	South America.
Black-billed Tree Duck (*D. arborea*)	Bahama Islands.
Eyton's Tree Duck, or Plumed Duck (*D. eytoni*)	Australia.
Mallard Duck (*Anas platyrhynchos*)	America.
Indian Spot-billed Duck (*A. pœcilorhyncha pœcilorhyncha*).	India.
Australian Black Mallard (*A. superciliosa rogersi*)	Australia.
Philippine Mallard (*A. luzonica*)	Philippine Islands
Florida Duck (*A. fulvigula fulvigula*)	Florida.
American Black Duck (*A. rubripes tristis*)	America.
Yellow-billed Duck (*A. undulata undulata*)	Africa.
Cinnamon Teal (*A. cyanoptera cyanoptera*)	America.
Blue-winged Teal (*A. discors*)	Europe and America.
Garganey Teal (*A. querquedula*)	Europe.
Chestnut-breasted Teal (*A. castanea*)	Australia.
Hottentot Teal (*A. punctata*)	Africa.
European Greenwing (Common) Teal (*A. crecca crecca*).	Asia.
Green-winged Teal (*A. crecca carolinensis*)	America.
Baikal Teal (*A. formosa*)	Siberia.
Falcated Teal (*A. falcata*)	Asia.

Necklaced (Ring-necked) Teal (*A. leucophrys*)	Brazil.
Brazilian Teal (*A. brasiliensis*)	Brazil.
Chilean Teal (*A. flavirostris flavirostris*)	Chile.
Chilean Pintail (*A. spinicauda*)	Chile.
European Pintail (*A. acuta acuta*)	Europe and Asia.
American Pintail (Sprig) (*A. acuta tzitzihoa*)	Arcti : America.
Bahama Pintail (*A. bahamensis bahamensis*)	Bahama Islands.
Red-billed Teal (*A. erythrorhycha*)	South Africa.
European (Common) Wigeon (*Mareca penelope*)	Europe and Asia.
American Wigeon (*M. americana*)	America.
Chilean Wigeon (*M. sibilatrix*)	Chile.
Gadwall Duck (*Chaulelasmus streperus*)	America and Europe.
Shoveller Duck (*Spatula clypeata*)	Europe.
Wood Duck (*Aix sponsa*)	America.
Mandarin Duck (*Dendronessa galericulata*)	China.
Red-crested Pochard Duck (*Netta rufina*)	Siberia and India.
Rosy-billed Pochard Duck (*Metopiana peposaca*)	Central Chile.
Canvas-back, or Red-eyed Pochard (*Nyroc : valisineria*).	America.
Common, or European Pochard (*N. ferina*)	Europe.
Red-headed Pochard (*N. americana*)	America.
Tufted Scaup Duck (*N. fuligula*)	Europe.
European White-eyed (Ferruginous) Pochard (*N. nyroca*).	Europe.
Baer's White-eyed Pochard (*N. baeri*)	China and Burma.
Ring-billed Scaup Duck (*N. marila marila*)	Siberia.
Greater, or Common Scaup (*N. marila nearctica*)	Alaska.
Lesser Scaup Duck (*N. affinis*)	Arctic America.
American Goldeneye (*Bucephala clangula americana*).	America.
Barrow's Golden-eye, Iceland Duck (*B. islandica*)	Alaska.
Bufflehead Duck (*B. aleola*)	Alaska.
Ruddy Duck (*Oxyura jamaicensis rubida*)	America.
Grey Call Duck (Mutant of *Anas platyrhynchos*).	
White Call Duck (Mutant of *A. platyrhynchos*).	

Note.—The classification used in the above list is that of James Lee Peters as set forth in *Check-list of Birds of the World.*

Hybrids

Rosy-billed Pochard × Mallard.
Red-crested Pochard × Mallard.
Bahama Pintail × Chilean Teal.
Falcated × Chestnut-breasted Teal.
European Wigeon × American Wigeon.
Baer's White-eyed Pochard × Red-head Pochard.

SOME REMARKS ON PHEASANTS AND OTHER BIRDS

By G. Beever

A few years ago when I sent my first article to this Magazine on Pheasants I felt rather ashamed of myself, as I thought Pheasants were such easily kept, everyday birds that aviculturists would not be interested in them. Some time afterwards I read in the Magazine that the Editor wanted articles dealing with the more commonly kept birds, as they were of more general interest. Since then I have not felt I was such an intruder when writing anything about Pheasants.

I am still puzzled why thousands more bird-lovers do not keep one or more varieties of Fancy Pheasants. These birds equal any other in beauty, cost little to procure and practically nothing to keep, and above all are hardier than any other ornamental bird. They can be kept in almost any back garden, even in an industrial town. I have seen Golden Pheasants actually reared on a railway siding right in the centre of a large industrial city. There are also hundreds of municipal parks in this country where a few pheasant aviaries would be an enormous attraction. These birds are a never ending source of delight, especially to children.

If only some of these public park committees would erect a few Pheasant aviaries others would be sure to follow.

The great recommendation of keeping Pheasants is that they require no one with special knowledge to keep them in condition. They can be fed just like ordinary Bantams so long as they are given plenty of fresh green food.

An idea I have had in my head for years, which might give an impetus to the keeping of fancy Pheasants, is that a club should be formed, say of twenty or thirty members, each one of whom would be willing to give say one or two surplus Golden Cocks every year. These could be offered in lots of two or three to any municipal park that would construct a suitable aviary. This might start several aviaries in different parts of the country and there is no doubt it would lead to a demand for other species which could be bought from the club on a commercial basis. I should be willing to do my share if any other members would agree to do the same.

A club could also arrange for classes for Pheasants at some of the agricultural shows. There is a class still included in the schedule of the Crystal Palace Bird Show, but Pheasants cannot be shown in cages ; they require small movable pens for the purpose. There would be no difficulty in showing Goldens, Amhersts, and the various Kaleeges as these birds are generally very tame. There are several shows in the U.S.A. that include classes for fancy Pheasants. I have seen Golden Pheasants in small aviaries exhibited at the Ideal Homes Exhibition at the Olympia and they appeared quite at home.

I made an interesting experiment last May when I conducted a party of naturalists round Captain Hopkins's and Paul Lambert's aviaries at Kirby Moorside and Nawton. Most of these people had never seen Pheasants of the fancy varieties before so they were completely unbiased. I drew up a list of about twenty species and asked them to vote on which they considered the most beautiful. I have mentioned in previous articles that I always counted the Amherst cock number one, not solely on account of his striking colouring but because I consider him the most perfectly shaped bird in existence. However, the voting came out something like this : 1, Satyr Tragopan ; 2, Amherst ; 3, Golden ; 4, Peacock Pheasant ; 5, Swinhoe ; 6, Reeves. I do not think anyone can quarrel with this selection. I might say that when I saw the Chinquis Peacock Pheasant at close quarters for the first time with the sun lighting up those wonderful ocelli, I was really taken aback by his quiet but beautiful plumage.

As regards this list, I should replace the Swinhoe by the Edwards. The cock of the latter in plumage appears to be a perfect article, being of an even metallic lustre all over, whereas the Swinhoe does not appear completely finished, owing to parts of the wings being without lustre.

I am afraid some pheasants at Regent's Park are affected by the heavy deposit of London soot and can never appear as bright as those kept a long way from industrial centres. Strange to say the Blue Peacocks do not seem to be affected by the soot, as those in London appear to be as bright and sheeny as those kept in the country.

There is no disputing the fact that the Satyr Tragopan cock is a really wonderfully coloured bird. His plumage is brilliant but not gaudy. I hear Captain Hopkins has now a Temminck cock which

is quite equal to the Satyr. What a pity Tragopans are so expensive. If they were down to £5 a pair they would be in great demand.

What is the reason so few are bred ? Even when eggs are laid they are often infertile, and, when fertile, the chicks generally are killed by some accident or are victims of cats or other vermin. It is almost uncanny the persistence with which the rarest birds are the victims of accidents while the common varieties seem to escape them. I have a theory in regard to Tragopans not breeding which may have some truth in it or may be sheer nonsense. These birds come from high altitudes and in their wild state must be continually climbing about in search of food. In captivity they are put in an aviary built on perfectly level ground and in consequence get no exercise and very likely become too fat and lazy for breeding purposes. Perhaps if some large aviaries were built on a hillside over some rocks or boulders for these birds they would get plenty of exercise and lay fertile eggs. I wish other readers would give their views on breeding Tragopans.

Another point regarding Pheasants that I have never yet seen thoroughly explained is why some breeds, especially Swinhoe's, are nearly always subject to crooked toes. Does this happen because the birds are born weak and cannot walk properly during their first week, thus causing the toes to become twisted inwardly ? I have reared plenty of Goldens, Amherst, and Reeves, but I never had any chicks with crooked toes, so I cannot solve it.

It seems that nearly all the common species of Pheasants will cross, although the hybrids are infertile. I have actually seen an Impeyen × Hokis cock, an extraordinary hybrid, as one is the most metallic of Pheasants and the other the least metallic. Other extraordinary crosses are Soemmerrings × Fireback, Amherst × Swinhoe ; and I have heard this week of a Swinhoe × Reeves which is new to me.

Silver × Reeves seem fairly common, also Reeves × Golden, the cock of this cross being a very fine bird, maroon all over. Perhaps the most extraordinary hybrid ever produced was one between a Guinea-fowl and a Peacock. The parents in this case appear, too, much more distinct from one another than any other two breeds of Pheasants.

While on a visit to the U.S.A. in 1930 an item of news appeared in

all the newspapers to the effect that another American bird had followed the way of the Passenger Pigeon and the Carolina Parrakeet. This was the Heath Hen (*Tympanuchus cupido*), a species of American Grouse which was formerly very common in the New England States, a few being still left on the island known as Martha's Vineyard off the coast of New York. This bird has been highly protected for several years by the U.S.A. Government. However, in February this year an odd cock has again turned up which is believed to be the sole living representative of a once prolific species.

A few years ago the American people, with a few exceptions, laughed at the idea of artificially protecting their native birds, but now they have swung to the other extreme and are protecting birds that do not need it and which are really vermin.

PRACTICAL HINTS ON GOULDIAN FINCHES

The Gouldian Finch (*Pæphila gouldiæ*) is a truly wonderful little bird from the northern parts of Australia. From time to time it is imported freely into Europe but, although ready enough to breed in captivity, very few aviculturists have been really successful in keeping it for any great length of time through lack of knowledge of its requirements. Mr. Teague has taken great pains to find out just what conditions are necessary to ensure success with this delightful bird, and his article, published first in the AVICULTURAL MAGAZINE for May, 1932, contains so many useful hints that I asked him to allow the Avicultural Society to reprint it in pamphlet form, as by widely circulating such information it should be possible to save many Gouldians that might otherwise be lost. Mr. Teague at once gave his consent, and I feel sure that all who admire this lovely species will owe him a debt of gratitude.

The pamphlet is issued with a coloured plate showing both the red- and black-headed phase, and will be found most useful by all who keep foreign Finches. The price is 1*s.* 1*d.* post free from our publishers.

D. SETH-SMITH.

CORRESPONDENCE, NOTES, ETC.

RED-FACED LOVEBIRDS BREEDING. SILVER AND GOLDEN PHEASANTS

In the April number of our Magazine which I have just received there are two points on which I beg to comment.

1. You say that the Red-faced Lovebird (*Agapornis pullaria*) has never been bred with full success in captivity. I am, however, sure that this species has been bred with complete success in Germany during the last three years. A short notice to this effect appeared in the *Gefiederte Welt*; I have forgotten the breeder's name, but Mr. Karl Neunzig, the editor of the *Gefiederte Welt* can certainly confirm my statement.

2. I am very glad to be able to contradict your statement about the Silver and Golden Pheasant as to be nearly extinct (the Silver) or very rare (the Golden) in the wild state.

Luckily, the Silver Pheasant is still abundant in the mountains of South China (Fokien). I can get as many as I want from my bird-dealer, although most of them arrive in a most miserable condition in Shanghai. On the other hand, the insular form of the Silver, viz. *Euplocomus whiteheadi*, which was discovered by Whitehead on the island of Hainan, seems to be extinct. I made great efforts to obtain this Pheasant but all in vain, and a very old resident of Hainan informs me that he has seen none of this Pheasant during the last twelve years. Of Goldens about 300 arrive every spring in our bird market and if somebody would give an order he could easily obtain double the quantity. They arrive from Itchang, each bird confined in a very narrow bamboo basket in which they cannot stand upright and cannot turn. In these baskets the poor birds have to remain for months and are shipped to Hong Kong, Singapore, and India. They are all of exactly the same shades; there is not the slightest difference in colour, as we often find it in tame Goldens. Most of them are cocks. Last year out of 280 I was only able to pick two hens.

ALEX. HAMPE.

[In his *Handbook to the Game Birds*, Ogilvie Grant writes: "According to Abbé Daird, the Silver Pheasant is becoming very rare

in a wild state, and is only found in South China, towards the north of Fo-kien and perhaps in Che-kiang. He says that most of the Golden and Silver Pheasants that one sees in Shanghai come from Japan, where these two Chinese species are reared in captivity."—ED.]

THE REARING OF FOSTER-CHILDREN BY CAYENNE LAPWINGS

One of the most interesting happenings amongst the birds at Lilford at the present time is the rearing of three Common Lapwings (*Vanellus vulgaris*) by two females or a pair of Cayenne Lapwings. (*Vanellus cayennensis*). The latter, natives of South America, resemble our English Lapwing in appearance, but are considerably larger, differently coloured, and are armed with a decided spur on the shoulder of each wing. Delightful aviary birds, these examples have thrived here for some years. In 1931 they made a typical Lapwing's nest and devotedly sat upon clear eggs ; these, four in number, closely resembled certain types of Common Lapwing's eggs, but on the whole were more like those of the Avocet.

Nesting again, in April of the present year, fears were entertained that the eggs might again be infertile. Search was therefore instituted for a Lapwing's nest, which was kept under observation until our doubts were verified. On 7th May three Lapwing's eggs on the point of being chipped were placed under the American bird, the fourth being left with the natural parent. The young, on leaving the nest two days later, behaved as only young Peewits can behave ; they squatted about, reappearing only when they judged from the call of their foster-parents that the coast was clear. From the first they took to earth-worms, and a week later were eating artificial food freely ; and at the time of writing (1st June) are half-grown, partly feathered, and apparently out of all danger.

The Cayenne birds, I may add, have been most devoted parents, incessantly calling when danger threatened and brooding often during the cold, wet spells.

A. F. MOODY.

THE MOULTING OF BIRDS OF PARADISE

I think the difficulty sometimes experienced in moulting Birds of Paradise is largely due to the way in which they are commonly kept—in cages or small aviaries in stuffy birdrooms.

They are essentially birds which need exercise, fresh air, and, if possible, opportunities for bathing in rain- and dew-soaked foliage.

Last winter I obtained a pair of Rothschilds' Birds of Paradise which I was obliged to keep under the usual birdroom conditions. They got stuck in the moult, and would have gone to pieces entirely if left indoors. Soon after being turned into aviaries with outdoor flights they began to improve, and now the moult is again well under way and new feathers are coming nicely. Unlike the Kings, which spend a lot of time in the shelter, they are a great deal in the open air, and are very active, constantly flying about and leaping from perch to perch.

TAVISTOCK.

THE IMPORTANCE OF A BALANCED DIET

I was much interested in Mr. A. Martin's letter *re* the moulting of Birds of Paradise in the last issue, also the Editor's opinion regarding same.

The assumption of the Editor that moisture is no doubt the cause of this, is perhaps right, but I am inclined to believe that it is in the feeding.

In the wild state naturally the birds acquire enough of the natural substances for feather growing and maintenance of body stamina, but the tendency of feeding in captivity leans to an inadequate supply of essential substances.

I believe many of the softbill fanciers still use a dry food as a stock food, and as I have previously mentioned, a dry food is very deficient in essential substances.

I am inclined to assume this condition to a deficiency of fat-soluble substances but, not having had these birds long enough to go through the moult, I am unable to say for sure, it may be through a deficiency

of Vitamin B (water-soluble): this substance is one of birds' greatest needs, but I should not like to confine the cause to any one substance without practical experience of same.

I am not assuming that the cause of difficult moulting is caused by a deficiency in the food without foundation, I have conclusive proof in many instances that it is so. I cannot do better than quote from a letter I have just received from a Mrs. Charrington: this good lady had Budgerigars that left the nest with no feathers on and, on taking my advice to feed the afflicted birds on a balanced food that I supplied, feathers started to grow after about a week, and the birds are now in very fine healthy condition with normal feathers.

Further, I have the assurance of a well known Budgerigar judge and member of our Society, to wit, Mr. E. J. Brown, of Southampton, that he has never had a runner since using the same food, *vide* his letter in *Cage Birds*, 12th March.

The importance of a Vitamin balanced food for all livestock cannot be over-emphasized, old methods must be left behind, as a little illustration of the great value, I give the latest established facts on Vitamin B.

A deficiency of this substance will cause the following complaints:— enteritis, bouts of alternately constipation and diarrhœa, colitis (or inflammation of the large bowel), indigestion, internal organs overlade with fat, unhealthy skin, heart abnormality and paralysis, or polyneuritis. This deficiency causes also loss of appetite, or a depraved appetite (a craving for unnatural foods). Animals eat their fur and excreta, birds plucking and eating their feathers, etc. It can be gathered from this, then, that feather plucking Parrots can easily be cured from this distressing complaint by the administration of adequate supplies of Vitamin B, and is not caused by excessive consumption of animal food, which I believe to be the general opinion, but an unbalanced diet.

It can safely be said that diet causes 95 per cent at least of the complaints in man, beast, and bird. All aviculturists must take advantage of the information that scientists place at our disposal if they wish for success. If they demand an analyst report of the foods they use they will know if it is adequate or not.

P. H. Hastings.

P.S.—If any of our members has a plucking Parrot and will correspond with me I will supply the vitamin substance necessary to bring about a cure; we will then have conclusive proof as to its cause.

P. H. H.

THE MELANISTIC MUTANT PHEASANT

In the article on the Melanistic Mutant that appeared under my name in the June issue of the AVICULTURAL MAGAZINE, there is a slight erratum. I am reported as having written "For some time it was put down as a sport . . . to be classed on a par with black and wild rabbits." I actually wrote "black and *white* wild rabbits", which I think makes better sense.

In view of recent knowledge, I do not think the Melanistic can be considered in the same category as other examples of melanism. The Golden Mutant, known as the Black-faced Golden Pheasant, while breeding true to type, is very difficult to rear, and the eggs are frequently infertile, while the Melanistic Mutant is exactly the reverse. It is the easiest to rear of any, going to covert at a much younger age, and it is strongly fertile. The black rabbit, regrettably enough in my opinion, does not beget black. There is one on a farm I know well. It was there last year, having been seen many times, and always in or around the same spot. No one could bag it. A sweepstake was placed upon its head, but still it eluded guns and ferrets alike. This year it is still to be seen in almost the same spot. But it is still alone in its colouring. It is quite unthinkable that any rabbit should be barren, and though there is not another black one for it to mate with, its progeny, be it male or female, would show some signs of melanism—possibly there might even be a mixed brood, some black some normal. But divil a black hair anywhere save on this particular rabbit. This seems to indicate that the Melanistic Mutant is not to be considered in the same category as other examples of melanism which are, if not actually transient, expiring with the individual, at any rate insecure or infertile.

GEOFFRY H. CLARK.

DEATH OF AN OLD WOODPECKER

Visitors to Foxwarren will be sorry to hear of the death of my old Brazilian Yellow-fronted Woodpecker (*Melanerpes flavifrons*). The bird had been in my possession for seven years, and for some time before this our late President, Mr. H. D. Astley, had him. I believe he was about 15 years old, which is not a bad age for a Woodpecker. He was delightfully tame, and a great pet, and we miss him very much.

A. Ezra.

THE FIDELITY OF A BRAZILIAN TEAL

So much at one time and another has been written about the so-called Lovebird-like devotion of certain pairs of birds in confinement that I venture to place on record the very practical manner in which the bereaved male of a pair of Brazilian Teal quickly consoled himself, and evidently, from his point of view, made the very best of unforeseen circumstances.

Our stock of Brazilian Teal (*N. brasiliensis*) at the time of the occurrence (20th May of the present year) included an unattached female of 1931 and a devoted breeding pair. The latter had been inseparable for several years, and the male, an important little person amongst other Ducks, was ever ready to guard the hen or spend his life fussing around her. On the evening of the 19th instant it was noticed for the first time that the female of this pair (probably a very old bird) was much amiss, the male appearing greatly distressed and trying to induce her to feed. In the morning she was found dying amidst some tall meadow grass ; the male meanwhile, intensely agitated, and piteously calling, was engaged in keeping off some too inquisitive Tree Ducks from the scene. On removing the body some regret was naturally felt at having a rather valuable breeding pair of birds broken, and great sympathy was extended to the pathetic little widower. Concern, however, was entirely misplaced, as by 6 p.m. of the same day he was happily wedded to the lonely little hen (a bird he previously would not look at), and at the time of writing (1st June) still continues by her side.

A. F. Moody.



Zebra Finch.
Tæniopygia castanotis.

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NOTES ON THE BREEDING OF THE ZEBRA FINCH

By H. Jones

Many people seem to find this deservedly popular bird very difficult to breed and these notes are a résumé of instructions I have sent to various fanciers who have been exasperated by their lack of success in their breeding attempts.

Stock.—It is essential that the breeding stock should be equal as regards sexes. If there are more hens than cocks there will be no serious mating. Even one extra hen can upset an otherwise tranquil aviary. The best matings are old cocks with young hens. Cocks are the deciding factor in breeding, for 99 per cent of hens will lay, hatch, and rear young; some 20 per cent of cocks will not take marital duties seriously. The moral is, when you have a good cock who will build a nest, help to hatch and rear the youngsters, and continue to feed them while the hen is busy with second nest, you must value him like the good bird he is and stick to him. I have cocks now in their fourth breeding season and their progeny are quite healthy and virile.

The more pairs one has, without overcrowding, the better will be the results. Single pairs are very rarely successful. The cocks seem

to like the defence of their nests and favourite perches against the intrusion of other birds.

Neither do Zebra Finches breed as well in mixed collections. As soon as the young birds are able to feed themselves, remove them from the breeding aviary. They are very mischievous and soon want a nest for themselves. It is unwise to add even mated pairs to an aviary where the stock have already settled down to serious work. The fact that aviary-bred birds breed better than imported birds goes without saying.

Aviaries.—I find that Zebra Finches do better in a large shelter shed with a small flight than in the usual aviary with small shelter shed and large flight. Heavy rain seems to be fatal to young birds, possibly from the fact that they come from the rainless regions of Australia.

Food.—Staple foods are white millet, Indian millet, and spray millet, all given separately. To each pint of white and Indian millet I add one teaspoonful of cod-liver oil, mix thoroughly with the hands, and allow to stand for twenty-four hours before serving. The tins I mix the seed and oil in I scald out with boiling water after each mixing. Since mixing cod-liver oil with their seed I have never had a case of egg-binding. I lost some dozen hens before using the oil. Canary seed I find too fattening. I give lettuce all the year round and seeding grasses when I can get them. When the birds are breeding they will take mealworms ad lib., and they seem to have a passion for cuttlefish bone when they have young in the nest. So that they may get it quicker, I cut off slices of cuttlefish, about the thinness of newspaper.

When the young first start feeding themselves they eat nothing but spray millet, so it is necessary to see there is always plenty of this about where the young can get at it, i.e. on the floor. They seem to find the other seed too hard to crack at first and many young Zebra Finches seem to be lost at this age because they cannot get sufficient spray millet.

Nests.—The birds will use anything, but I think the best nest is a cardboard shoe or stationery box. Fasten the lid to the box and bend about a quarter of the lid down as a platform. They like the boxes even better if one-half of the aperture thus left is covered with

a piece of cardboard. These boxes have the advantage that, if they are dirty, they can be destroyed and the local shoe-shop is only too glad to replace them. 7 lb. paint tins, with a 2 in. square opening cut in the side make good nests to hang from the roof, but if used should be plentifully punched with holes for ventilation, otherwise they sweat a lot. If the trade-made boxes are used, it is advisable to make the entrance bigger, as I have seen the cock leave so much hay hanging out that he and his wife have difficulty in entering. It is essential to have more nests than pairs of birds, because the old birds always take the youngsters to another nest when they leave the old nest. This gives one the opportunity to clean the old nest or destroy it, if too dirty. I always spray the nest-boxes with paraffin, as well as the hooks and nails they are hung from. For nesting material I take millet sprays after the birds have done with them, cutting them into lengths 7 inches or so in length, leaving about 2 inches of the seeding end on. Then, with a penknife, I slice these into very thin lengths. The birds like this better than grass, as it is stiffer and they can weave a very neat nest with it. I place a little hay at the bottom of the box to form a foundation. I also spray this with paraffin. For a nest lining I cut up wool into 1 in. lengths, and supply a little hair, etc., from packets of canary nesting material. If this is sprayed with paraffin it has a wonderful and cleanly effect on the young birds' plumage. A full nest of young birds can so soil a nest that their tail-feathers are useless when they leave the nest and they are consequently prevented from flying properly and their growth retarded at the most important time. I find the nesting birds only like to line their nests just before the young hatch. I am also convinced that it is fatal to leave a lot of nesting material lying about the aviary. It tempts the cock to start making another nest.

General.—Ring all the young birds. I use coloured celluloid canary rings, of which there are some twenty colours. To further prevent in-breeding, buy or exchange a few cocks from some other breeder, or buy an imported hen or two. Very few imported cocks settle down to breeding in an aviary. Beware of cocks who will not build nests for their hens. They never take the matter seriously. Also cocks who build nests for their own use are never good breeders.

I have had one or two who did this and who had an aversion for the society of hens. The Zebra Finch cock is a beautiful bird and is ridiculously cheap. It seems a pity that his vagaries whilst breeding, coupled with the hens' tendency to egg-binding, should militate against their undoubted charm.

THE ZOO AT MOSSLEY HILL, LIVERPOOL

By Captain S. Stokes, M.C.

An estate of 15 acres, comprising house, well-matured and timbered garden and paddocks, has been opened by its owner, Mr. H. E. Rogers, as a Zoo. It is pleasantly situated on high ground overlooking the River Mersey, and is about 3 miles from the centre of Liverpool, and easily accessible from that city.

I spent a few happy hours there, walking about the lawns and alleys and enjoying the birds and animals, and was astonished to hear that over 60,000 visitors have done the same since the Zoo was opened in the spring. People do not go there to deposit their wastepaper and their orange-peel, but for rest and refreshment and education. I was told there are already sixty season-ticket members.

In view of the British public's undoubted enjoyment of birds and beasts well kept and well shown, it seems a little odd that new Zoos which spring up should create such dislike and opposition in the breasts of public officials in corporations and ministries.

Mr. Rogers demonstrates that it is possible to keep animals and birds in quarters of moderate dimensions, as distinct from "natural surroundings", with perfect success. All his stock looked in good condition as to feet and feather or fur, and this must ultimately be the criterion of a creature's well-being and happiness in captivity. Any shelter-sheds with floors of cement have sleepers of timber over the concrete, and the larger birds' outdoor quarters are mostly floored with ashes or sand.

An old orangery has been turned into a bird house, where I saw a Spix Macaw and a Hyacinthine, various Conures, Amazon Parrots, and Cockatoos. The compartment, with outdoor playroom attached,

was shared by three chimpanzees looking well and jolly. Next came four aviaries with covered shelters and open flights, two occupied by Waxbills and small Finches, one by Laughing Jackasses, Jays, and Choughs, and the fourth by Doves. Here I noticed the beautiful Bartlett's Bleeding Heart Pigeon, the Blue-headed Ground Dove of Cuba, and Australian Plumed Ground Doves. Across the lawn was a large aviary with rocks built up at the back, over which water flowed into a stream along the front. Here were Flamingos, Ducks, and Blue Porphyrios. A greenhouse with the roof lined with plywood had made a very good reptile house, with glass cages down the centre. These were heated by electricity cunningly concealed in perforated natural logs. The reptiles looked well and lively. Close by were pairs of lions, leopards, and wolves, all looking well.

In a range of small wire enclosures containing concrete shelters were Emus, old and young, kangaroos and wallabies of three species, bears and capybaras. Further along were Crowned Cranes, Pheasants, Vulturine Guineafowl, and Curassows of several species. Yarrell's Curassow struck me as being a very handsome sort, and being usually tame would doubtless make a very good liberty bird for a garden. There was also a large aviary with good cover of rhododendron clumps in which were numerous Peafowl and four particularly good Brush Turkeys.

An enclosure with a pond had Bar-headed Geese and Black Swans.

There is a café, pleasantly fresh and cool, where good cold food is attractively served.

SOME BIRDS OF THE VELD

By Geoffery H. Clark

Life is made up of regretting lost opportunities, and I have never ceased bemoaning the fact that I did not make better use of my time in South Africa in studying the myriad bird life that goes to fill the veld. Birds there were of every size and hue, but beyond learning the local names (mostly Dutch, by the way) and in the case of birds I wished for some reason to slay, their habits to a limited extent, I am

none the wiser ornithologically speaking, than when I went out. There are just a few, however, who by reason of size, viciousness, or value, that I can remember a little about and perhaps an account of these might be of interest to members.

The first one is the Secretary Bird. He will probably be so well known that there will be no need to describe him. He is famous for his habit of eating snakes, but from the halo that ignorant people give him, one would think that his entire menu was composed of these noxious reptiles. This alas! is not so, and so far from being a hero to be nationally lauded he is a villain of the worst type. There is nothing he likes more than a brood of young Francolins or possibly a nice, succulent leveret, and so all game-preserving men hunt him to a standstill. This is not so easy as it might be, as the Secretary is endowed with the proverbial cunning of a bagload of monkeys and to bring about his ruin is by no means easy. It usually involves long range rifle shooting unless one can find his roosting tree and lay up for him. As I am pretty hopeless with a rifle, my bag of these birds was limited to one, who for some unknown reason sat tight in some thick cover and rose at about thirty yards in front of me when I was carrying a twelve.

The Kafir or Crowned Crane may sometimes be seen stalking about the veld seeking sustenance, and is sometimes mistaken by the tyro for a Secretary Bird. That they both have crests may serve to heighten this illusion, but the Crane is a much more slender bird and walks with an airy grace that the more solid Secretary cannot achieve. Kafir Cranes may sometimes be seen dancing, apparently from pure *joie de vivre*, but no one as sinister as a Secretary could ever look on life with such joyous abandon. Kafir Cranes are quite harmless and their food—small reptiles and insects—causes no annoyance to anyone.

Herons of several types—I could never determine how many—are common where there are any dams and ponds, and unless one has fish that one wishes to preserve they too are quite harmless. They are sometimes shot on account of a little clump of lacy feathers—an aigrette is, I believe, the correct term—which they carry in the middle of their backs, and with which ladies like to decorate their hats. I was once cajoled into dropping a Heron for this purpose and when

we collected it, we found it was one of the non-aigrette-bearing types! It served me right.

In similar localities to those favoured by Herons may be found a curious bird called the Hammerkop, anglice, Hammerhead. It is a smaller bird than the Heron, and carries itself more on the horizontal than does the Heron. It is dull brown in colour and derives its name from a curious arrangement of feathers on the back of the head which gives it the appearance of a hammer. It is fish-eating and, unless fish are wanted, quite harmless.

One of the most useful birds in the Union is the White Tickbird, also known, I think, as the White Egret, but I am not sure about this. As I said, my knowledge is purely local. Wherever there are flocks of cattle, particularly in moister situations, there one may see Tickbirds, standing rigidly to attention beside the beast they have elected to attend to. Ever and anon they stretch their necks or make a little flight and detach one of the pestilential insects from which they get their name. There is a stiff penalty for killing one of these and quite rightly so. The temptation to do so, however, is surely great, for their pure white plumage would look very handsome if mounted well.

Sometimes one may see, high up in the air, looking like spots in front of the eyes that originate from a faulty liver, a number of birds, wheeling slowly round and round and ever and always descending. They are Aasvogels or Vultures, the scavengers of Africa. As soon as any beast falls sick and looks like dying the Aasvogels begin to congregate. How they know, I could not say. I have heard it said that, so high as to be invisible to human eyes, there are always these birds, vigilantly scanning the veld with their telescopic eyes. They are credited with the power of telling when cattle or horses are nigh unto death, and then begin slowly descending, waiting for their intended dinner to die. Sometimes they will attack him while he is still alive, first tearing out his eyes and then slashing him to ribbons with their terrible beaks. It is also said that within a certain range they cannot see clearly as their eyes are attuned only to long ranges. Certain it is that they always take a much longer time proportionately in doing the last distance to the dying beast, which does look as though they were hunting by scent.

I once came upon a company of them that had just demolished a dead horse. They were so gorged that they could not fly, and just lurched about with a queer drunken dignity. Upon a rock, a few yards from his flock sat the King Aasvogel, supported ludicrously upon an outstretched wing. The others reeled about uttering gurgling, hiccupping cries. The place smelt like a charnel-house. In a spirit of mischief I secured a catapult and flicked up the King as he sat on his rock. He gave a loud cry of protest and tumbled off his rock and straightway engaged in a violent quarrel with one of his courtiers. They were too tight to do each other much damage, however, and nearly overcome with the stench, I left them to it. Later that day they were gone. They will not eat any animal that has been struck by lightning as even they cannot stomach the sulphurous taste of such meat, but apart from this they will clean up any carcase. As such they are useful beasts and are protected by the Government.

Very different is the Lammerfanger (Lamb-snatcher) which is a species of grey eagle. These pestilential birds cause great havoc among the young lambs, but as they are very capable of looking after themselves, do not fall a victim to powder and shot as often as could be desired. I once secured one who was sitting on top of a thorn bush waiting a favourable opportunity to steal one of our lambs. It took me nearly half an hour to stalk within the limited range of a twelve for which I had nothing greater than No. 6, but it was worth it from all points of view.

As well as the Lammerfanger, there are many sorts of Hawks, ranging from the Kestrel, which is very similar in size and colour to our bird of that name, up to the big 6 ft. Eagle Hawks. After the Kestrel comes the Grey Kestrel. He is little bigger in size but looks more like a Wood Pigeon in colour, being grey and white. He has a wicked red eye. Neither of these two is particularly harmful, but occasionally they follow the example of their larger cousins, the Brown and Grey Chicken Hawks, and steal chicks. I must confess, however, that to me the only good Hawks are dead Hawks and I usually attempted to deal faithfully with them.

Owls there were a-plenty, from the Great Horned Owl down to one who so strongly reminded me of our noxious Little Owl that I always

made him an excuse for burning powder. There was also a large white and brown-flecked owl that locally bore the name of Barn Owl. I think it is very very similar to our Barn Owl, but the passing of time has rather dulled my memory for the exact plumage of birds, particularly those I never had occasion to shoot and I could not be too sure whether he was the exact counterpart.

Among the smaller birds the one that fascinated me the most was the Flop-tail or Sakaboola Bird. He was in body about the size of a Blackbird and just as glossily black. Over the shoulder he carried a bright scarlet patch flanked with white. His chief claim to notoriety was, however, his long tail, which frequently ran to 15 inches. It was not stiff like that of an old cock bird, but soft and wavy, and when the bird was flying with the wind it would blow underneath him in an attempt to overtake its owner. In winter, however, they would shed this appendage, and their scarlet shoulder would turn orange and their general sleek blackness would become a rusty green not unlike the hue of an undertaker's frock-coat. During the heavy summer rains they would become so waterlogged in the tail as to be catchable by hand. They have a loud and penetrating " Cheep ! " which goes through and through you. One elected to come and serenade me one hot February day when tempers get frayed. Try as I might with stones and curses, I could not shift that bird. He would make a short flight round the kitchen garden where I was working and then would return and set up this awful noise again. Finally in sheer desperation I got an air rifle and *mirabile dictu*, I hit him.

Crimson Cardinals, or, as I have heard them called, Red Bishops (this seems the opposite of promotion both in adjective and noun), are common objects where there are reeds. In company with their relatives the Yellow Fink (Finch ?) and sundry nameless birds much resembling Sparrows, they live in hundreds in such places. While being unable to place them ornithologically, I should hazard the guess that they are related to the Weavers as they build a most marvellously constructed nest the shape of a gourd out of grass and attach it to a tall reed. While beautiful to the eye, they are a rare old nuisance to the corn, and thousands must be shot annually by exasperated farmers armed with dust-shot.

One of the commonest birds in our district was what we used to

call the Sprew (Spreo ?). It was all black except just under the tail where it had a large white patch. They used to go about in hundreds and do much damage to fruit trees, always, with true avian cussedness picking the best, taking one bite and moving on. Related to this, if local nomenclature can be trusted, was the Green Sprew. This was truly a beautiful bird, far less common than the other. It was about the size of a Blackbird and in colour a wonderful peacock green which in some lights looked almost electric blue. Round the throat and neck (as far as memory serves) there were feathers which would look a rich purple if turned in certain ways. A much prized bird from a feminine point of view, but difficult to secure, and from a masculine point of view not worth the securing.

There is a bird out there called the Cuckoo, but I have never been able to find whether it is the one that comes here. I did not see one, but frequently heard them, and their note is merely a " Cuck ", the " oo " being omitted. Whether our bird alters its note when it migrates south or not I could not say. I expect the name is wrong.

Certainly the bird we called the Skylark is not the bird which made Shelley earn the well merited curses of many generations of schoolboys. It seems to lead a very aimless existence. It climbs aloft to an incredible height in dead silence, and then having choked back the last " Excelsior " emits a loud " Cheeeeeee ", and on this note it descends to earth again. The lower it gets the lower the note gets, so that it sounds rather like a dying pig. It then rests a moment or two and starts afresh.

Among birds known in England are the Hoopoe, very common indeed, the Crow, fairly common (but no Rooks, thank goodness), and, of course, many Swallows and Swifts during the time when they have migrated from England.

It is true that South African birds have practically no song, but they are all capable of a bewildering variety of loud noises. They usually emit these either on the wing or from under cover. They do not for the most part sit on the highest point of a tree and pour out a melody as do our birds at home, for the very excellent reason that long before they had reached the first repeat bar the air would be black with raptores, attracted by the noise and the accessibility of the singer.

NOTES ON THE BREEDING OF A BRAMBLEFINCH CHAFFINCH HYBRID

By The Rev. J. E. Sweetnam

The Editor's recent plea for more contributions from members must be my excuse for this account of the breeding and rearing of a British hybrid which, though somewhat rare of its kind, hardly comes within the scope of the Societies' activities. Nor can I myself claim any special knowledge or experience in this direction, the breeding of this hybrid having come about through the inclusion of a few British birds in a mixed collection of Foreign Hardbills in a small outside aviary—which, by the way, is built on the ancient ramparts of this old town (Taunton), part of which form the eastern boundary of the Vicarage garden, and of the two ancient parishes of St. Mary Magdalene and St. James.

I have had both parents for some three years. The hen Chaffinch was aviary-bred, and is so tame that she flies to the wire whenever I approach the aviary and follows me about for mealworms. Last year the same pair hatched out three young but, unfortunately, I had to leave home that very day, and all died before my return for lack of proper attention and feeding. As last year, the nest was built in an ordinary canary nest-pan hung on the outside wall of the brick shelter (a converted outhouse) and sheltered from the elements by a piece of zinc. This year there was only one fertile egg, which did not increase my prospects of success in rearing, but I left the other three eggs in the nest for a few days and the hybrid has suffered no ill-effects from lack of companionship in the nest. Incubation commenced on 17th May, the young was hatched on the 29th, and left the nest on 11th June. I took the precaution of placing the hybrid in a cage with the door open, where the mother continued to feed it (the sex is not yet evident), until the attractions of the larger world drew it into the aviary, where it is now very much at home, and still making such insistent demands on the mother that I wonder what would have happened had she produced triplets, or even twins. Apart from an occasional and casual inspection of the nest the father took no interest in the proceedings, and made no attempt to feed his strange offspring.

For the benefit of the other inhabitants of this aviary, a number of which were rearing young at the same time, a varied assortment of soaked and dry seeds was available, with green food and seeding grasses supplied daily, but what surprised me most of all was that, for the first week of its separate existence, the hybrid was fed *entirely on mealworms.* About the sixth day I saw the mother feeding with soaked hemp and rape, and I think she also used a very little milk sop. If ever the supply of mealworms ran out the fact was notified immediately by the noisy excitement of the hen and the unseemly language of the hybrid. For the first few days the mother was very careful to break up the worms before feeding, but later she supplied them whole, often two or three at the time, and the number of mealworms that gawky youngster managed to put away was astonishing.

Both parents are already showing evident signs of wanting to go to nest again and, now that I " know the ropes ", I hope to be able to rear all that hatch out but, if all have the same penchant for mealworms, I will have to consider buying them wholesale or breeding the unpleasant things myself!

ODD NOTES ON THE RARER FOREIGN SOFTBILLS

By Sydney Porter

I am afraid that I have been very remiss of late in regard to writing any avicultural notes, but what with ill-health and other things my birds have had to take a second place. Unfortunately, illness has compelled me to part with a great many of my birds, including many old favourites, which has been a great wrench. I contemplated parting with all my birds but kept delaying the evil day until at last it was decided that though I must part with the majority several of the old favourites must be retained, so with a nucleus of about twenty or more birds I am on the way to another adventure into the realms of aviculture. First of all, I couldn't bear to part with my Pittas which were every one's favourites as well as my own, and secondly, a certain gentleman in New Zealand whetted my appetite by sending me certain

rarities from that part of the globe, including five Norfolk Island Parrakeets, so I suppose that in a few months' time I shall finish up with about as many birds as I had before.

The present chapter mainly concerns birds which for the most part have passed into other hands.

Not having had a great deal of garden space at my old house, owing to a very badly laid-out garden where I could not erect aviaries for breeding purposes, I was somewhat restricted in the species which I kept, though my people would no doubt say otherwise! But having moved some time ago into a house where I had an orchard of over half an acre at my disposal I was freer to choose my birds, but once having made a choice I was reluctant to change. The rarer exotic softbills have always been the birds I have kept and even now they still continue to be my favourites. True, they are a great deal of trouble and can never be left to the tender mercies of an employee no matter how much he may evince a liking for birds. So owing to my brother's being equally interested in my feathered family I have not been so tied as I should otherwise have been, for all foreign softbills require unremitting attention, as only those who have kept them can testify.

In the following chapter I offer the reader a few notes on a few of my rarer birds, whose acquisition was an event in my avicultural career as they are seldom seen in the market and only upon rare occasions offered for sale.

The Abyssinian Coucal or Lark-heeled Ground Cuckoo

To the ordinary man in the street and perhaps to a great many bird-keepers the word "Coucal" may mean anything, so I think it is better to give these birds their old though rather cumbersome name, the "Lark-heeled Ground Cuckoos," which at once places them. Though their relationship with the real Cuckoos is not so apparent from a skin, the general demeanour of the live bird at once places it in near relationship to the Cuckoos proper.

Not a great deal has been written about these strange semi-terrestrial Cuckoos for they have never been common subjects in aviculture, being only very occasionally brought to this country, and

consequently they do not get the attention which they deserve. I doubt whether outside the Zoological Gardens there are many in private hands.

More than one species has been bred in captivity, which I think is a rare feat.

The majority of the Coucals live in Africa, where they are found inhabiting the dense undergrowth close to the rivers and other damp and swampy places. They are extremely agile on the ground and run with great rapidity, looking very much like large chestnut-coloured rats when quickly threading their way through the grass and reeds. They are also very active in the trees and when put up out of the grass will rapidly mount to the top of the nearest tree by a series of quick, bounding jumps. When at the top they are difficult to observe owing to their breasts being of a very light colour.

I have seen a great deal of these birds at liberty in Africa and have made a study of several species which came under my notice. As I mentioned before they are seldom seen far away from swampy and marshy places, where they hide in the dense vegetation.

The plumage in all species is very light and soft in texture like that of most Cuckoos, and unless the birds are handled very carefully the feathers soon come out. Most species have a brilliant ruby-coloured eye. Coucals are quite nice aviary pets providing they are kept with such birds as the larger Jays, Pies, etc., for they are dangerous with small birds, in fact in a wild state they supplement their diet of insects, etc., with small birds and mammals. In captivity they readily eat such things as small mice which they swallow whole, and live fish, etc.

Coucals have a great variety of strange calls which rather resemble those of the tropical American Cuckoos. Their usual call is a kind of bubbling noise like water running out of a narrow-necked bottle. These calls are extremely loud and can be heard from a great distance owing to their penetrating quality.

An Abyssinian Coucal which I have at the present time growls exactly like a cat if one goes too near to it. This bird, an old favourite, was given to me by Captain Hammond and is perhaps one of my most striking birds. At first he was shy, not knowing whether to make

friends or not, and now after several years, though perfectly tame, he always needs a little coaxing and talking to before he will take a mealworm from one's hand. He is very gentle and the only time one sees him in anything approaching a temper is when he is holding his own against a pair of Jay-thrushes but in the end he always has to give way to the combined efforts of these two determined birds.

"Cory," for that is his name, is seen at his best when trying to intimidate the Jay-thrushes. His large, fan-like, metallic green tail is spread to its full size and the beautiful chestnut wings are spread so that they almost meet in front of the breast, while the loose, light plumage is puffed out. In fact he then looks quite a formidable adversary.

This bird is easy to keep; in fact all the Coucals are. A good insectivorous food, minced raw meat, a small dead mouse on occasion, and a few mealworms keep him in fine condition. Cold he cannot stand, so we bring him into the bird-room from his outside aviary as soon as the first nip of winter is in the air.

Coucals are beautifully shaped birds, reminding one of Touracos, but unlike these birds the body is held horizontally.

The brilliant ruby eye with its black eyelashes give the bird a quiet and dignified expression which is in keeping with his nature. In the outdoor aviary we have a heap of twigs in one corner through which the grass grows, and in this the Coucal is very much at home, creeping in and out during the whole day.

Two Coucals with which I was familiar in a state of liberty were Burchell's Coucal (*Centrops burchelli*) and the Senegal Coucal (*C. senegalensis*). The former bird is practically terrestrial and lives in the long reeds and grasses in the swampy valleys of Portuguese East Africa, where it is more often heard than seen, owing to its very striking call. The latter bird is more arboreal and is seldom seen on the ground, but frequents the mimosa trees by the rivers and swamps. In a wild state I believe these birds feed to a great extent upon caterpillars.

The White-crested Jay-thrushes

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Not a great deal has been written about these extraordinarily handsome birds, but one sees almost as soon as they come into one's

possession that they belong to the great order of the Timeliidæ or Babblers, though in appearance they differ a great deal from the rest of the order, but their demeanour at once places them. Ever active, cunning, inquisitive, very intelligent with the eye always on the main chance, these birds seem to have a close affinity to the Jays. Though dominating all the other birds in the aviary even though they be twice the size of the Jay-thrushes, they are not aggressive or bullying, always keeping to themselves but allowing no interference from any other bird.

Few birds are more adapted for aviary life, easy to feed, hardy, beautiful even though possessing no brilliant colours, and very affectionate towards each other, to the extent that one woman remarked, " Them be real true Christians, mister, they be so fond of each other ! "

About the size of an English Jay but with a more slender beak, these birds are for the most part a very rich olive brown with a golden sheen, the head, crest, and upper breast is snow white tinged with grey on the nape ; the head is heavily crested with long, loose feathers which blow about in the slightest breeze. A jet-black stripe runs from the base of the beak through the eye to the nape, a combination of colours which make these birds perhaps the most striking of an extraordinary family. Their cries, which are typical of the Babbler family, are not harsh and unpleasant. If a cat happens to be seen around the aviary the noise and commotion made by the birds is terrific. They put the rest of the inmates in a state of tension for hours afterwards. The Timeliidæ are by nature watchmen, and in the wild state very little escapes their vigilant eyes. Should some carnivorous mammal appear on the scene the whole of the bird population for miles around is warned. Sometimes when a party of Babblers have discovered me in the forest or jungle, their cries have been enough to waken the dead, and bird watching has had to be abandoned for a great part of that day.

One of the strangest episodes in bird life which I have ever known concerned a pair of these birds.

An exceptionally fine pair of these birds, which I still have, by the way, lived during the warmer months in an outdoor aviary inhabited

by various Jays and Pies. These Jay-thrushes had very little to do with any of the others except to chase them away if they came to the feeding-pot first. But one day I purchased a pair of Swainson's Long-tailed Jays, which, after a time, I placed in the aviary. The Jay-thrushes seemed spellbound. They followed them about everywhere and just stared at them in the most amazed way, in fact they became the Jays' second shadows. After a time the Jay-thrushes ventured to touch the other birds, very timidly and gently at first, like a child touching something it was afraid of. Gradually they touched the birds all over, occasionally bursting out into the loud, rollicking laugh which causes these birds to be known as Laughing Thrushes, and jumping over the Jays' backs they would stare and touch them on the other side. At times they sit and look, with head on one side, with a rapturous look like a lovesick maiden looking at the photo of her beloved. All day long from morn till night they just followed the Jays and gazed at them in a state of rapturous ecstasy. After a time, one of the Jay-thrushes grew rather tired of this and also not a little jealous of her mate ; if she saw him gazing in the old lovesick way she would jump in between the two, start to preen his feathers, and gradually push him away. He then began to realize that his mate was jealous and disapproved of this strange state of things, so he began to follow the Jay about surreptitiously. If his mate wasn't looking he would gaze in the old lovesick way and perhaps sidle up and gently preen the feathers of the Jay's head, but as soon as he saw his mate had seen what he was doing he would pretend he wasn't doing anything, and sometimes make himself smaller and hide behind the jay, but his wife would find out and immediately come on the scene, get in between the two, and gradually push her mate away. I have never seen rapture expressed in a look such as with these birds. What prompted the Jay-thrushes to behave in this way I cannot say unless it was the huge crests of the Jays which fascinated them ; I am sure it was no sexual impulse for the birds always kept a few inches away and never attempted any familiarities such as feeding the other birds, etc. ; it just seemed as though the Long-tailed Jays had cast a spell over the other birds. The Jays seemed to take very little notice of their attendants, in fact they very seldom resented it. They seemed

not a little bored by the whole business, but though they eventually became the masters of all the other birds they always respected their strange attendants.

The Snowy Egret

If I were asked what I thought the most beautiful thing in the world I would say a Snowy Egret, that lovely embodiment of grace and purity, an ethereal creature of soft, supple curves and dazzling whiteness. But if any reader of this chapter seeks out one of these birds in a zoological garden or elsewhere and sees a bird which has been in close confinement he will be sadly disillusioned. For to compare a captive Egret with a wild one is like making a comparison between a typical London " charlady " and " Venus de Milo ", for a Snowy Egret after it has been in captivity for any length of time and fed upon artificial food, soon loses its grace and " tightness ", the dazzling white plumage gets soiled, and the bird takes on a very dejected demeanour

When seen beside its native swamps and rivers, nothing more lovely can be imagined, especially in the breeding season, when the bird is a mass of filmy nuptial plumes, which alas ! have cost so many millions of birds their lives. These are known as " ospreys " in the plume trade, which is not quite so dead as we are led to believe. The plumes grow from the top of the head, the base of the neck, and the upper back, and when the bird is displaying the whole body seems to be enveloped in a mist of these beautiful feathers.

There is really only one way in which to keep these lovely creatures and that is in a state of semi-liberty ; in a large walled garden or at least in one which has a wire fence all round where the birds may wander with one wing clipped so that they cannot fly away. There the birds will find a great deal of their own food such as worms and various insects and it is there that one can see him as he should be, a fairylike creature of surpassing grace and purity.

To those who are not familiar with this bird I would say that it is a very small Heron, with a body not much larger than a good-sized Pigeon, with a long, curving neck and long black legs and pale green feet, the whole of the plumage being of a dazzling whiteness.

As visions fade with the passing of youth there remains in the

storehouse of memory one scene which will never fade. It is as fresh now as when it was only just impressed on the brain: the picture of a colony of Egrets by the side of a smooth-flowing, translucent, lotus-river. I would that I could convey to the reader a picture of that scene but no pen, brush, or camera would ever be able to catch the peaceful atmosphere of the haven of quietude.

The river wound in snake-like curves, smooth, deep, and oily green, between the banks of tall green rushes and mimosa trees laden with their fragrant blossoms. The surface of the river itself was covered with the still more fragrant blue lotus lilies. A quiet peace enfolded it all and each evening with the coming of the swift tropical twilight a thousand fairy-like forms would gather winging their way with light, buoyant flight from all quarters to rest upon a spreading mimosa tree, which with the weight of the birds and the undermining influence of floods had partly fallen and hung at an angle over the slow-moving river.

Here the birds could be seen in all the glory of their filmy nuptial plumage, unsullied by any spot or mark of dirt. How ethereal they looked in the green twilight and the bright tropical moonlight. I used to think of how many such another scene as this there had been until the plume hunters had found it out and taken their bloody toll and only a few decaying and mangled corpses and dead young told their pitiful tale.

Blue Hunting Pies

Excepting the Bird of Paradise, the lovely Pies of the genus *Urocissa* are perhaps the finest of the Crow-like birds, and while they are not uncommon in the aviaries of amateurs in this country they are not as well known as one would wish. The expense and accommodation needed are deterrents to the popularity of such large birds, for, besides being fairly expensive to purchase, they require a good-sized aviary to themselves unless kept with equally large Pies or Jays, and if one wishes to breed them then they certainly must be kept alone.

The Occipital Blue Pie has been bred on two or three occasions, and I considered myself fortunate some while ago in being able to secure a very fine pair of aviary-bred birds which came to me in beautiful

condition and perfectly tame. These birds were considerably larger than any imported ones I have seen. The British Museum *Catalogue* gives the length as 24 inches. The tails of these birds measured over 20 inches, so it will be seen that they are much larger than the average bird.

Few birds are more active and restless than these large Magpies being continually on the move, and for that reason it is a pity to confine them to a small space. These handsome creatures have all the traits of their smaller English cousins, cunning, alert, inquisitive, and with the eye always on the main chance, very little in the way of food escapes their eyes. They are fond of bathing and keep their wonderful plumage in perfect condition.

A pair of these fine birds in an outdoor aviary planted with natural trees and bushes never fail to attract the admiration of every visitor.

I have never found the birds aggressive to birds of their own size, but they will not hesitate to kill and eat any small bird which they can get hold of.

Owing to their noisiness it is a mistake to keep the birds too close to the house as I know to my cost for when the birds spy a passing cat or dog the noise they make is enough to waken the dead and not only that but all the other Pies and Jays join in. That noise heard at 4 a.m. on a summer's morning is not conducive to put one in a good temper for the rest of the day, and often one's neighbours have something to say as well!

(To be continued.)

BREEDING FIREFINCHES

By Mrs. Christine Irvine

Your note asking members to send their experiences however simple has made me feel that perhaps a small success of mine may be of interest to some of the members with small aviaries. Mine, as you know, is only a converted bedroom, but I have been lucky enough to get my Firefinches to breed and bring up one youngster. The hen came to me in December, she was newly imported and felt the cold

terribly. I kept her by the living-room fire for some weeks, leaving a well-backed up fire at night. She became quite tame, flying about the room, and gradually her cage door was rarely shut. Every afternoon she took her siesta in the hearth and so determined was she to get there that she would return repeatedly if shooed away.

Very early in the spring I secured a mate for her, and they both went up to the bird-room. It was only a few weeks before I saw the cock carrying feathers about, and they built a nest in a branch of a pine-tree I had hung on the wall. The nest was like a Wren's, but they never lined it or used it. Whether because I looked at it, although I did not touch it, or because a Pintail Whydah did I do not know; but they built another high up in a big lettuce-crate I had painted with solignum and filled with soft hay, as a bedroom for the smaller birds. The nest was in the side, and absolutely hidden by branches across the end. The cock knew I could provide feathers, and he would take them off my shoe. He was so insistent that my pillow is quite thin. Shortly he disappeared. He sat nearly all day, and the hen sat at night. During the time they were sitting the Pintail had to be caught; it was difficult and very disturbing, but they were not too upset and sat again as soon as all was quiet. About thirteen days after I first noticed the cock disappear I noticed the hen very much more interested than usual in looking over soil I had carried up and in the mealworms. I started to grub hunt at once, and wrote off for gentles and by great good fortune a friend had a lot of bran that had gone maggotty. These white grubs were devoured. I went into the woods and found numerous grubs and little caterpillars by tree-roots and under the hedges. I carried them home in soil and the Firefinches weren't two minutes picking them out. These with cut-up mealworms and soaked seed and much seeding grass kept them going till the gentles arrived. Unfortunately the cock Canary developed a passion for gentles and mealworms and I had always to provide two dishes far apart, as he would stand over them with wings outspread shouting that they were his. I gave them some dainty every two hours. At the end of the second week or even perhaps a little before, they began to fail a little in their interest. I thought also Mrs. Firefinch did not brood at all night or day. I was sure the baby or babies were dead.

I did not hear that cheering sibilant sound, but I made up my mind I'd bear it till I began to smell something bad. I went about utterly miserable, and then I was given some ants and their eggs. By standing with my ear glued to a crack in the door I at last heard that joyful sound of the young being fed again; probably I had only missed it, as in the whole three weeks I *never* saw the cock or hen visit the nest. Any way, the ants stimulated them to great efforts in feeding, and the ants were most obliging, taking up their abode under a tuft of grass and laying eggs daily I think. I used to move just a little grass at a time, and keep the other ants for another surprise another day.

In a mixed collection even as small as mine feeding for young is difficult, as the dainties are appreciated by more than the parents.

Three weeks and a day after the baby hatched it left the nest—bigger in build than either of the parents, perfectly feathered, and tight in feather. The two little phosphorescent spots by the beak were very noticeable. At first it went often to the nest and slept there at night; and then one night I saw it between its parents roosting and quite grown up. The parents started to mate again before it left the nest, and on the third night that it slept out the hen dropped dead from the perch in the night. I felt terribly sad. She was my favourite bird. Mr. Hicks found egg trouble, possibly caused I think by the day turning suddenly exceptionally cold when I was out, and a great hail-storm coming after a warm morning.

MORE ADDITIONS TO BREEDING RECORDS

By Dr. E. Hopkinson, C.M.G., D.S.O.

Part II—Weavers

Part I (Finches) appeared on p. 149. Since that was written I have been in correspondence with Mr. Teague, who has sent me more information about his hybrids (Linnet, Serins, etc.). He did record most of them, and the after-history of some, in *Cage Birds* of 20th September, 1930. Cape Canary–Canary hybrids, both ways, must be added to his successes.

p. 26, No. 117. YELLOW-BACKED WHYDAH. *Line* 3, *after* 256, *add : and* 1926, 116, *Medal*).

p. 199. *Add :* 116, WHITE-WINGED WHYDAH. (*a*) WHITE-WINGED WHYDAH × GRENADIER BISHOP. Smith of Brisbane, Queensland, bred and reared one bird of this cross in a large aviary of seed-eaters. I saw it in January, 1930, and again in March, 1932. When in full colour it is wholly black, but when I saw it there was the usual out-of-colour tinge of brown. In shape it is something between the father and mother, tail short, bill cream white, with no shade of bluish as in the father. No red or yellow anywhere. The bird was bred in 1926, so is now six years old ; it is a cock and has tried to pair with two or three Orange Bishop hens, but with no result. (*Add this hybrid in its proper places on pp.* 272, 273.)

p. 31. *Correction under* 137, WEST AFRICAN QUAIL FINCH. It was Decoux, not Delacour, who was the first to breed *atricollis* in France ; he had success both in 1921 and 1922. (*See L'Oiseau*, 1922).

p. 32. 139, BROWN-CAPPED FIRE FINCH. *Add to the record :* Decoux bred them in France in 1926 ; in *A.M.*, 1926, 334 he describes his success, " two young reared. The first success in France though the species had been previously bred in Germany, seven young having been reared by Neunzig, 1925–26. (*Bulletin de la Soc. . . . d'Acclim.*, 1927, p. 24)."

p. 32. *Add* No. 139, i. JAMESON'S FIRE FINCH (*L. jamesoni, Shelley*). First breeder Decoux in France in 1928 in a small outdoor aviary ; three young reared. *See L'Oiseau*, 1929, 34.

p. 32. 141. GREEN AVADAVAT. *Add :* Davis (*A.M.*, 1931, 154) records the successful rearing in a cage of two young birds in India.

p. 200. *Add :* 133, *c*, BIB FINCH × AVADAVAT (*? which way*). Smith, when I visited his aviaries outside Brisbane in 1930, showed me a bird which he had bred the previous year ; he was certain that the parents were these two species, but as the event came entirely as a surprise and as there were several examples of both the parents in the aviary, he could not say

definitely which *was* the male parent, but thinks it was as given above. The hybrid was a generally dark coloured little bird with no very distinctive markings, but it had a red beak and showed signs of both parents.

p. 200. *Add : f,* Bronze Mannikin × St. Helena Waxbill. Bred by Miss Robinson, of Camberley, in 1931 ; *see A.M.*, 1931, 231, 288, for a full account. The first young bird reared I saw, but it died later from an accident when fully feathered and fending for itself ; a second from another brood was reared.

p. 202. *Add : c,* Cut-throat × Indian Silverbill. When in Sydney early in 1932 I saw an example of this cross in Mr. Steele's aviary, where it had been bred ; it was about four months old, a uniform dull brown in colour, and in shape resembled a Bengali rather than either parent. The breeder is certain of the parentage.

p. 203. 144. *a,* Diamond Sparrow × Zebra Finch. *Add to record :* I saw one example of this cross at Mr. Smith's in Brisbane in 1930 ; head typically Zebra, belly white or whitish, and a breast-band of black spotted with white. The breeder told me that he had mated many pairs for this cross for many years, but had never bred more than this one bird. When in Australia again in 1932 I saw two of these hybrids in a Sydney dealer's ; they had been bred in captivity but no details as to exact parentage were known. I bought them but did not succeed in getting them home.

p. 203. *Add a footnote to* 144. Mr. Caley, the author of that most attractive book on Australia's birds *What's That Bird?* recently reviewed in the Magazine (p. 110), showed me in Sydney a drawing he had made from the skin of an example of this cross, which had been bred in a Sydney aviary. I forget which way the cross was, but Mr. Caley will no doubt include it (and perhaps illustrate) it in his book on Australian Finches which is to appear very shortly.

p. 33. 146. Melba Finch. *For the record as it stands, read :* First breeder Willford (Isle of Wight) in 1915 ; *see B.N.*, 1915,

323, 261. They were bred for the first time in Germany in January, 1927, and the breeder, von Oesterley, gives an account of the event in *D.G.W.*, 1927, Nos. 9–11); the eggs were incubated by a pair of Cordon-bleus, and the single youngster hatched reared partly by its foster-parents and partly by hand.

p. 203. *a*, ZEBRA × BICHENO FINCH. *Add:* This cross has also been recently obtained in Japan by the Marquess Yamashima, *teste* Hachisuka, 1928, p. 27.

p. 274. 149. ZEBRA FINCH. *To the list of male parents add:* Parson Finch and Masked Grass Finch.

p. 275. *For the hybrid entry No.* 159 *as it stands, read:* 159. Three-coloured Mannikin × BENGALESE; × (*Zebra Finch*).

p. 206. 159. *a*, THREE-COLOURED MANNIKIN × "BENGALESE". *Add:* Whitley reared two broods of five each in 1930, and more in the following year; I saw them—very handsome birds.

p. 206. *Add:* 157. *c*, JAVA SPARROW × "BENGALESE". Bred in Marquess Yamashima's aviary in Tokyo, *teste* Hachisuka, 1928, p. 56. A photo of similar hybrids (or possibly the same birds), also bred in Japan, appeared in *A.M.*, 1931, 322.

p. 275. 150. BICHENO FINCH. *Add:* and with males of the LONG-TAILED GRASS FINCH and YELLOW-RUMPED FINCH, *both in Sydney. Note.*—There must, I think, be some doubt as to which Bicheno is meant in these records; they are only sub-species and much alike. Formerly *bichenovii* appears to have been the commoner cage-bird, but now, judging from what I saw in Sydney recently, *annulosa* (the more northern black-rumped form) is the usual one found in captivity.

p. 275. 158. MAJA FINCH. *Add to the list of male parents:* "Bengalese" (*in Japan*).

p. 207. 160. *c*, CHOCOLATE MANNIKIN × NUTMEG FINCH. *Add:* Mackie reared one in Sydney, 1931, which I saw.

160. *d*, CHOCOLATE MANNIKIN × "BENGALESE". Whitley

reared a full brood in 1929, which I saw; and more in the next year.

Add to b, CHOCOLATE MANNIKIN × CHESTNUT FINCH. Heerman in Sydney reared one of this cross in 1929; I saw it in January, 1930; it showed its double parentage distinctly.

p. 37. No. 161. CHESTNUT FINCH. *For the first three lines of the record* (Russ . . . record), *read:* The first breeder was de Lainsecq in France in 1895. (De Brisay: *Insectivores* . . . Appendix, p. 259, *teste* Decoux *in lit.*, 15th January 1927, who adds that "Russ's record of Linden the first breeder is incorrect". *Continue:* For the U.K., *etc.*

p. 207. 161. *d*, CHESTNUT FINCH × "BENGALESE". *Add:* Whitley bred them freely in 1929—two nests of four and five apiece; they continue to breed.

Add: f. CHESTNUT × NUTMEG FINCH. Bred by Mackie in Sydney in 1931, where I saw it. It was bred in the same aviary where the CHOCOLATE MANNIKIN × NUTMEG was reared. Neither were beautiful to look at, though interesting for their parentage, of which there seemed to be no doubt, almost "no possible shadow of doubt, no possible doubt whatever". In another division of the same aviary was another Munia hybrid, which the owner believed to be a Three-coloured Mannikin × Chestnut, though the parentage was uncertain; it was certainly some Munia hybrid, quite unlike the others in this aviary or any I saw elsewhere in Australia.

Add here or under 164. PECTORAL FINCH. PECTORAL FINCH × CHESTNUT FINCH. Whitley showed one at the Crystal Palace Show, February, 1927; it was not known where or how it was bred, so which was the father and which the mother is uncertain.

p. 37. 162. YELLOW-RUMPED FINCH. *Delete the last three lines of the record, and read instead:* France, Decoux having been able to record "at least thirty bred in five years". *See Bull.*, 1918, 331, and *B.N.*, 1921, 29.

p. 208. *Add:* YELLOW-RUMPED FINCH. *a*, YELLOW-RUMPED ×

Bicheno Finch. Aston Harrison is breeding this cross fairly easily in Sydney in an aviary to themselves; I saw them in February, 1932—quite the handsomest Munia hybrids I have seen.

p. 38. 163. Nutmeg Finch. *Add:* Whitley has bred them every year (or most years) since 1926.

p. 38. 164. Pectoral Finch. *For the record as it stands, read:* First bred by De Lacquer in France in 1895 or 1896 (De Brisay, *Insectivores . . .*, p. 254). In the United Kingdom Howard Williams was the first in 1905, "two reared," A.S. Medal (*see A.M.*, 1906, 68, 118); another success (two reared) is also recorded in *B.N.*, 1913, 291.

p. 38. 167. "Bengalese." *Add:* Whitley is now breeding them quite freely, and of course hybrids.

p. 209. *Add:* 167. *cc*, Bengalese × Maja Finch. Has been bred in Japan, *teste* Hachisuka, 1928, p. 56.

p. 210. 168. *c*, Sharp-tailed Finch × Silverbill. Dr. Glendinnen of Melbourne has bred this cross, the mother being an Indian Silverbill. In 1931 this hybrid mated with a hen Bengalese, and when I visited his aviaries in February, 1932, I saw three of these Trigen hybrids flying about there.

p. 211. 169. Cherry Finch. *Add: b*, Cherry × Long-tailed Grass Finch. Bred by Mackie in Sydney in 1931; I saw it in 1932. *c*, Cherry Finch × Zebra Finch. Was bred in Japan about 1927, *teste* Hachisuka, and when in Sydney (1932) I saw in Mackie's aviaries two which he had just bred there.

p. 211. 170. Indian Silverbill. *Add: c*, Ind. Silverbill × Zebra Finch. Two broods reared by Sich (U.K.) in 1923. *See A.M.*, 1927, 202. *d*, Ind. Silverbill × Cherry Finch. Bred in the Marquess Yamashima's aviary in Tokyo, *teste* Hachisuka, 1928, p. 56.

p. 39. *Add:* 171. *i*, Fire-tailed Finch. *Zonæginthus* (*bellus Lath*). When in Australia in 1932 I saw at Mr. Piers, Sydney, an aviary full of these birds, and the owner (who gave me six) told me that he had bred them there quite freely for

several years. I have never seen any previous record of this; will the breeder not provide one and an account of how he feeds them? as far as I remember he found them do best on plain canary-seed.

p. 39. 172. SYDNEY WAXBILL. *Add after* . . . killed In the U.S.A., Judge Mortimer Smith has bred them, *teste* Crandall's 1927 List.

p. 40. 173. RUFOUS-TAILED GRASSFINCH. *Line* 1, *after* . . . Nzig., 363 *insert:* The first breeder was Taffatz in France in 1894, *teste* De Brisay, *Insectivores* . . . Appendix, p. 248, *and continue* "In the U.K. . . ., etc.".

p. 213. 174. LONG-TAILED GRASS FINCH. *a*, LONG-TAILED GRASS FINCH × MASKED GRASS FINCH. *Add:* I saw one bred by Harrison in Sydney in 1932.

b, LONG-TAILED GRASS FINCH × BLACK-RUMPED BICHENO. Mackie bred this cross in Sydney in 1931, where I saw it. The mother was a Bicheno—the black-rumped *annulosa*, I am nearly certain.

Add: d, LONG-TAILED GRASS FINCH × NUTMEG FINCH. Whitley reared one in 1929 or 1930, which was still alive in 1931; it was a bird in which one could safely say even an expert in hybrids would have difficulty in naming its parents correctly; a salient feature was the red bill. *N.B.*—The father was the red-billed sub-species *hecki*.

p. 214. 175. PARSON FINCH. *Add: e*, PARSON × ZEBRA FINCH. Bred by Mackie in Sydney in 1931 in a mixed aviary; I saw the bird in 1932.

p. 40. 177. MASKED GRASS FINCH. *For the record as it stands, read:* "One of the easiest birds to breed," says Neunzig (p. 368). Decoux tells me that according to De Brisay (*same reference as the* RUFOUS-TAILED GRASS FINCH), Taffatz in France in 1894 was the first breeder. *Continue* "In Great Britain, *etc.* (*to end*)".

p. 214. 177. MASKED GRASS FINCH. *Add: a*, MASKED GRASS FINCH × ZEBRA FINCH. One bred by Mackie in Sydney in 1931, which I saw in his aviary the next year.

(To be continued.)

CORRESPONDENCE, NOTES, ETC.

A CUCKOO AS A PET

It may interest some members to hear of the keeping of a Cuckoo. It was taken in June, 1931, and has been in my keeping for just a year. It was very easy to feed, taking most food offered, such as bread and boiled milk and all insect food, especially crickets, of which a large quantity breed in the greenhouse. It is a very timid bird and dislikes strangers, but is quite tame with those it knows, and feeds from the hand if offered any nice food. During migratory season it was rather upset and I kept it covered up for a few days and fed on raw meat. Then it was put into the warm greenhouse and evidently thought it had reached its warm winter quarters, and was no further trouble. It loves a spray and sits on a table opening the wings and swaying to and fro to get really wet, a most amusing sight. It flies about my bedroom for an hour every day, and is a lovely bird to see, having pretty markings on the neck and lovely long wings and tail rather like a hawk. Quite an interesting bird to keep—it tries to say " Cuckoo " but has not got it quite right yet.

E. Dewer Murray.

HYBRIDS

In compliance with a request from Dr. Hopkinson for details of hybrids and other birds I have hatched and reared in cages and aviaries, I have much pleasure in giving the following details which I hope will interest members.

Having lots of spare time through war disabilities I bred quite a number of small foreign birds and had many successes in hybridizing. This was done more for my own knowledge and amusement than with any idea of records for scientific purposes. Now that I belong to the Avicultural Society I find such notes and records would have been interesting to our members. Unfortunately I can only find scant notes made at the time. My detailed notes of the plumage markings, sexes, months of hatching, etc., were recorded in my canary breeding records book which has got mislaid or lost. Many of these successes

and what became of some of these hybrids was recorded in *Cage Birds* of 20th September, 1930.

In 1925 and 1926 I reared quite a number of Cape Canaries, Green Singing Finches, Yellow-rumped Serins, Zebra Finches, Bengalese, Common Grey, Orange-Cheeked, St. Helena, and Cordon Bleu Waxbills, as well as a nest of Linnets and Goldfinches.

In 1927 I mated a Cock Yellow-rumped Serin to a hen Roller Canary which produced three young, all having the yellow rump of the cock and various other yellow and white markings in the plumage. Cock Green Singing Finch was mated to a hen Cape Canary, 4 young reared. These were pretty hybrids, showing the markings of both parents. They were all strong, vigorous birds, with excellent vocal powers. Cock Brown Linnet was mated to a hen Cape Canary. One young reared —a hen—which strongly resembled the Linnet, except that it had greenish yellow breast markings.

In 1928 I mated a Cock Common Grey Waxbill to a hen St. Helena Waxbill. These hatched and reared a cock and hen, which I exhibited at the Crystal Palace Show in 1929. This same pair again nested in 1929 and reared 3 young. These were also exhibited at the Crystal Palace. One pair of these birds went to Miss Bousfield and the other three to Gamages.

In the same aviary a cock Common Grey Waxbill mated to a hen Orange-cheek Waxbill, reared 2 young, which were also sent to the Crystal Palace, but died upon arrival. A cock Brown Linnet mated to a hen Green Singing Finch, three young reared. These three strongly resembled the Linnet, except they had brighter yellowish green breast markings.

A cock Cape Canary mated to a hen Green Singing Finch, two young reared, strongly resembling the Cape Canary cock, with bright yellow markings.

A significant fact was, that these hybrids showed most of the male parent's plumage, except in the Waxbill hybrids whose colouring was more evenly blended.

A hybrid Yellow-rumped Serin cock was mated to a hen Roller Canary which laid five eggs, one of which was fertile, but did not hatch.

All the Finch hybrids were excellent songsters, especially the Yellow-rumped Serin cross, but I found them all, except the Waxbills, very quarrelsome in the aviaries. *Cage Birds* published what became of most of these hybrids, and I believe some of them are still alive.

In addition to the above I also reared nine Goldfinch × Canary hybrids.

P. W. Teague.

A CRIMSON-MASKED CONURE

It may be of interest to your readers to hear of my experience with my pet Crimson Masked Conure, which I brought from Genoa three years ago, who lives in a cage in my room (or rather on the cage), and goes into it when I tell him. Last August he escaped out of the window, and after an absence of three months he was eventually caught by the means of hanging his cage filled with apples on the tree he was on; he was just eating the last apple on the tree, and it fell to the ground. During the three months I frequently saw him in different orchards and talked to him, but he always flew away when I got closer to him than he cared for! He is finger tame, and often sits on a bush when I am gardening. The thunder-storms and gales did him no harm, and he came back in better condition than when he left me.

Annie Boger.

BREEDING VIOLET-EARED WAXBILLS IN SOUTH AFRICA

There is a note in the May number of the Avicultural Magazine by M. A. Decoux *re* the successful breeding of the Violet-eared Waxbill (*Granatina granatina*) in Germany.

M. Decoux mentions that he thinks that this is the first time this species has successfully reared its young in *any* aviary.

Out here, these birds breed regularly with at least three aviculturists.

Normally they are single brooded, but become quite prolific in captivity, more especially aviary-bred specimens.

In April last, I sent two pairs of aviary-bred Violet-ears to Germany, and I am sure the owner will have no difficulty in getting them to go to nest.

I may mention, that it would be practically impossible to successfully rear young without an abundance of live insect food.

We in South Africa are fortunate in having an inexhaustible supply of termites (*Eutermes trinervius*) at all seasons.

MELVILLE CARLISLE.

PRETORIA,
SOUTH AFRICA.

GOULDIAN FINCHES

There appear to be a good many aviculturists in this country who have realized the value of the Gouldian Finch in captivity and the ease with which it may be kept and bred when treated correctly, and all of these will have read with great interest and gratitude Mr. Teague's exhaustive article on the subject, which has been reprinted in pamphlet form. It gives many hints and tips of the greatest value to all who keep, not only Gouldians, but any of the ornamental Finches and Waxbills. I hope that members will purchase this pamphlet to give to their friends and so help to broadcast the correct treatment of these lovely birds. It contains a coloured plate showing both the red- and the black-headed phases, and is to be had post free from Messrs. Stephen Austin & Sons, of Hertford, for 1*s.* 1*d.*

D. S-S.

THE INDEX-GUIDE

I should like to remind those members who have not ordered their copy of the Index-Guide that they should not fail to add it to their series of the AVICULTURAL MAGAZINE. It is of the greatest use when one wishes to refer to some subject dealt with in previous numbers of the Magazine. It is bound in cloth in the same style as the annual volumes of the Magazine, and can be obtained from Messrs. Stephen Austin & Sons, of Hertford, for 10*s.* 6*d.*, post free.

D. S-S.

1.





2.

3.





4.

Photos by D. Seth-Smith.

1. Ruddy-headed Goose (*Chloephaga rubidiceps*).
2. Ashy-headed Goose (*Chloephaga poliocephala*).
3. Orinoco Goose (*Neochen jubatus*).
4. Maned Goose (*Chenonetta jubata*).

To face p. 201.]

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NOTES ON SOUTH AMERICAN GEESE, SHELD-DUCKS, AND THEIR ALLIES

By J. Delacour

For the past two or three years, I have had the good fortune to keep at Clères all the species of Sheld-ducks, South American Geese, and other closely allied birds, with the exception of the Antarctic Goose (*Chloephaga hybrida*), a sea-dwelling bird, feeding on seaweeds, which so far has proved impossible to keep in confinement beyond a few weeks or months.

They are all, to my mind, extremely attractive, most of them possessing beautiful plumage and fine shape. Practically all species are hardy and more or less inclined to breed in parks or paddocks.

In his first volume of the *Check-list of Birds of the World*, Mr. J. L. Peters, of Boston, rightly puts the South American Geese (*Chloephaga*), its close relation, the Abyssinian Blue-winged Goose (*Cyanochen*), and the Australian Maned Goose (*Chenonetta*), close to the Brent (*Branta*) and Hawaian Goose (*Nesochen*), but, curiously enough, he places the Tree-ducks (*Dendrocygna*) between them and the Orinoco and Egyptian Geese, and again *Sarkidiornis* (Comb-ducks), *Cairina* (Muscovy), *Asarcornis*, and *Coscoroba*, between the latter and the Sheld-ducks in the middle of which one is surprised to find the Australian Freckled Duck (*Stictonetta*).

I am not going to discuss classification in this magazine, but for good reasons I believe that the Tree-ducks, on one side, the Comb,

Muscovy, White-winged, Hartlaub's Ducks, Cotton Teal, Pigmy Geese, Mandarins, and Carolinas on the other, form two quite homogenous groups, very distinct from other waterfowl, while the Coscoroba Swan, Freckled Duck and Pink-headed Duck each stands quite alone, without any close relatives.

The Cereopsis, from Australia, is to my mind allied to the South American Geese, but distantly, and represents a very old type of Goose without much specialization. If we include it in the scope of the present paper, there is little to say about it which is not already known. I always keep a couple of pairs of these fine birds, which require very little water but plenty of grass. They are extremely pugnacious and, unless kept in a very large park, must be given a separate enclosure. They would kill any Goose or any of the smaller Cranes. They usually lay their eggs in the winter; the goslings much resemble the Magellan's, but are larger. They are very easy to rear, either with their parents or under hens.

The South American Geese (*Chloephaga*) all come from the colder parts of South America and migrate more or less widely. They are all rather terrestrial in their habits, and also very spiteful to one another. Only in very large parks, like that of Woburn Abbey, can many pairs be kept together, and under such conditions they may be full-winged as they are generally good stayers. But even then there may be murders in the breeding season. I keep them in separate paddocks, or only one pair in a large garden or enclosure with other Geese of different genera, which, as a rule, they do not molest too much. They only need enough water to be able to bathe. I find the best way to breed them is to let the female sit on her eggs, then to remove them to an incubator a day or two before they hatch and to rear the goslings under hens. The parents will, however, rear them successfully themselves if allowed to. They need a lot of green food from the beginning and are not difficult, growing very rapidly.

Since last year I have had two pairs of the lovely Andean Geese (*C. melanoptera*) from the high, cold plateaux of Peru, Bolivia, and Chili. They are very amusing in their ways and quite tame, the males inclined even to attack one. One pair are separated in a large paddock, while the other one is free in the park, and so far they do

not bully other birds. I have great hopes of breeding them next year. The first and only breeding success was that of the London Zoo during the War. Quite a number of pairs were imported last year by Fockelmann of Hamburg, and Mr. Blaauw bought several also.

The Magellan or Upland Goose (*C. picta*, according to Dr. Hellmayr) is the best known of the genus. I am quite convinced that the so-called *dispar* is but a colour phase, in which the male has a black barred instead of pure white breast, the females always being identical. This fine species is very easy to breed and a great ornament to any garden. For the last twenty-five years or so I have always kept a pair or two, and bred them regularly. It is distributed throughout the southern parts of South America and the Falkland Islands.

The Ruddy-headed Goose (*C. rubidiceps*), from the Falkland Islands, is a pretty little bird, rarer and more delicate than the previous one, but hardy enough and not difficult to breed as a rule. Personally I always had bad luck with them and never bred one! I have now several pairs, some being young imported birds. This year a pair produced eggs but they were destroyed by Crows.

The Ashy-headed Goose (*C. poliocephala*), a very handsome bird from the extreme south of the Continent, is quite easy to breed and ought to be much more popular than it has been so far. It is hardly larger than the Ruddy-headed and both sexes, as in all species but the Magellan, are alike. But it is always easy to tell the male in any species of this genus by his larger size and whistling voice, while the female has a harsh cackle. From one pair bought from Mr. Blaauw in 1920 dozens have been bred here, from three to twelve every year, in spite of all the birds in Europe belonging to the same family.

The Blue-winged Goose (*Cyanochen cyanopterus*), which inhabits the high plateau of Abyssinia only, is very similar in shape and ways to the South American Geese. It has only a rather flatter bill and a slightly graduated tail. It resembles the above Geese in every way, but has a funny way of sinking its neck in the feathers of the mantle. The female has a softer voice than most of the group; the male whistles. They are rather spiteful, but I have kept my breeding pair for several years on the lake with hundreds of other waterfowl and they do not seriously molest them. Another pair, in a large field,

proved rather vicious to Sheld-ducks. The goslings are more delicate than in most species, reminding one of Sheld-ducks in their requirements. I bred three this year. I believe these Geese require a large garden or park, with plenty of water, to be induced to nest. I found them perfectly hardy and more aquatic than *Chloephaga*.

The Maned Goose (*Chenonetta jubata*) is a lovely diminutive of the above genera, very confiding and nice in its ways. Although they resemble the above-mentioned Geese in their shape, these birds are quite different in many ways: the female displays to the gander, in moving her neck to one side and calling, like Sheld-ducks and true Ducks do, and she nests in holes in trees. This species is quite harmless but rather uncertain in its breeding dispositions. I never bred any, although I have had two or three pairs for many years. But they have several times bred in captivity and Mr. Ezra had two broods this year.

We now come to birds with broader and flatter bills.

The Orinoco Goose (*Neochen jubata*) is a pretty and quaint bird from the hot parts of South America, where they live on the banks of the large rivers. They are not very aquatic in their habits and do not prove quite hardy, being susceptible to cold, damp nights. Although I have kept some for many years in the park even in winter, it is better to shut them up at night during the cold season. They have often been bred, especially by Mr. Blaauw, but none ever laid an egg with me. For the last few years they have been regularly imported from Para. The male has a rather pretty whistle and is very amusing in his display; the female has a loud quack and displays like a Sheld-duck. They are very fussy but not really vicious, and can be associated to most Ducks and Geese.

The Egyptian or Nile Goose (*Alopochen ægyptiaca*) is a very common African bird, and also very common in Europe where it breeds freely. The male has a curious husky voice, but the female quacks loudly; they are very spiteful to Geese and Sheld-ducks. The chicks resemble young Sheld-ducks.

I keep in a pen a curious semi-albinistic male in which all normal colours appear as very pale; it is a handsome bird. I put an

ordinary female with him but so far they have not bred. This Goose crosses easily with Magellans, etc., and Sheld-ducks. A hybrid between this species and the Orinoco Goose was bred in the London Zoo some years ago.

THE SHELD-DUCKS (*Casarca*) are shorter in their legs and both sexes have resounding—although different—voices. Their bills are also flatter and slightly turned up at the tip. They are extremely spiteful among themselves and to small Geese, and it is better to keep each pair separate or associated only with smaller Ducks of which they take no notice, or much stronger birds such as Swans. As far as my experience goes, they breed much better when they enjoy semi-liberty in a large garden or park with plenty of water, although they have often been bred in small enclosures. The young ones are reared like Geese, but require rather more animal food. But both adult and young need much grass and other green food.

THE RUDDY SHELD-DUCK (*C. ferruginea*), which is found throughout the south and east of Europe, North Africa, and Asia, is by no means rare in captivity and breeds freely. I have reared young years ago, but now only keep one female paired to a Rajah Sheld-duck and producing every season interesting hybrids.

THE SOUTH AFRICAN SHELD-DUCK (*C. cana*) is a little smaller, much prettier and rarer than the Ruddy. Up to five years ago they were extremely rare in Europe, when some pairs were imported to Holland and England. I then procured several but lost some and in 1930 was left with one drake and two ducks. The Berlin Zoo, where some had been reared that same year (as well as at St. James Park), sent me one drake as an exchange; paired to an imported female and let out on the lake, they produced eight youngsters in April, 1931, six of which were reared to maturity under a hen. It is remarkable that this drake has bred at less than a year old. This year six eggs were first laid in March out of which three young were reared, and again eight in April, which we mistook for Common Sheld-duck's, and three more were bred. Pairs put in large enclosures, with good-sized sections of the river flowing through, did not nest. Up to recent years this species was considered as impossible to breed in captivity; I believe it requires plenty of space. These birds are not

too spiteful and do not really bully other birds, with the exception of the other Sheld-ducks, though they do not appear to mind Common Sheld-ducks (*Tadorna*).

The Australian Sheld-duck (*C. tadornoides*) is perhaps the handsomest of all. It has been imported now and then, but so far never bred. I have now a fine acclimatized pair. They are very pugnacious and must be kept separate.

The Paradise Sheld-duck (*C. variegata*), from New Zealand, is also a fine bird, especially the female with her pretty white head and mahogany-red body. An extremely vicious species, to be kept separate or with small Ducks that it does not mind. Before the War I bred them in quite a small pen and it has been also kept thus in many Zoos or collections. Now, although I have had three fine pairs for several years kept in large enclosures, one even at liberty in a 50-acre deer paddock, I never had an egg from them!

The Rajah Sheld-duck (*Rajah rajah*) is a peculiar and very handsome bird, the rarest of all in captivity. I have had two males in my garden for six years and found them altogether harmless and hardy. One would have paired to an Orinoco Goose, while the other one has mated to a Ruddy Sheld-duck and produced so far five hybrids with her. They completely disregarded female Common Sheld-ducks. These drakes have a soft whistling voice like the Common Sheld-duck. My second male is now paired to a hybrid female of 1931, and I hope to breed three-quarter blooded birds next year and so gradually come back to pure Rajah, as I believe my birds are the only ones in confinement and hopes of getting new imported ones are remote. The hybrids have the shape and size of the Rajah; they are dark red in colour with white neck and head, the latter having a light brown patch on the top; bill and feet greyish flesh colour.

The Common Sheld-duck (*Tadorna tadorna*), of Europe and Asia, is too common and well known to be dealt with in detail here. I always keep two or three pairs on the lake and find them harmless, good breeders and extremely ornamental.

Finally, I shall mention the lovely *Pseudotadorna cornuta*, from Corea and Eastern Siberia, only known by three skin specimens, either exceedingly rare or extinct, but kept in Japanese gardens until last century.

All these beautiful Geese and Sheld-ducks ought to be much more widely kept and bred in confinement, as they are most interesting and attractive, and many are already becoming scarce at liberty and may soon become extinct.

THE BREEDING OF THE CHINESE BAMBOO PARTRIDGE

By G. H. Gurney

The Chinese or Russet-tailed Bamboo Partridge (*Bambusicola thoracica*) is closely allied to Fytch's Bamboo Partridge (*B. fytchii*), but while the latter is found in the north-eastern parts of India the Russet-tailed Partridge is confined to southern China. A pair of these very showy and attractive birds came into my possession in June, 1931, but made no attempt at breeding last summer, though they very soon settled down and made themselves at home in a good-sized enclosure where there was plenty of cover and long grass and, contrary to so many species of Partridge and Francolin in confinement which are often so terribly shy and wild, my birds from the first were always delightfully tame and confiding, seldom hiding themselves but generally scratching amongst the turf in the flight of the aviary, which is kept mown. From the following description of its plumage it will be seen that this species is a particularly showy bird for a Partridge: the colours are well contrasted, and the male when freshly moulted is quite a smart fellow. Top of the head a rich umber brown, with a few rufous spots; the forehead and lores a beautiful blue grey; back of the neck brownish grey, shading into pale olive brown on the rest of the upper parts; the wing-coverts finely spotted with large chestnut blotches, margined with black and buff; lower back, rump, and upper tail-coverts dusky; tail, chestnut; chin and throat, bright chestnut; breast grey, marked with black and chestnut; rest of the underparts, pale buff. The sexes are almost identical, the plumage of the male being rather brighter, and he is a slightly larger bird than the hen. They appear to be perfectly hardy and able to withstand any amount of cold. On 26th May this year the female was missing, and from the

excited behaviour of the male we concluded she was sitting; a few days later the nest was located behind some faggots, concealed by long grass, the hen sitting tight, the cock generally on guard in the near vicinity of the nest, very ferocious now, and dashing at any other bird that ventured too near. Five eggs were laid: they were of a creamy white colour, thinly spotted with brown spots which were larger and more numerous at the big end of the egg. The eggs hatched on 7th June and in a very few days the young were following the old ones round the aviary, catching flies and searching for insects in the grass; they were beautiful little things, richly marked and spotted with deep brown. Luckily the weather was then fine and warm, and the young throve apace; we fed them for the first ten days entirely on ants' eggs, but they gradually got on to the ordinary biscuit meal and egg food all the gallinaceous birds have here. Small mealworms were eagerly devoured, and it was a pretty sight to watch the young ones rush to their parents to be fed on some tit-bit which the latter had found. The brood was generally divided, half the young ones going with the male, the remainder with the hen. Now, 1st August, the young ones are nearly as big as their parents; and the hen has laid another clutch of seven eggs which have been put under a Bantam.

As I was not quite certain of the identification of this species I sent the male up to the South Kensington Museum, where it was identified by Dr. Percy Lowe from the series of skins there. He writes "Your Partridge is without any doubt *Bambusicola thoracica thoracica* of Temminck."

An interesting account of this Partridge is given by Mr. R. Swinhoe in *The Ibis* for 1863, vol. v, pp. 400–1. He writes: "A pair of immature birds (*B. thoracica*) were brought to me on the 16th August, 1861. They uttered a continuous loud, fowl-like scream . . . This and the Foochow Bamboo-fowl are of very similar habits and notes. This species is found throughout all the hills of Formosa, generally scattered about the bush, never in coveys. It is very pugilistic, the males and females both singing the same loud cry, beginning with *killy-killy*, and ending rapidly with *ke-put-kwai*, which is so powerfully uttered that it may be heard at a great distance. They are not easily flushed, lying so close to the ground that you may walk over the spot

whence the noise appears to come, and rarely put up the bird. Each pair selects its own beat, setting up, frequently during the day, the challenge note; and woe betide any other Partridge that encroaches on the forbidden ground! They both set on him at once and buffet him without mercy till he takes to his heels. This pugnacious propensity often meets, as perhaps it deserves to do, with an evil fate. The Chinese fowler listens for the challenge and sets on the disputed hill a trap with a caged decoy within. The decoy is trained, and sets up a reply. The lord and lady of the manor rush to the spot, and run recklessly into the trap and are caught. The captives are taken to the market and sold as cage-birds, the Chinese having a great love for the horrible screeching cry that this bird is incessantly sending forth."

I do not think that this species has been previously bred in confinement in Great Britain.

[According to Dr. Hopkinson's *Records* the species was bred in Paris in 1868.—Ed.]

TRIALS OF AN AVICULTURIST
THE AMERICAN BLUEBIRD (*SIALIA SIALIS*)

By N. Nicholson

So much having been written of this species in the past that I feel that, in relating my experiences, there may be a possibility of trespassing on the space of our magazine. However, I will leave this to the discretion of our worthy Editor.

Towards the end of March my hen Bluebird, which I had wintered indoors (the climate in this particular district being anything but genial), showed unmistakable signs of wanting to nest. The cock Bluebird, who had wintered indoors also along with the hen, clearly showed that he was not averse to sharing in the good work. The hen shuffled round in the corner of her large flight cage and, upon being given some moss, was not long in conveying to me that she was intent on the propagation of her species. The cock frequently fed the hen, which I knew was a good sign.

I decided to turn them out of doors and allotted a spacious, well-sheltered aviary to them. Several nesting receptacles were hung up around the interior, and it was most amusing to watch them surveying the different nesting sites offered. First one receptacle was overhauled, each bird holding a kind of conversation as to whether it was suitable or not, and then another. This consultation was carried on for about an hour and finally a box, similar to a Budgerigar nesting box, was chosen.

Nest-building soon commenced, and within a few hours of being turned out into the aviary quite a lot of hay and raffia had been placed in the box. The cock took no part in the building of the nest but sat on a bough serenading his wife with his song and continuously flapping his wings.

In due course the nest was completed and pairing took place. Pairing was a noisy affair, the cock, before and after, singing and flapping his wings.

Being anxious to rear at least one pair and knowing the eccentricity of this species in captivity I decided, when the eggs arrived, to take the advice of one of our well-respected members, who has had considerable experience in breeding bluebirds, to place them in the nest of a wild Robin and hand-rear at twelve days old.

Here was a problem—to find such a nest, being rather early for Robins nesting in this particular part. By mere chance I met a friend who lives in the same vicinity and he casually remarked that he had a Robin's nest in a shed in his garden. Arrangements were quickly made and the eggs transferred. The wild Robin's eggs were placed under the Bluebird, as I was determined to give her a chance of rearing young. In fact I felt rather guilty in changing the eggs but consoled myself with the knowledge that if the young were reared by her she would certainly be entrusted with her own offspring in the future.

All went well and after fourteen days' incubation the Bluebird and Robin hatched young. Previous to the young arriving I had made provision for a good stock of gentles, and placed an order for a supply to be brought every three days. I had a good stock of blue-bottles also. The first day passed over and things were progressing

favourably, the hen Bluebird, I occasionally noticed, feeding the young.

I did not molest the wild Robin but was content to observe that the young Bluebirds were receiving her attention.

At this point I may say that each bird laid four eggs and hatched four young respectively.

On the third morning, after replenishing the stock of gentles, I was grieved to see the cock Bluebird fly up to the nest, in the absence of the hen, who was off feeding, and deliberately take one of the young out of the nest and convey it in his beak around the aviary before finally killing it with a sharp stroke of the beak. I immediately went to examine the remainder in the nest and found they were doing quite well. Here was a problem, and what could be done? After much thought I decided not to interfere but to hope for the best. The cock Bluebird took all the young out of the nest and killed them in turn. However, I had the consolation of knowing that the young Bluebirds, being reared by the wild Robins, were progressing favourably.

All went well until the sixth day on the evening of which I paid my daily visit, only to find that a cat had discovered the young and I suppose made a hearty meal of my precious young Bluebirds.

After a period of a week I observed the hen Bluebird carrying nesting material into another box. Hope springs eternal in the human breast and I still had visions of young Bluebirds eventually being mine.

Within another three days a nest was completed and in due course four eggs were laid.

Not being able to locate a wild Robin's nest I decided to let incubation commence. After ten days of incubation I received a telephone message from a friend, 30 miles distant, to the effect that he had been successful in locating a Robin's nest which was situated in a loose stone wall far away from the madding crowd, and I could rest assured that the eggs, should I decide to transfer them, would be quite safe.

Here was another problem, how to transport eggs 30 miles which had been incubated for ten days. However, I decided to attempt it. As a precaution I got a wooden box which was filled with vegetable down (a material something akin to cotton wool) and placed a hot water bottle inside to raise the temperature as near as possible to that

of a small bird. The temperature right, I placed the eggs carefully amongst the vegetable down and drove out to the particular place where I met my friend who conducted me to the nest.

After transferring the eggs I remained a little while to see if the Robin went back to the nest, which she eventually did.

After fourteen days' incubation I drove through to make a personal inspection, and was pleased to find that three young Bluebirds had hatched.

I made arrangements for my friend to keep me posted with information as to how things were progressing and decided to take the young at twelve days and hand-rear them. Unfortunately it was not to be. When the young were seven days old there was a violent storm with a torrential downpour of rain lasting for a whole day. Fearing the worst and having had no word I decided to drive out and, to my dismay, upon arriving, met my friend who had just been to the nest to investigate, and had found the young Bluebirds dead and the nest soaking wet. The nest was situated in a loose stone wall near the top and immediately above it two stones joined with an aperture of about 3 inches. Consequently the rain fell right into the nest and the water drained down into the nest from each side of the stones.

Approximately a fortnight later the hen Bluebird was busy once again carrying nesting material, and chose the same nesting box as previously. The nest was soon completed and five eggs laid. Having in the meantime located a Robin's nest in the same area as the previous one I decided to adhere to the advice already mentioned. The laying of the wild Robin and Bluebird exactly coincided. The eggs were transferred and the wild Robin's eggs placed under the Bluebird as I was still anxious for her to have another attempt at rearing young. Leaving the wild Robin's nest with the knowledge that the Robin had apparently accepted the Bluebird's eggs by her quick return to the nest, I felt that young Bluebirds were going to be mine after all. Curious to relate, the Bluebird refused to accept the Robin's eggs as a substitute for her own and finally deserted the nest.

The day following I determined to drive out and see if everything was in order at the other nest. Imagine my surprise, on approaching, to find that all the Bluebird's eggs were broken, and lay just outside

the nest. One egg, however, at first sight seemed little the worse but, on closer examination, I found that it was pierced—no doubt by the beak of the Robin. You can imagine my feelings once again.

Being in need of an aviary for a pair of Parrot Finches which were quickly coming into breeding condition I decided to separate the Bluebirds. The weather being rather cold at this particular period, I eventually decided on keeping the Parrot Finches indoors for a little longer. Very shortly the hen Bluebird was as eager as ever to go to nest again. I was rather opposed to this, but very quickly came to the conclusion that if I did not accede to her request, in all probability, despite the fact that the cock Bluebird was not within hearing of her, she would certainly deposit some eggs in the corner of her large flight cage.

Very little food of a stimulating nature had been given for quite a long period, but this did not seem to make any difference to her ladyship.

After careful thought and, knowing that as far as nineteen eggs in one season had been laid by the hen Bluebird, I decided on giving one more chance which, although against my wish, was all I could do under the circumstances.

I turned the Bluebirds out into their original aviary and nesting operations began immediately. This time a straw hat was chosen, fixed up in the same manner as for Parrot Finches, a good illustration of which appeared in the magazine for the month of March.

It was quite amusing to watch the hen Bluebird perch on the edge of the hat and suddenly drop down and disappear. In three days the nest was completed, hay, raffia, moss, and horse-hair being the materials used. Five eggs were laid.

Not having been able to locate a Robin's nest suitable I had no alternative but to let the Bluebird go on incubating. All went well and after incubation had taken place for twelve days I received a message from the friend mentioned previously that he had located another Robin's nest in the same area as the two previously, and as far as he could say, incubation had been in progress three days.

Here was another problem, as my Bluebirds were nine days incubated

in advance of the wild Robins and due to hatch within two days. However, I decided to act immediately and transfer the eggs.

A Hedge Accentor's nest was discovered in the same area also, and I decided, for experimental purposes, to place one egg in this nest and place the other four in the Robin's nest. The eggs being duly transferred my hopes ran high once again.

After watching both the Robin and Accentor go back on to the nest I came back home.

The next day I drove out to make an inspection, and imagine my feelings once again, on approaching the Robin's nest, to find all the eggs of my Bluebird broken and outside of the nest. The beak marks—of the Robin I have no doubt—could be seen quite clearly on one egg.

My thoughts were now centred on the Hedge Accentor as the only hope of rearing at least one Bluebird for the season 1932. Upon approaching the nest the bird flew off and, on inspection, I was amazed to find her own three eggs in the nest but that of the Bluebird had vanished. I was not long in finding the egg, it being in the bottom of the hedge, broken, immediately under the nest.

On arriving home I decided to separate the Bluebirds for this year at least, and hope for better things next season if they still remain in my possession.

The questions arising from my experiences are as follow :—

Had the wild Robins in the two latter cases colour sense, and did they know that the blue eggs of the Bluebird were not their own ?

In the case of the Hedge Accentor the egg resembles very much in colour that of the Bluebird but varies a little in size. Did the Hedge Accentor know the difference in size ?

In the last instance also, was it possible that the wild Robin (she having only been incubating for three days as against twelve days by the Bluebird) had the instinct of knowing, from the movement of the young Bluebirds within the shell, that her eggs could not be so far advanced ?

In the small area where the Robin's nests were located to my own knowledge there have been at least twelve broods of young reared to maturity, which I think rules out the question of vermin destroying the eggs. The particular place is miles away from even a village

and scarcely a human being, other than a farmer here and there, is ever seen, so one can safely rule the human element out.

I am perfectly sure that this beautiful species would be comparatively easy to breed if a hole was cut in the wire netting of the aviary when the young hatched, and the parent birds allowed full liberty of a large garden to occupy their time in searching for insect life for the young.

As I only had one pair I thought it rather a risk to take, but should I ever attempt to breed Bluebirds in the future I shall certainly take the risk.

Should any member desire anything exciting in the way of aviculture I can recommend the breeding of Bluebirds and finding wild Robin's nests under which to place their eggs.

I can guarantee him an abundance of excitement and, furthermore, venture to state from experience that he will not sleep much.

A FEW TIT-BITS ON PHEASANTS

By P. J. Lambert

I was pleased to see Mr. Beever's article on Pheasants. I quite agree with many of his remarks. It does seem a great pity that more parks and zoos do not erect a few aviaries for Pheasants. How rarely one sees fancy Pheasants except in private collections. Now what is the more beautiful and inspiring, a few aviaries of Pheasants or a cage of ugly little monkeys ? One could almost compare a bush of wild roses in full bloom to an aspidistra plant ! Monkeys may amuse children but surely God's more beautiful creations are more uplifting to the mind of a child. I also with my friend Beever would willingly give a few Golden and Silver cocks to any Park Committee who wished to start a collection. Most certainly a club should be formed, and this would be the very best method of increasing the number of fanciers. Poultry shows would be encouraged to give us a class, but I do not think agricultural shows would be suitable as these are generally held at this time of the year and most of the Pheasants are in full moult and look a sorry crowd.

Mr. Beever's list of the most striking and beautiful Pheasants is

to my mind wrong. He places them : 1, Satyr Tragopan ; 2, Amherst ; 3, Golden ; 4, Peacock Pheasants ; 5, Edwards ; 6, Reeves. What about the Impeyan and Elliot ? I would suggest : 1, Satyr or Temminck Tragopan ; 2, Amherst ; 3, Chinquis Peacock Pheasant ; 4, Impeyan ; 5, Elliott ; 6, Golden or Swinhoe. But then I am not sure that our common Blackneck does not deserve a place in this list. Examine him closely and I think many will agree with me. Mr. Beever mentions a Temminck Tragopan cock which I have here. This is a remarkable bird. It was dispatched by Mr. A. Hampe from Shanghai and was beautifully packed and in wonderful condition when it arrived about last November. It walked out of its crate as sedately as though it was just emerging from its shelter. In a few weeks it became the tamest Pheasant I have on my place and what is very remarkable, in this its first spring in our country, it has been most fertile and I hope to rear some of his progeny. Is it not exceptional for a freshly imported Pheasant to be fertile in its first year of importation ?

It is certainly difficult to rear Tragopans. I am convinced that they require small insects ; ants' eggs are to my mind the ideal food, mealworms and maggots they are very fond of but these are dangerous and cause purging. Also, give a Pheasant chick mealworms and one has great difficulty in persuading them to eat other foods. If only Pheasant hens would become more broody in captivity half our troubles would be over. I am now watching from my window an Amherst hen which hatched six chicks last Friday ; incidentally, there were no dead in the shell. She spends her whole day finding her chicks minute insects. When any danger threatens she gives her chicks a very sweet high-pitched whistle and they are under her before one can say " knife ". I have just gone out and thrown a tennis ball in her direction and hey presto ! they are " non adsum ". Try and take one of her chicks away from her and she becomes a veritable virago. They are a perfect delight to watch.

Now Mr. Beever suggests that Tragopans do not get sufficient exercise and goes on to say : " Perhaps if some large aviaries were built on a hillside over some rocks and boulders they would get plenty of exercise." He also says : " This may be sheer nonsense." Well ! he has said it ! Why not build a miniature Himalayan mountain and

to ensure the birds having sufficient exercise encircle this mountain with a banked cinder track. Messrs. Gamage would fix us up with a clockwork imitation of a mealworm and this would be fixed to travel round our track at express speed with Tragopans in the wake of our mealworm. We should then hear such expressions as "Come on, Satyr!" "Temminck leads!" "Cabot is in front!" "No! Blyth has won by a beak." The lordly Impeyan cock would be our judge. But, to be serious, I do not honestly think that the trouble lays in lack of exercise. Tragopans are naturally lazy birds. Give them plenty of fruit and tender green food and you will be rewarded with fertile eggs.

I cannot say I have noticed Swinhoe's addicted to crooked toes. I have had here some dozen pairs and I never remember one with this fault. But if they have this failing surely it is a result of inbreeding, for although Messrs. Rogers and Chapman frequently import such breeds as Tragopans, Impeyans, etc., I have never been offered imported Swinhoes; the obvious conclusion is that most of our Swinhoes are probably related. My trouble with Swinhoes is that the male so frequently kills his mate and no device seems to prevent this tendency.

I have found this spring to have been a bad one for fertile eggs in fancy Pheasants, but it has been a splendid season for rearing. I think the principal cause of the infertile season is that we had such a very cold early spring, and is it not conceivable that the hen's ovaries become so to speak "chilled"? I have not had a single egg from four Reeve hens, and I hear from three friends including Mr. Beever that their experience has been similar to mine with Reeves. On the other hand I have reared (touch wood!) sixty-seven Blackneck chicks from a pen of one cock and four hens, surely a satisfactory result. I have recently hatched a Specifer Peafowl chick from an egg sent from the Zoo. This little chick is really most amusing: nothing it likes better than riding on its foster-mother's back. Whenever the hen calls, it jumps down, swallows the tit-bit, then hops back again to its perch. The hen resisted this at first but now seems to have become reconciled. Speaking of the Specifer Peafowl, surely this is the most beautiful of all birds; it is of course a Pheasant, so perhaps we had better head my list as above with this most gorgeous bird.

Splendid news from Mr. Hampe that Golden Pheasants are still comparatively common in their native clime.

What a delightful series of Pheasant articles we had from the pen of Monsieur Delacour last year. Our Editor frequently gives us some delightful little paragraphs on small birds; I am sure he could sometimes give us a few notes on Pheasants. Should any member desire to keep a few Pheasants I wish they would write me; what little knowledge I have is at the disposal of any member who cares to write. Although, as Mr. Beever truthfully says, they are delightfully easy birds to keep, have extremely small appetites, and are a constant source of pleasure.

NOTES ON BORNEAN FIREBACK PHEASANT CHICKS AT THE GAYBIRD PHEASANT FARM, GREAT MISSENDEN

By J. Carlton Hunting

We have been, this year, for the first time successful in obtaining fertile eggs from a pair of Bornean Crested Fireback Pheasants (*Lophura ignita*) and hatching out chicks from them. The pair were strong specimens, bred in 1930, and like all our other Pheasants during the whole year live in open pens with small lean-to shelters. They mated about 1st April and we had our first egg from them on the 24th May. There were ten eggs in all, similar in size, colour, and shape to an ordinary 1½ oz. hen's egg but the shells are hard and with a particularly smooth and shiny surface. The hen laid irregularly, sometimes every day, but at other times missing one, two, and three days without laying, and ceased laying and wanted to sit after producing her tenth egg. We had, however, taken the eggs away as they were laid and substituted dummies.

The first two eggs set on the 31st May were fertile but the chicks were dead-in-shell. On 8th June we set four more eggs under a cross-bred Silky-bantam and in twenty-four days hatched out three chicks, the fourth egg having a chick dead-in-shell. One of the three chicks however, was very weak and almost from the first showed signs of debility by hanging its wings and not being nearly as lively as the other

two. This chick finally died on the seventh day, although it was running about and feeding fairly satisfactorily till nearly the last moment. The other two are still doing well. The last four eggs we set under a game Bantam hen on the 10th June and after the same number of days, namely twenty-four, she hatched out three fine strong chicks. Again, one chick was dead-in-shell. These three up to the present are flourishing.

We find that during the first three days these little Bornean chicks scarcely ever appear from under the hen and when they do they seem to require no food. They do quite well at first on hard-boiled egg and fine scalded biscuit meal. As a drink they have milk before them from the time they are hatched and should this turn sour during the day it does them no harm. After five days they have added to their diet some fine, chopped green food, including dandelion leaves, lettuce, buttercup leaves, young kale and chives, also a few scalded maggots are given twice a day. One has to be careful not to overfeed on maggots as apparently the little chicks like them so much that they will go on eating them until their crops become distended, which of course is harmful. Just about ten maggots a chick twice a day is, we consider, sufficient, especially when they are still small.

For safety's sake we rear the little birds in a wired-in run in front of the hen-coop which is shifted on to fresh ground three times a day. As the little Bornean Pheasants always seemed to be scratching on the ground after insect life, we tried giving them daily a few shovelfuls of old leaf-mould which we found in the corner of our kitchen garden, and in this they seemed to revel as it was chock-a-block with spiders, earwigs, beetles, wormlets, and other edible matter which they devoured with great rapidity and relish. Also a few handfuls of an ants' nest, thrown down to them occasionally, they are very fond of, at once devouring the eggs, pupæ, live ants and anything else they can find in it to eat.

At the present time, on the 29th July, we have two four-weeks-old Bornean chicks under the one hen and three chicks, eighteen days old, under the other hen, and they are all doing well and growing rapidly. We certainly hope to be successful in rearing them to maturity. They are very shy of strangers and amazingly strong on the wing.

THE BREEDING OF A HYBRID MACAW IN NEW ZEALAND

By A. Anderson

Several years ago I obtained a Red-and-Yellow Macaw. About seven years ago I obtained a Blue-and-Yellow Macaw direct from Brazil, when it was just a baby, not more than four or six months old.

After getting it thoroughly acclimatized it was put into an outdoor aviary where it has remained ever since with the Red-and-Yellow cock bird.

Last January the hen, the Blue-and-Yellow, laid two eggs on the floor. I did not anticipate that these eggs were fertile, but out of curiosity collected the eggs and put them away in a tin. In February the hen laid two more eggs, also on the floor. I thought then that there was a chance of the eggs being fertile and, to prove it, put a box in a corner on the floor of the house portion of the aviary, the box itself being 18 by 10 by 4 inches deep. I put plenty of sawdust in this box and placed the January and February eggs in a hole in the centre.

Immediately the hen went to nest, sitting very closely on the eggs. I did not make a note of the date as I really thought nothing would come of the efforts of the pair.

Imagine my surprise, however, when on the 17th March, 1932, one young one was hatched out. This bird was fed by both parents on the usual seeds I gave them, mixed sunflower, peanuts, sweet biscuits, and plenty of fruit such as apples, bananas, grapes, green maize cobs, and occasionally bread and milk.

The young bird prospered right from hatching and surprised me by its extraordinary rapid growth. In all my forty years of bird keeping I have never seen a bird grow as fast as this young Macaw. I have much pleasure in forwarding you a photograph of this young one together with an infertile egg, and you will notice that it is standing in a soft mass of refuse, sawdust, peanut shells, etc., It was five weeks old when this was taken.

At two months the young bird was almost fully grown, the wings were well developed, the back bluish green, underparts red and yellow,

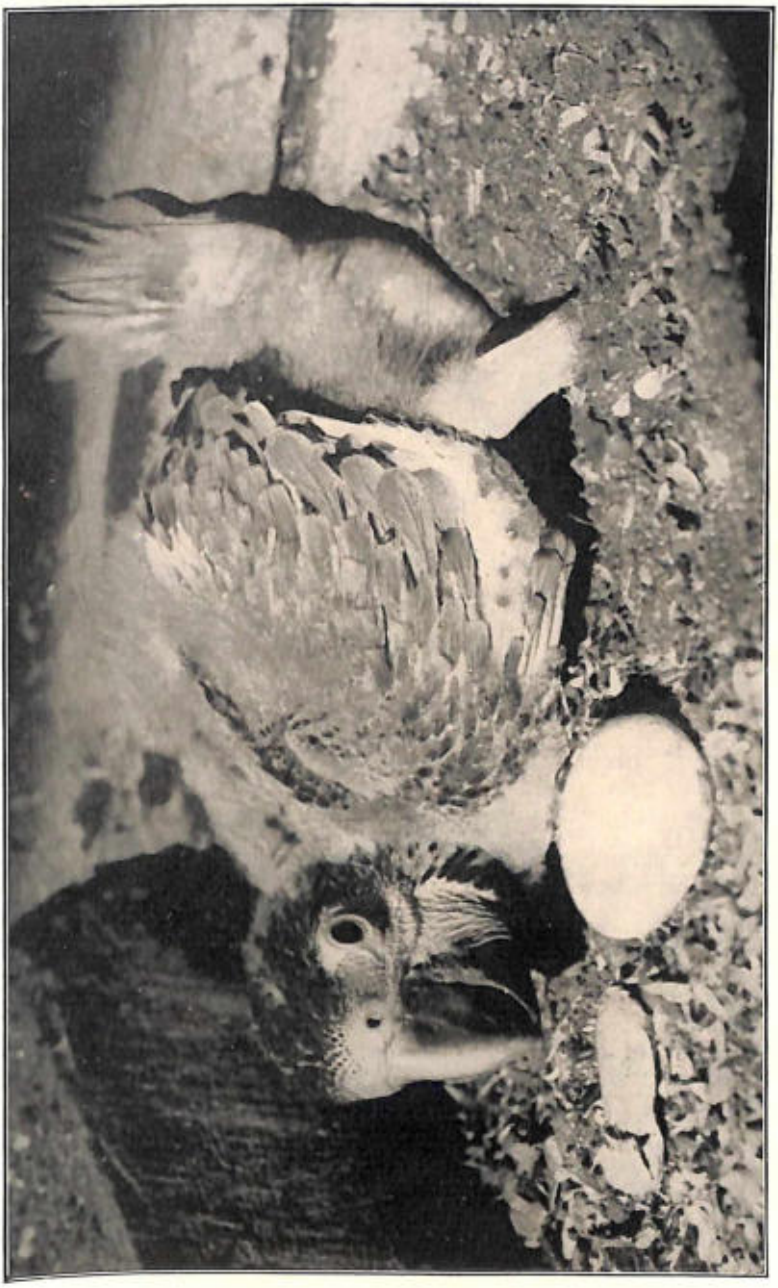


Photo by V. A. Stapleton.

Young Hybrid Macaw.

To face p. 220].

the beak similar to the cock bird's, red and yellow. The eggs are very much like those of an Amherst Pheasant in colour and size.

After the young bird hatched out the hen chewed the nest box almost to pieces and made a hole in the ground in the corner of the house, over 1 foot deep and the young one was put in there, where she kept it until it was about two months old. Now, four months after hatching, the bird is entirely independent, and in vigorous health.

Before the Macaw went to nest they were exceptionally quiet and I could handle and play with them as though they were kittens. However, since they commenced to think of a family they have both become so savage that I have to be very careful in getting into the aviary to feed them and, I assure you, exceptionally careful when retiring, so that I expose no unprotected parts.

Next year I propose sinking a small cask into the ground and filling this with chips of wood and sawdust as it seems to me this type of nest would suit the natural inclinations of the hen.

I trust that this account of an unusual hybrid will interest members.

[The above very interesting account is forwarded by Mr. G. Rowland Hutchinson, Hon. Secretary of the Avicultural Society of New Zealand.]

BREEDING THE BLUE-AND-YELLOW MACAW IN WESTERN AUSTRALIA

By M. T. Padbury

About ten years ago I purchased in London two Blue-and-Yellow Macaws (*Ara ararauna*), said to be one year old, and sent them out to Western Australia by boat in care of a man engaged to attend to them. I have kept them in a roomy cage with a cement floor.

It was eight years before they laid any eggs. In November of 1929 the hen bird laid three eggs on the floor of the cage. Thinking the cement would be too cold we gave her some straw which she pushed away. We also gave her some sand. There was a period of four or five days between the laying of the eggs, and she continually sat on them. At the end of five weeks after the laying of the third egg we examined them and found one fertile and two not so ; by this we knew the birds were really a pair.

Three or four weeks afterwards the hen started laying again and laid three eggs. She was not interfered with this time, there being four or five days between the layings. She sat for about five weeks and hatched one bird, which lived only for two days.

Before the next laying season I constructed a new cage, 10 feet by 12 feet and 12 feet high, with a cement floor, having a corner of 3 feet square of sand only, and 3 or 4 feet deep.

In December, 1930, the hen bird started laying again. She laid three eggs on the sand patch prepared for her, digging down somewhat with her beak to make a hollow. She laid three eggs, there being an interval of three or four days between the layings. After the third egg was laid she sat on them between four and five weeks, and hatched two young birds, there being one or two days between the hatching.

The young birds were very helpless and just lay in the nest of sand, more like frogs than birds and there being only the appearance of skin without any down. It took several weeks to alter this appearance, although they grew very quickly. A grey down and tiny feathers began to appear on their backs, but they remained helpless for quite two months and were fed by the old birds until they were three or four months old.

They gradually got the same plumage as the parent birds, and at six or seven months old began to call out with the native call, and also to talk in the acquired language the same as the old birds, such as " Good morning ", " Good-bye ", " Hulloa ", whistle, and call the dog and such things.

The following year, 1932, we had the same success, and have now two pairs of Macaws which we have reared.

We kept a record of the last pair—the first egg was laid on 10th December, and the second on the 14th, 1931. The first one was hatched on 4th January, and the second on the 7th, 1932.

I consider the success of the hatching of the eggs lay in having the depth of sand for them to nest in.

We feed them on bread and milk for the morning meal, toast, fruit, or lettuce-leaves midday, and nuts and sunflower-seed in the evening. When the birds are young we feed them on bread and milk midday as well.

MORE ADDITIONS TO BREEDING RECORDS

By Dr. E. Hopkinson, C.M.G., D.S.O.

(*Continued from page 152.*)

p. 41. 178. Gouldian Finch. *For the record as it stands, read:* The three forms, red, black, and the very occasional yellow-headed, all interbreed, but no intermediate phases ever appear. According to Neunzig (p. 371) all the forms were once obtained in Australia from a pair of Black-heads. De Brisay (*Insectivores* . . . Appendix, p. 266) says that Gouldians, both red and black-headed, were first imported to London in 1855 and bred in France for the first time by Cornély in the following year; very soon Delaurier, Ollivray, and many others followed with successes. In the United Kingdom the first breeder of the red-headed form was Phillips, says Fillmer in his *Waxbills, Mannikins, etc.*, but I have no first record for the Black-heads, nor know whether this preceded Phillips's or not. Many (or rather most) Gouldians never show any sign of wishing to breed, but when they do start they are often prolific. Among the many records of success may be mentioned *A.M.*, Vol. I, 1; *Minutes of the Cage-bird Club*, 19th August, 1893; *B.N.*, vi, 343 (Perreau in India; twenty-two young reared by two pairs, 1905–06); *B.N.*, 1910, 70 (Edmunds; one chick reared by Java Sparrows); *B.N.*, 1914, 374 (Suggitt, "freely"); *B.N.*, 1915 (Thomasset; seventeen reared in 1915, and one hen brought up thirteen in the previous years); *A.M.*, 1922, 38 ("freely"). More recently Whitley has been breeding them easily at Paignton; *see also* Teague's full account of his successes and methods in *A.M.*, 1932, 90. Delacour in an article on Japanese Aviculture in *A.M.*, 1926, 217 says that Gouldians, Long-tailed Grass Finches, Masked, Parson, Bicheno, and Cherry Finches were then being bred in Japan in thousands with the help of Bengalese as fosters and a special fish meal as food. The results have hardly made themselves manifest yet, at any rate as far as reaching Europe. I have seen Japanese-bred birds in

Australia, but they were wastrels, and although in Singapore one sees cages full of Gouldians at times, often said to be cage-bred, the evidence that they are so bred and not wild-caught birds from Australia is lacking.

In Australian aviaries in different places I saw many breeding pairs, often bringing off nests of five or more young, but even there breeders tell me all is not always plain sailing and stocks may die off after a year or two apparent perfect success. The general opinion there seems to be they breed better in indoor than in outdoor aviaries. If that is so in Australia's climate, how much more should it apply in ours!

p. 41. 179. PINTAIL NONPAREIL. *Line* 4: *delete the last five words and read instead:* Decoux tells me that the best account of the breeding of this species is Horst Wagner's account of his success in 1913, which is to be found in the 1914 volume of *Die Gefiederte Welt*. They were also bred again in Germany by Voight in 1925, and Wagner also bred the yellow-billed variety. There is no British record, as far as I know.

p. 42. 180. PARROT FINCH. *For the entry as it stands, read:* Have been frequently bred. In France the first breeder, according to De Brisay's *Dans Nos Volières*, was Dr. Henri Adam in 1886, three young being reared, and Cornély succeeded again in the following year. For the United Kingdom Dr. Butler mentions Wiener (the first *teste* Russ, in 1877), Phillipps and others. (*The paragraph about the yellow-bellied variety is an error; it refers to the Pintail Nonpareil.*)

p. 42. 181. PEALE'S PARROT FINCH. *For* "*Cyanovirens*" *read* "*pealii. Hartl.*", *and for the entry as given, read:* Page (*B.N.*, 1912, 223, 258, 311) says that "two young ("*cyanovirens*") were reared at the Zoo in 1912", but no such record appears in the Report for that year. The species has recently been bred in California, *teste* Prestwich, *A.M.*, 1929, 60.

p. 42. 183. CRIMSON FINCH. *Line* 4, *after* ". . . another" *insert:* In France they were bred about 1894 by Taffatz at Chateau-Goutier and by Forey at Montlucon, *teste* De Brisay

(*Passereaux*, p. 182). *Continue* "Among British . . ." *and add after* . . . vii, 227). Seth-Smith (*A.M.*, 1932, 1) records the rearing of three young at the Zoo in 1912.

p. 215. *Add:* 183. *c*, CRIMSON FINCH × LONG-TAILED GRASS FINCH. Frank Buckle of Sydney tells me (1929) that he bred one about 1925. When in Sydney in 1932 Mr. Caley showed me a painting he had made from a skin of such a hybrid which had been bred in Australia, but he did not know where.

p. 43. 184. ST. HELENA WAXBILL. *Amend by inserting* (a) *before* "*Bull*" *in line* 1, (b) *before* "Russ" *in* 1, 3, *and* (c) De *before* "Brisay" *in* 1, 4; *and add at end of record:* Another very recent success is that of Miss Robinson of Camberley; she reared seven young from one nest in 1931; *see A.M.*, 1931, 288 for a full account of the event and a photo of the wonderful family. The breeding of these Waxbills in India was recorded by Davis in *A.M.*, 1930, 289.

p. 278. 184. *Add to the list of male parents under* ST. HELENA hybrids, the Grey Waxbill (1929) and Bronze Mannikin.

p. 43. 185. GREY WAXBILL. *Add:* A recent success in France is recorded in *L'Oiseau*, 1927, 32.

p. 216. 185. *a*, GREY WAXBILL × ST. HELENA WAXBILL. *Add:* Teague reared one in 1929, which he exhibited at the Crystal Palace Shows, 1929 and 1930; *see Cage Birds*, 20th September 1930, and *A.M.*, 1932, 84.

185. *c*, GREY WAXBILL × ORANGE-CHEEK WAXBILL. *Add:* Bred by Teague in 1930. Same references as above.

p. 216. 186. CRIMSON-RUMPED WAXBILL. *Add:* *a*, CRIMSON-RUMPED × GREY WAXBILL. *b*, CRIMSON-RUMPED × ORANGE CHEEK WAXBILL. Hachisuka (1928, p. 256) includes both these crosses (*this way*) in his list of hybrids bred by Marquess Yamashima in Tokyo.

p. 44. *Add:* 191. *i*, BLUE-HEADED CORDON BLEU. *U. cyanocephalus* (Richmond). Bred for the first time in France by Decoux in 1930, two young being reared, but the breeder thinks that the species was bred in Germany in the year before. *See A.M.*, 1931, 39.

p. 217. 190. CORDON BLEU. Add: *b*, CORDON BLEU × BLUE-HEADED CORDON BLEU. Two broods reared by Decoux in France in 1929. *See A.M.*, 1931, 37.

p. 217. *Add:* 191. *i*, BLUE-HEADED CORDON BLEU. *a*, BLUE-HEADED CORDON BLEU × CORDON BLEU. Decoux (*A.M.*, 1931, 38) says such hybrids were bred in Germany in 1929, and that the young were fertile *inter se*.

p. 44. *Add a footnote:* Decoux has a note in *A.M.*, 1932, 114 that he had read in a German paper that the VIOLET-EARED WAXBILL had been bred in Germany in 1931; if so this is a first.

p. 46. 199. BLACK-HEADED WEAVER. *Line* 1, *delete* "and only" *and* "as far as I know", *and add at end of entry:* Crandall in the *N.Y. Zool. Bulletin*, 1927, 33 records its breeding in the U.S.A. by Worthington sometime between 1917 and 1926. In reply to an inquiry I sent him, Mr. Crandall confirms the species. *See also* list in *Aviculture*, January, 1932.

CORRESPONDENCE, NOTES, ETC.

A MACAW BRED IN GERMANY

In *Die gefiederte Welt* for March, 1932 (p. 110) is a most interesting account by Herr Müller of the breeding of the Blue and Buff Macaw (*Ara ararauna*) in the large aviary at the Essen Tierpark which they shared with other large Parrots and where all could have free use of their wings. The following is a rough translation of the essential facts.

In June of last year three eggs were laid at two-day intervals by the hen of one of the two pairs of *Araraunas* in the aviary, and on these both parents sat assiduously, but unfortunately without result, and the eggs were removed after six weeks and found to be unfertile. On 5th September another egg was laid, to be followed at two-day intervals by a second and third, the father and mother again taking turns at incubation, and always showing the greatest excitement at any approach, screaming and flapping their wings at every step not only in the aviary, but even anywhere near outside. After four weeks one

of the eggs hatched (5th October) and a young one emerged, naked except for very scanty down and noteworthy for its huge beak, a really astonishing outsized thing in beaks. The anxious care of its parents continued and both were constantly engaged in feeding it as it grew, taking the ordinary Parrot food supplied, boiled egg, bananas, bread soaked in milk, etc., softening it in their crops and thence feeding the youngster, which grew rapidly. The trio were removed to their winter quarters at the end of October and the young bird was still thriving and over four months old at the time the account was written. This closes with the hope of further success in the following season, but I do not think that any further details have yet appeared.

An editorial note appended gives previous Macaw breeding records: (1) The historic case at Caen in 1818 when in the course of four years nineteen clutches were laid and fifteen young reared; (2) a later success in a room, where the notable fact was that the young bird was ninety-four days old before it left the nest; (3) a third success with Sharland, but no details; and (4) the hybrid *ararauna* × *chloroptera* bred at the Dresden Zoo in 1897.

I should have mentioned that the article is illustrated with three good photographs of the young bird at various ages from seven to twelve weeks.

E. Hopkinson.

THE BREEDING OF THE PURPLE-HEADED STARLING

It was at the beginning of June that I became aware that one pair of these Starlings had a nest in a hollow apple log in my aviary, but how long this had been going on I don't quite know as both birds were very artful in not letting me see them go in or come out of the nest. They always went out before I could open the door. This went on till the end of June, when one morning I found that instead of eating mealworms, etc., both birds had a beakful and sat on the perch like statues with them till I had gone, so I was sure they had hatched. This went on for about a fortnight, when the young Starlings drew to the hole in the log and I saw three.

One young one came out about a week before the other two. It

was about half the proper size, well feathered, but I saw it was not a sound bird, it died in four days' time. The others remained in the nest another three days, and one morning I found them out, large strong birds. The last two or three days they were in the nest I never heard a sound from them. I have been told by a leading aviculturist these Starlings often give up feeding their young ones and that it is better to take away the cock after the young are hatched with some varieties, but I did not do this as I found that the male bird was feeding the young a good deal more than the hen. I gave them all the meal-worms they could eat and left some always in a rather deep tin. Of course, they had other food of all sorts besides. I am sorry I cannot give definite dates as it was very hard to know what these birds were doing. During the winter I had them with another pair of Starlings of the same sort, but they killed the other cock, and the other hen would have shared the same fate had I not taken her away. The Editor tells me that Purple-headed Starlings were bred in the Zoo in 1871 and 1874, but I think this was before the days when the Avicultural Society's Medal was awarded. I possess one Medal which was awarded to my father for breeding the Red-vented Blue-bonnet Parrakeet, and should much like to win another!

I shall be pleased to answer any questions I can as to rearing these Starlings.

WINDSOR D. PARKER.

[In his *Records of Birds Bred in Captivity*, Dr. Hopkinson writes of *Lamprocolius purpureus*: "Russ says they were bred at the London Zoo, and Wiener, that young were hatched there in 1871 and 1874, but Butler says that he can find no record of this in the Zoo *Proceedings*. Neunzig also makes no mention of breeding: this must therefore be a very doubtful record."

In the Zoological Society's *List of Animals* published in 1883 there is a record of a young bird of this species hatched in the Gardens on 5th August, 1871, and a second hatched 17th August, 1874. A search through the volumes of the *Daily Occurrences* reveals the fact that the one hatched in 1871 died at nine days old, but the other, hatched in 1874, lived for nearly *eleven* years.—ED.]

SUCCESSFUL TREATMENT OF SICK CASSOWARY

We have had a Cassowary some three years now. This bird has always been fairly wild. One could go in the pen with him but he was easily startled and could never be handled. Early in June, 1932, he apparently contracted a chill. He failed to get up one morning, and when forced up was quite weak at the " knees ", he was gasping visibly through a widely open beak, and after staggering round a bit just sat down and closed his eyes. He made not the slightest resistance to being handled. On my arrival to " vet " him I was at once struck with the burning heat of his neck and head. I have not yet learned how to take a Cassowary's temperature. Anyway, I made a provisional diagnosis of pneumonia. The bird was obviously very ill, and indeed seemed dying. At times he would peck feebly at bits of banana and apple. On inspecting his mouth I found that the orifice of the trachæa, which is peculiarly obvious in these birds, was markedly inflamed, and some thin mucus discharge was constantly present in the lower mandible. This exactly resembled human " saliva ". This bird, following the winter, was in average condition. I will simply describe the treatment adopted, on empirical lines. The bird did not cough.

One symptom I did not like was a weakening or softening of the lower mandible making it overlap the upper. I have seen the same thing in sick and debilitated Parrots. I blame this softening to a Vitamin D shortage, and a similar condition is observable in young crocodiles. (Birds are not so far from the reptiles.) At this time I was treating with success a 12-inch crocodile whose bones were so soft that he fairly flattened under his own weight and further could hardly breathe owing to the softening of his ribs. The treatment for the crocodile was a massive dose daily of Adexolin (one teaspoonful, in fact) and forcible feeding.

We started off by giving our Cassowary a teaspoonful of brandy frequently, a teaspoonful of Adexolin night and morning, an orange in quarters at the same time. We forcibly fed him dog biscuits, apple, banana, and lettuce. After the first few days he began eating a bit himself, and was extra avid for a mixture of flint limestone and oyster-shell, together with lettuce. At the end of the week he was on his

feet again, eating very well but still gasping and sitting down suddenly.

Now, in the fourth week, he is apparently normal again, and I doubt if we could hold him to administer any drug.

I am told that this bird, being up to date so healthy, had been ignored to some extent, when the daily fresh vegetable ration was being handed out last winter. Whether a Cassowary manufactures Vitamin D in his skin and feathers or not I do not know. Anyway, there has not been enough sunlight last winter for him to do so.

I am satisfied that the condition was a vitamin shortage, which made this bird susceptible to infection and he got pneumonia.

Whether our treatment had any effect or not I do not know, but, anyway, the bird is recovering. I should strongly advise the use of Adexolin in any sick bird.

Of course, I must not forget to say that the second week I added two heaped teaspoonfuls of Bemax to his diet; this is vitamin B which is so strongly recommended by Mr. Hastings in a recent issue.

W. L. English.

THE MELANISTIC MUTANT PHEASANT

With reference to the article on above subject by Mr. G. H. Clarke in last month's issue, those who are interested in the origin of this bird may be interested to read, if they have not already done so, the chapter in *A Bird Painter's Sketchbook*, by Philip Rirkman (Eyre and Spottiswood, 1931 on "The Pheasant" (p. 133). In this chapter, which is largely on this subject of Mutants, he states: "So far as we know Mutants have not been found in a completely wild state. By that I mean where no human agency could be traced." It appears to me a chapter on the subject worth reading. I have several of these birds here and I do not think they stray very badly as they are accused of doing by many sportsmen.

John S. Reed.

BIRD LICE

I wonder if any of our members can explain the following phenomenon.

Last evening a Tanager died unexpectedly which I have only had a couple of months. Although never a really good bird as regards plumage, it appeared healthy, fed well, and even yesterday afternoon, when I last saw it alive, looked comparatively well. On finding it dead in the evening my man carefully examined it; he could see no reason for its sudden death. It was also perfectly clean in every respect. He put it away in a box and on looking at it an hour later he found the body swarming with minute black lice, thousands of them appeared to be running over it. I am at a loss to know whence these lice could have come in such a short space of time; is it possible that the eggs could have been in the bird's feathers and hatched immediately after death? I have had birds troubled with lice before death, which in fact probably hastened the death, but do not remember a case like this before and should be very interested if anyone could suggest a likely cause or explanation.

G. H. GURNEY.

[There is no doubt that lice multiply excessively when their host becomes ill though they are not apparent to human eyes unless the bird is handled and closely examined. When death takes place and the body commences to cool they emerge and become visible.—ED.]

BREEDING ZEBRA FINCHES

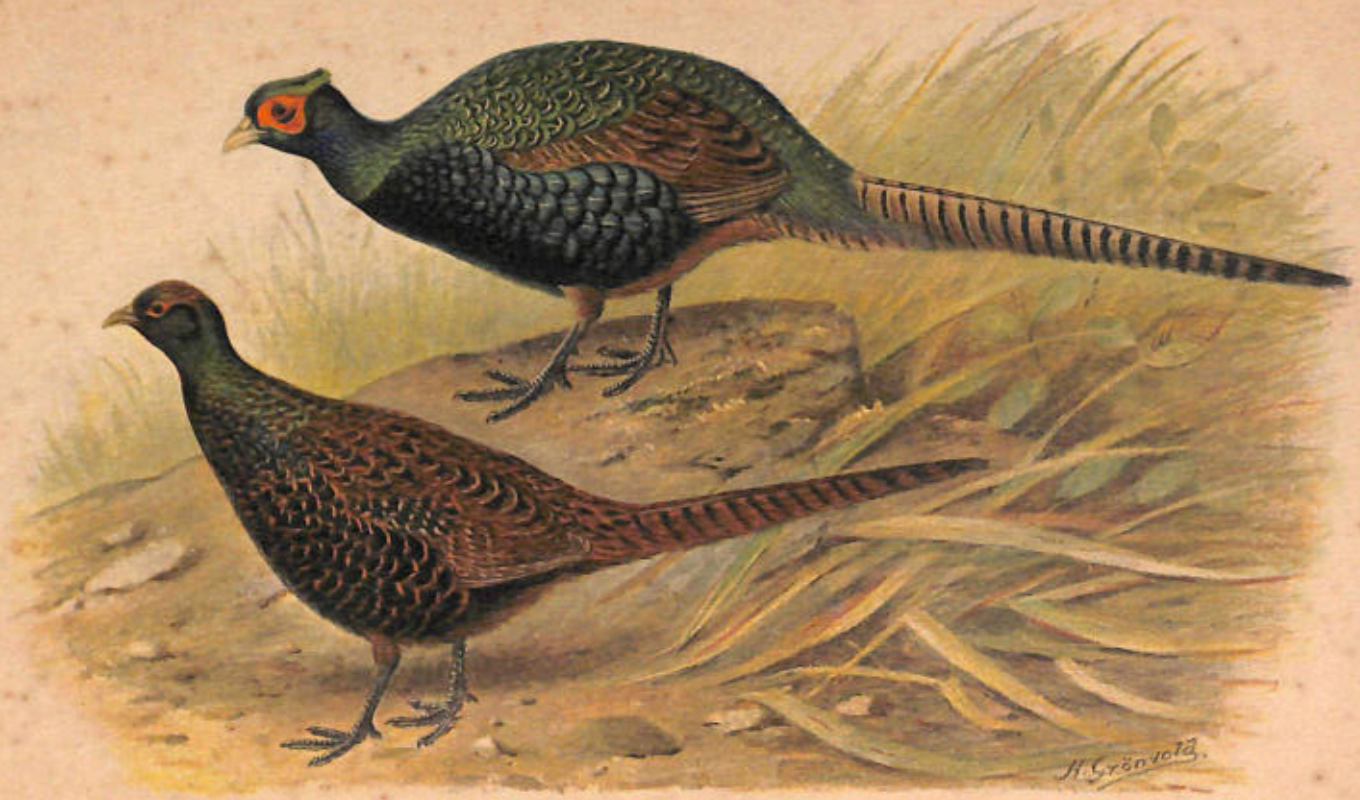
I have read the article in the August number on the breeding of the Zebra Finch with great interest, and entirely agree with Mr. Jones that these are super-delightful little birds, and easily acclimatized in this country. But I must say with all sincerity that I have never carried out the different treatments he alludes to in the way of cleaning the nesting material with paraffin oil, and feeding the young with only spray millet. The latter statement is not correct in my own aviary, as I have found the moment the young ones are able to leave the nest they are able in a small way and with help from their parents

to forage for themselves. Of course, I am not aware of the space of Mr. Jones' confinements for the birds, but I have a very large flying space with a big and small shelter with a birch wall round, which these Finches seem to fancy very much for their nests. They require from me no encouragement to pair or breed. I had two cock birds left over from last year, and I was able to get from De Von two hens, and these two pairs have multiplied rather like the common House-sparrow. It would take me all my time to ring them all as suggested by your correspondent, besides frightening and disturbing all the other birds. I must say that I have never found any of my birds having a set-to in the pairing season or not or over their food. I think this may be because I have a birch wall separating the two aviaries, although there is a small flight-hole where they manage to fly through when they so require. I have innumerable small bushes and virgin bush all over the place, in fact the aviary is a very wild spot indeed but not over-smothered in weeds, as the mice, which are a curse, hide in them, and since I always keep them down. Through all the heavy rain that occurred in July my Zebra Finches did not seem to care a jot for the weather and they are always out in the heaviest downfall. The last nest they constructed was in a very inconvenient place, namely, a seed-hopper.

EVELYN H. BARCLAY.

THE SOCIETY'S MEDAL

In our Magazine for October, 1931, Dr. Amsler describes the successful breeding of the Blue Rock-Thrush (*Monticola solitaria*) and the Council proposes to award a medal for this. If, however, any member or reader should know of a previous instance it is requested that the Secretary be informed at once.



Phasianus mut. tenebrosus.

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THE MUTANT PHEASANT

Phasianus mut. *tenebrosus* (Hachisuka)

By The Hon. M. Hachisuka

We are now all familiar with the so called mutant Pheasant which is increasing so rapidly in our woods. It is no longer a class of fancy Pheasant but is becoming a very popular figure among the game birds of this country.

There are still a considerable amount of biological questions not yet answered relating to this bird, and there have been certain disputable questions raised by ornithologists at the British Ornithologists' Club as well as in the leading ornithological journal, *The Ibis*, since this Pheasant was first described by myself in 1926 as a mutational species which had suddenly cropped up amongst the common Pheasants; also Dr. P. R. Lowe has long been studying a series of male skins he has collected himself since 1921. It would, therefore, not be out of place at this juncture to give the history of this Pheasant.

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THE MUTANT PHEASANT

Phasianus mut. *tenebrosus* (Hachisuka)

By The Hon. M. Hachisuka

We are now all familiar with the so-called mutant Pheasant which is increasing so rapidly in our woods. It is no longer a class of fancy Pheasant but is becoming a very popular figure among the game birds of this country.

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We are all familiar with the sudden appearance of the distinct species of Peafowl, Black-winged—and the Golden Pheasant, Black-throated—which was produced in Holland towards the end of the last century. Both species, *nigripennis* and *obscurus*, breed true to type and exist in European gardens as distinct species. The production

of these Peafowl and Golden Pheasant are quite outside the human control. This phenomena—what I term mutation—and its nature is quite different from the various colour phases of Guinea Fowls and Budgerigars, which are mere albinism or melanism of birds sporadically occurring among wild and cage birds and disappears quickly after a few generations unless artificial control is enforced.

My Pheasant is a parallel example of the Peafowl and Golden Pheasant just referred to, and we are all aware of the co-existence of two species of Pheasant, *colchicus* and *tenebrosus*, in our woods. It is like the Tree and House Sparrow, or many allied species of Warblers breeding in this country in more or less the same type of surroundings.

It was one day during the winter when I happened to be looking round the poultry shops in Cambridge that I came across a Grouse-like looking Pheasant. After taking it home and carefully dissecting it, it proved to be an adult female, but I could not identify to what species it belonged. I then showed the specimen to Lord Rothschild who, much to my surprise, told me he was familiar with this type of bird as coming from Norfolk as early as about 1880. He then brought to London a male specimen of this bird and after careful study I subsequently described it at the British Ornithologists' Club as a mutant *tenebrosus*. It was afterwards figured in *L'Oiseau* in France and in *Tori* in Japan.

This was the first time a mutant species was described as it should be and all other descriptions of mutants are misleadingly and merely described as sub-species, species, or hybrids. In order to prove that *tenebrosus* is of mutational origin I decided to undertake breeding experiments and an ornithological friend as well as the Zoological Society kindly offered me a good stock which I took back with me to Japan to be bred for several generations. While these experiments were being carried out *tenebrosus* suddenly became common in England and was brought to the notice of several people. At the same time *tenebrosus*—being dark in coloration—made considerable confusion, as it was thought to be the hybrid between *colchicus* and *versicolor*. Most of us are not familiar with the authentic hybrid of the above two species but vaguely remember that the cross in question is a darker bird than the common English Pheasant.

It is true that *versicolor* has been introduced and hybridized in this country but the pure strain has now quite died out, at least from the point of view of the colour of the feathers.

The coloured plate here reproduced is drawn by Mr. H. Gronvold from a perfectly pure specimen of *tenebrosus* since set up and soon to be exhibited in the Bird Gallery of the British Museum at South Kensington. The above-mentioned plate was the first to appear in any ornithological journal in this country.

It is interesting to learn that the mutant Pheasant made its appearance in France within the last two or three years and Professor Lönnberg, of Stockholm, informs me that this Pheasant has also appeared in Sweden, but this is probably derived from the English stock which has regularly been imported to that country. It is also worthy of record that *tenebrosus* is also obtained in Japan from the pure *versicolor* group in its wild state.

It will be interesting in future to notice to what extent the mutant Pheasant will multiply in the feral state; whether it will stand by itself in range with *colchicus* or entirely replace that species.

[Since writing the above article I have read Mr. D. Seth-Smith's article on the same subject which appeared in *The Ibis* for July. I entirely share the opinions he there expresses.—M. H.]

THE BREEDING OF LUTINO RINGNECKS

By The Marquess of Tavistock

This article might also be called *Per ardua ad astra* since it must be about eighteen years ago that Mr. Ezra gave me a lovely golden parrakeet with red eyes and white flight feathers and I embarked on the thorny path of endeavour in trying to get her to reproduce her virtues in her descendants. This original bird (she is still alive but has not bred for many years and is obviously aged) though a wonderful colour, was not otherwise a good specimen, having a rather humped-up look and flying heavily, and these defects she unfortunately transmitted to her offspring with unnecessary fidelity.

I knew little about parrakeet breeding in those days and kept her and her green mate in an indoor bird-room with the not unnatural result of clear eggs for two successive seasons. I then tried her in a small fixed outdoor aviary and my stock was added to by a further generous gift by Mr. Ezra of a really fine hen, perfect not only in colour but in every other respect.

From these birds during the next few years I succeeded in raising about seven or eight green young ones, but only one, a hen, was a really good specimen. the others being undersized or defective in their wings and flying badly. The only surviving child of the best hen was a small cock, not too good in his wings, and with a permanently moth-eaten look round his neck. As long as they remained in their original quarters I could not, moreover, get a fertile egg from any of the males I bred.

Then came the transfer of the stock to the 24 ft. movable aviaries I still use. A decided improvement followed. The first year, from the two lutino hens mated to green wild cocks, I reared four much better young ones. One of these unfortunately died while under the temporary care of a friend : the other three, two nice cocks and a moderate hen, I still have.

The lutino-bred greens being, with one exception, still in immature plumage and difficult to sex, I turned all together into the same aviary. Two hens nested and one hatched her egg but the young one I found dead a day or two later with its beak and toes bitten off. I attributed the misdeed to a vicious spinster hen and to colony breeding, but I learned later who was the real culprit !

Next year I paired the best lutino hen to a fair-sized but badly-shaped lutino-bred cock and the old hen to the rough-necked cock.

Both duly went to nest and this time both lots of eggs were fertile and my hopes of lutinos began to run high. One morning, half-way through the incubation period, I noticed the mate of the best hen looking ill and caged him in the hospital. A few hours later the lutino was off and also looking ill so I had to cage her and give the eggs to an unmated Alexandrine Parrakeet who was incubating an infertile clutch. By evening the lutino-bred cock was dead ; by next morning his mate was dead. So sudden had been their illness that I felt sure

they had picked up rat poison but a *post-mortem* examination revealed a virulent form of pneumonia. In due course the Alexandrine hatched the orphan eggs and immediately killed the young ones. She had incubated infertile clutches so long that I believe she regarded it as a shocking and unnatural event that eggs should produce tiny pink monstrosities and did her best to hush up the unpleasant affair!

About the same time the old lutino was due to hatch and I looked into the nest. Another tragedy! Tiny mangled corpses minus beaks and feet. I knew that the hen was a good mother and would not be guilty of this outrage so the blame must fall on her disreputable husband with the ragged neck. He doubtless had murdered his former offspring by the lutino-bred hen the previous season. The next year I put the ragged cock with the only really good lutino-bred hen I had reared in the fixed aviaries, intending to remove him before the eggs hatched and run him with the lutino hen, also for a limited period. The lutino-bred duly vanished into her nest-box. (To give the cock his due he is an attentive husband to any lady of his race whatever his sins may be as a parent.) After a time when I judged it wise to change the cock I looked into the nest. No eggs, no hen. I hunted everywhere for a corpse and found nothing. She had vanished into thin air and to this day I do not know what became of her.

I tried the rough-necked cock with the lutino hen for several more years but had no luck. Sometimes the young were dead in the shell. Sometimes they died soon after hatching, in some cases through my fault for I put the nest in the shelter instead of in the open flight. Finally, the old lady started having trouble with egg-binding. Then she missed a season with a catarrhal discharge from one nostril, and after that she stopped laying, though every spring she retired into her nest and for weeks and weeks spent a soothing time of retreat incubating the memories of the past—a habit I find very common with ancient dames of her genus!

I was now left with two cocks and a hen lutino-bred green reared in movable aviaries and two hens bred in fixed aviaries, one a big bird but a poor flier, the other small and also a poor flier. The small hen I sometimes tried with the rough-necked cock but she was terribly clumsy with her eggs and year after year contrived to crack

or dent any that were fertile, losing the only young she happened to hatch.

The big hen laid two eggs in a nest in the shelter. Both hatched, and to my delight one was a lutino. Alas ! the situation was all against the health of the young. Both left the nest hopelessly rickety and died a few days later.

Next year I gave her a grandfather-clock nest outside, and she damaged both her eggs. The other pair with a similar nest lost their young one as soon as it hatched. All three hens appeared to be firm believers in birth-control, never laying more than two eggs in a year and often only one.

Next came the moving of the birds to Peasmarsh. The hen bred in a movable aviary was upset by the change and did not nest at all. The big hen again hatched two young ones, a lutino and a green. Both were nice birds but within a few days of leaving the nest the lutino died of sunstroke ! The same season the small hen mated to the rough-necked cock managed single-handed to rear a nice green young one, a far better specimen than either of its parents. It and the nest-mate of the dead lutino are still alive and are both males. They are strong and robust birds.

Last year the mother of the lutino had two green young ones. One died in the nest when half-grown. The other, a cock, was reared but was a poor specimen and I gave it away when a year old.

The movable aviary pair reared a lutino and a green to leave the nest, the former a very nice one. The green hurt itself and died a few days after flying and soon afterwards the lutino was found paralysed in both legs. With careful nursing it seemed likely to recover but it finished by regaining complete use of one foot only and I had to give it away as a pet. The small hen again damaged her eggs.

1932 came round with hopes not inconsiderably chastened by former experiences. All three hens took to their nests. When the incubation period was up I looked in the nest of the one that bred the first lutino. Nothing, not even eggs ! She must be nearly sixteen years old and had her toes badly frost-bitten some winters ago so probably, never having been a good bird, her breeding days are done.

The small hen had one addled egg and one with a dead chick with the usual dent in the shell.

The third pair had two young but both were green. These were reared and are fair specimens. Once more, it seemed, I must wait for the coming of another season with my stock reduced by a hen no longer breeding ; but the unexpected happened. For the first time in her life the small hen laid again ! Her mate was duly removed when hatching drew near and, amazing to relate, she hatched both her eggs. Still more amazing both young birds proved to be lutinos and fine specimens at that. They are now out of the nest and flying strongly. Though I could wish she were more skilful in the handling of her eggs, I have nothing but praise for the devotion of the scrubby little green mother. So poor a flier that she gets about entirely by climbing, late in the season and single-handed, she has done her offspring so well that they look as though they had been reared by wild Ringnecks of the best quality. But it will not do to rely on appearances too far ; if they live to reach breeding age I shall mate them to strong wild greens and thus try and eliminate any faults, constitutional or moral, that may have come down to them from their dubious ancestry !

The results of this somewhat protracted experiment indicate that every pair of lutino-bred greens will produce a percentage of lutinos if mated *inter se*. Probably this rule holds good with the breeding of all rare colour varieties of Parrakeets. For some reason or other it is usually, in practice, wise to get all the young you can from your rare-coloured bird mated to normal wild ones and pair the progeny *inter se* and NOT to break your original pair in order to mate son to mother or father to daughter ; the result of the latter venture is apt to be infertile eggs and wasted seasons.

Of the young Ringnecks from lutino-bred parents that have lived long enough for their colour to be discernible, eight have been green and five lutino, which is, I think, very near the Mendelian percentage.

THE REARING OF WHITE-BRED ROSEATE COCKATOOS

By The Marquess of Tavistock

Some years ago the late Mr. Heumann sent me what he hoped would prove a white Roseate Cockatoo. The bird's wings were a rather chalky white, but as her plumage was a good deal stained by travel it was difficult to tell what colour she really was. During the moult she assumed a garb of rather pale grey, which was a disappointment, but she was a good breeding hen and, paired to a normal male, reared more than one family without fuss or bother. A few years later Mr. Heumann sent me a pair and this time there was no mistaking the genuine article, their snowy wings and backs forming a lovely contrast to their rosy breasts. Alas! tragedy was in store. The use of damp sand to cover the cage floor produced a serious chill. In spite of everything we could do the hen died and only with difficulty did we save the cock. When spring came round I sent the survivor, together with the pale grey female, to my friends at Keston, but though the birds kept in good health, the change to a small aviary demoralized them and they made no serious attempt at nesting.

Neither did matters improve when I brought them to Peasmarsh. The first year they did nothing: last year things looked much more promising but at the last moment the hen dropped her egg from the perch in the aviary shelter. She then collected a few slivers of wood and arranged them round the broken egg as a sort of funeral wreath and proceeded to moult. This year I provided her with a tempting assortment of tree-trunks and grandfather-clock nests with bark-covered tops. One of the latter appeared to attract her. You can always tell if Cockatoos are favourably impressed with the type of nest you offer them. If they like it they go into it but bite it very little; after all, if *we* liked our new house we should never think of gnawing a hole through the front door and another through the nursery floor!

As a precaution I told the aviary attendant to put some soft material on the floor of the shelter in case the hen should forget herself again. Sure enough she did: one morning an egg lay on the floor and what

was worse, since enough peat moss had not been used, it was a broken egg. You Budgerigar and Finch breeders with birds willing to lay half a dozen eggs three times a year, you may thank your stars that the fate of a season does not depend on a single egg or, at most, two !

After this débacle the Roseates took no more interest in their nest and a sinister dropped flight feather or two proclaimed, " No more hope till 1933." I was disgusted with the hen. Year after year I had kept her on because of her pale colour and early performances, but now she had failed me five seasons in succession. She should go and her place be taken by an ordinary lady of darker hue who had a proper appreciation of the comforts of a good home. The ordinary lady duly arrived and as it was too late to hope for anything this year was temporarily installed two aviaries away. That did the trick. Just as the best method of inducing an unprolific pen of fowls to commence business in the egg line is to start to eat them, so the best way to make a disappointing matron of the Parrot family do her duty is to prepare to get rid of her. The hen Roseate discerned what the coming of that other lady portended. She stopped moulting, once more took a lively interest in her nest, and her complexion deepened hopefully.

" In the spring a fuller crimson comes upon the Cockatoo.
(This is *not* the poet's fancy but is absolutely true.")

While the breast of the Robin and the neck of the Dove remain wholly unchanged since the moult of the previous autumn, the breast of a Roseate coming into breeding condition deepens by quite two shades without any moult at all.

In due course two eggs arrived, not on the floor of the shelter but in the proper place. The white cock proved a faithful and devoted father, spending more time in brooding than is usual with his species. The only thing that seriously upset him was the appearance of my daughter's new dachshund who was immediately identified with Yellow Dog Dingo and treated to an ear-splitting demonstration by the outraged parents, until hastily removed.

In due course the babies hatched and have now made their exit into the world—a nice couple, but normal in colour and darker than either parent, as is usual in the first generation. If they are ever to produce

white offspring they will need plenty of care during the coming months, for Roseates, though so hardy when full grown, are very delicate in early youth and are quite unable to withstand cold until they have completed their first moult.

MY SCARLET TANAGERS

By Mrs. Darnton

I bought my cock Scarlet Tanager from a dealer in July, 1931. When he arrived I put him into a cage by himself, and although he had been in England several months he was as wild as the proverbial Hawk. Only after he had been with me several weeks did he condescend to furtively snatch a mealworm from my fingers. The dealer had told me that his wings were clipped and that he wasn't sure if he would be able to fly to the branches in the aviary so, to make certain that he could, I released him one day in the room. He immediately flew straight into a large glass case containing a stuffed flying fox, half stunning himself, and when he recovered, but before I could catch him, he had crashed into several others which was bad for him, but which assured me that his flying powers were not impaired! He looked so lovely in the aviary that I made up my mind that the following year I would try to breed them, so about a month later on my way through London to Norfolk I went to De Von's and bought a freshly imported hen—his future wife. I took her with me in the car and when I got to my destination had a cage brought to my room in which I put her. Her plumage was very rough, but she was in good condition and improving daily when, one morning, on putting in a fresh orange, she slipped under my hand and crashed at full speed into a mirror over the mantelpiece. She fell back on the hearthrug with her head back and I thought she had broken her neck. With a sinking feeling I picked her up, but in a minute or two she began to come round. I put her back in her cage and there she sat for the rest of the day, hardly moving.

I was very worried, especially as for three days afterwards she hardly ate at all, but very gradually she recovered, although for weeks

she seemed dazed. I christened her " Nellie Knowles " after a nurse we had as children, whom we considered a little " dippy " ! When we got home I turned her out with the cock—" Rouge et Noir "—where she lived happily till early October when I brought them both into the house.

There they lived in a large cage, about 5 ft. high by 5 ft. wide by 3 ft. deep, with a Superb Tanager, two cock Fischer's, a Pintail, and a Paradise Whydah, and later I bought a pair of Blue Robins, a cock Shama, and a pair of Pekins. They all lived most amiably together, except Rouge et Noir and Nellie—she turned out a most exacting spouse and was continually rowing him. If he went down for a bite of banana she thought she would like some too and would sit and swear at him with her " hair " on end, and snapping at him until she had driven him off. Even if he were sitting snoozing on a branch which she suddenly fancied he had nothing but unpleasantness until he had given it up. All the softbills got very tame during the winter, most of them perching on my arm when I whistled for them. They all had the run of the room, our sitting-room by the way, when I cleaned them out, which, as I had numerous other cages to do, generally took an hour and a half every morning. They all flew out of their cage in more or less of a stream when I whistled and always went back at the end of their playtime. Even newcomers got into the routine after about a week, and it was only on the very rarest occasions that I had to take the net to any of them. A couple of hen canaries were the only stubborn ones—these I had to net nearly every morning until I got so sick of catching them that I put them into a separate cage.

When May came I put the Scarlet Tanagers in the shelter of the new aviary. This has a flight about 40 ft. by 20 ft. planted with a large privet bush, a couple of dogwoods, and a row of *Cypress Macrocarpa* and *Retinosperas* down the north side to act as a wind break. The aviaries, by the way, are in the centre of the rose garden, which is surrounded by a high screen of climbing roses and backed on the north by an apple orchard.

Already in February I had noticed Nellie Knowles, the hen Tanager, showing signs of that spring-like feeling. When loose in the room she was continually making up to Rouge et Noir and even picking the

stuffing out of one of the armchairs which was showing the passage of time. She certainly was less exacting in her behaviour to him and I was pretty sure they would have a shot at nesting, but the weather was so cold that I didn't open the shutter of their shelter and let them into the flight till 19th May.

It was a lovely spring day, a warm sun with hardly a breath stirring, and they were delighted to be in the open once more.

With them were a pair of Shamas but otherwise they had the place to themselves. They had both moulted out during the early part of the winter and both were in superb condition and plumage. They looked marvellous, either flying down for a mealworm on to the daisy-spangled grass or fluttering from branch to branch in the dogwoods.

As the days went by I noticed that she had quite stopped scolding him and my hopes ran high. Then one morning, 29th May, upon going into the aviary, I noticed Nellie with a piece of hay in her beak. She hopped down and collected more, finally flying with it all into the privet bush. This went on more or less all day, but Rouge et Noir never attempted to help and merely sat about watching, or occasionally flew at her very excitedly and rushed about the flight as if to relieve his feelings.

This continued for some days, until one day I was lucky enough to see him displaying to her. He made his body very slim and, erecting a ruff of feathers round his head, he would sidle up to her, swaying meanwhile from side to side. It was rather a wonderful sight and I was overjoyed to see it as I hoped it meant business.

Meanwhile the nest was nearly finished, built of grass, hay, rootlets, and a few dry bamboo leaves. It was placed nearly at the top of the privet, but Nellie always went to it from *under* the bush, climbing up the branches until she had reached it and then coming out at the top. I made a shelter of " Windolite " on a wooden framework in preparation for those sudden deluges which are apt to wash nests away, and hung it over the bush. Then to my disgust I had to go to London for several days. I returned on 8th June having been away five days. Naturally the first thing I did was to rush down to the aviary. Nellie was nowhere to be seen, but the cock was sitting on a branch looking very self-satisfied. After looking for her everywhere

I finally crept up to the bush—there she was, sitting on her nest. What a thrill!

Next morning she was still there and I wondered whether she was egg-bound, although she looked quite normal, but in the evening she came off to feed and, shutting them both in the shelter, I went and looked in the nest. Three eggs!

They were rather a light blue, like a small Thrush's, and three is the full clutch I believe. She had lined the nest with fine hay and a little horsehair, a moderately deep affair and very neatly made. She sat beautifully, only leaving the nest about three times a day for a quick feed, the cock not assisting at all. I continually wondered whether the eggs were fertile as he seemed so very uninterested in nursery affairs, but on the morning of the 20th June, that is, twelve days after finding her sitting on my return from London, she was off the nest and, taking a quick peep, I saw two little black bodies and only one egg. I felt like that much-heard-of animal, the dog with two tails, and on finding the third egg hatched after lunch, my joy was unbounded.

But now comes the snag. For some little time we had gone in for that delectable side-line, maggot breeding, but through an oversight on the part of the gardener, who had forgotten to order a fresh sheeps-head, we were suddenly maggotless! I had managed to find about fifteen or twenty small ones, but I didn't dare to put them in a dish on the ground as I knew the Shamas would finish them off before one could turn round. The only thing to do was to hand them to her as she came off the nest. This I did, sitting in the aviary all day, as she came off about every ten minutes. I also found about eight or nine spiders, but I felt that things were somewhat desperate. I telephoned to several places in London—no maggots anywhere.

I had also no idea as to whether she was going to be a good mother so, after considerable thought, I decided to put two of the babies in a Tit's box in the orchard, which had already two baby Blue Robins in it only a few days old. Then as a last resource I sent my husband over to Maidstone, 15 miles away, to continue the maggot hunt! He came back triumphant, having found a fishing tackle shop where they were sold as bait. Only very few of them were clean enough to give the birds, but we picked out some which we placed in a dish,

together with some fresh ants' eggs, under the Tanager's bush for the early morning feed.

The babies were almost black, and naked except for a little dark fluff on the head, and with dark carmine gapes.

Next day I managed to get her to take a few black clocks and the gardener found a small wasps' nest, the grubs from which were much appreciated.

On the morning of the 23rd on looking into the Tit's box, which by the way I had done daily, I found to my horror one baby Tanager missing. For a moment I stared bewildered, I could not imagine what had happened. They had seemed all right when I had looked at them the day before, both squeaking lustily and opening their little mouths wide for food. Then a thought struck me—had it been starved and thrown out—dead ? A young Tit has a yellow gape, so has a baby Blue Robin. Had by chance the mother Tit not seen the dark gape of the Tanagers so easily, consequently not giving them sufficient food ?

I took out the remaining baby—the parent Blue Tits cursing my interference from a nearby branch—and removed it to the aviary. I managed to coax Nellie and Rouge et Noir into the shelter, and then I placed the baby back in its original nest. Poor mite, when it was side by side with the other, I saw that it was definitely much smaller. I released the pair of Tanagers from the shelter, giving Nellie the last wasp grub. She immediately took it to the nest and presumably fed the hungry youngster as I heard it squeaking. Then she came back time after time for more—clocks, maggots, and ants' eggs all being taken at speed to the baby until it was satisfied.

They both grew steadily and after a few days it was difficult to say which was which.

By the 27th they had the wing quills well formed and the head quills just appearing. By this time Rouge et Noir had become a most attentive father and Nellie a truly wonderful mother, always on the nest when not feeding. The weather, which had been very cold for a couple of days after they had hatched, now turned really hot and it was most pleasant sitting in a deck chair in the aviary watching the birds and handing out clocks, now the most popular feed, as required.

By 20th June, at ten days old, the babies were feathering nicely, the brown appearing on their breasts. During the morning of 2nd July I noticed that Nellie seemed to be trying to get her babies to leave the nest, and having heard from Mr. Seth-Smith that the great fault with Tanagers was that they left the nest too soon and died from exposure, I decided to put them in the shelter and shut them up with their mother.

I walked to the bush and parted the leaves : one baby immediately fluttered out and the other flopped into the bush. The excitement meanwhile and the noise from the parents was colossal. The cock flew at my head and Nellie flew at the cock !

I picked up the two offspring and put them on some hay on the floor of the shelter. Poor old Nell was calling excitedly from the bush not realizing where they had gone, so I held out one of the babies to her, which she promptly tried to feed in my hand, and backed away until she followed me into the shelter.

While sitting resting after this effort, I heard several clear notes repeated over and over again. I looked round and saw that it was Rouge et Noir singing ! The first time I had ever heard him—overjoyed at the success of his family affairs I suppose. The babies grew well until they were exactly like their mother, except that they had not the red over the tail.

Now comes the really tragic part. I had to go away for a fortnight. We had had a month of really gorgeous weather, but just after I left, it turned very cold and wet. The far door of the shelter was left open, and the wind must have swept right through.

I only got back in time to see them die.

The *post-mortem* revealed acute catarrhal enteritis. They were about six weeks old when they died, and both cocks.

Moral—Don't leave home when you have precious young birds about. Something is sure to happen. I was terribly upset, but perhaps I shall have another chance as Nellie has gone to nest again in the same privet, and is now sitting—this time on two eggs.

1932; THE THINGS THAT DIDN'T COME OFF AND THE NEW ARRIVALS

By The Marquess of Tavistock

The present season, now almost at an end as far as further breeding prospects are concerned, has been on the whole a decidedly good one and in some ways unique. In the first place this summer has been the healthiest I can remember in twenty years of aviculture, just as last summer was one of the most disease-ridden. Since the middle of May I have only lost three acclimatized birds in the aviaries and had two ill, both of which recovered. In the birdroom I have lost two this year's youngsters only, one being a weakling. No doubt the autumn will make amends but for June and July to have a death- and sickness-rate as low as December and January is simply phenomenal, and I fear I shall never know it again!

It has been a good year likewise for stamina in young stock. Out of some fifty young birds hatched, only four have died in the nest and only three have been weakly, two having rickets. No cod-liver oil soaked seed was given this year but last year, in spite of cod-liver oil, there were about fifteen cases of rickets, the parents being, with two exceptions, the same as this year and having practically the same treatment with, perhaps, a trifle more green food and seed thrown on the ground to sprout.

It has also been a good year for eggs. Out of thirty-three possible breeding pairs only five failed to get as far as this important stage and two of these may make amends yet.

The five non-starters are the King Birds of Paradise, the Purple Sunbirds, the Palm Cockatoos, the Blue-fronted Amazons, and the Musky Lorikeets. To these might be added the Imperial Amazons, but as one is badly damaged by shot and I am not *quite* certain that they are a true pair they can hardly be called a fair chance; even they, however, got as far as going inside a nest.

The Birds of Paradise were successfully wintered in an outdoor aviary. Their shelter was well heated but the going-out of the heater on the coldest night of all did not affect them. Probably they are

hardier than we imagine. The hen carried nesting material a little in early spring and the cock became more vocal with cat-calls, but as is usual with this species they fell into moult in May and are now (15th August) only just through.

The Purple Sunbirds were my biggest disappointment. I had a beautiful hen given me late last summer and she came through the winter in show condition.

In May I introduced her to the cock's aviary where she settled down at once and seemed very happy, while he was as civil and attentive as a cock Sunbird can reasonably be expected to be. For a time she carried nesting material and things looked promising, but nothing more happened and the cock is now in winter plumage once more. They still agree all right but experience has taught me that he will become a dangerous bully in mid-winter when he *begins* to re-assume breeding plumage.

The Palm Cockatoos are very well and lively and the cock sometimes goes into a nest-box and destroys part of it, but they are exceedingly timid and I think their wildness is the chief handicap. Before they regained their spirits I thought them rather silent birds but now they have a remarkable repertoire both as regards variety and volume of sound. At first the only noises they made were a harsh grating scream of terror and a shriek like an excited housemaid. Now the housemaid yell is sometimes prefaced by a high-pitched whistle. They have a rattling chatter like a Magpie's, and a very loud, sudden, harsh sound, not a screech, but what one might imagine to be the result if three old gentlemen sneezed inharmoniously at the same moment, while three others simultaneously gave vent to an expression of discontent and disgust! In addition to these melodies the cock intersperses a curious "clik-cluk" with his comical display which consists in stamping with one foot, getting very red in the face, erecting his long, sparse crest, bowing and ducking his head, and looking sideways up at his mate out of one eye.

The lutino Blue-fronted Amazon again raised my hopes by coming into breeding condition in May and wanting to pair, but her mate, the ferocious Koko, repeated his foolish trick of last year and dropped into moult at the critical moment and would take but little interest

in her. As he has the temper of a fiend where human beings are concerned, I have now banished him and once more started the long and troublous process of accustoming the lutino to a new partner. Koko's departure, incidentally, was typical of his whole latter career. As the net of Fate and of the aviary attendant descended upon him he found time for a farewell injunction to his wife, " Give it him in the neck ! " which she duly proceeded to do, swooping down on Yealland's back and doing her best to scoop out a mouthful of flesh ! Until her character was corrupted by Koko she was, with people, quite a meek and amiable bird.

The Musky Lorikeets paired in early spring and I felt confident of their breeding, but in spite of a great variety of nests being placed at their disposal, they never took to any of them. The sexes of this species are much alike, but the bluish tinge on the head of the cock is more pronounced. They appear to thrive on Dr. Allinson's Food and fruit and will eat a little spray millet. Their actions are not unlike those of Trichoglossine Lorikeets but are more subdued, and they are far less noisy. They play together occasionally and assume quaint attitudes, but they are not nearly so grotesque in their behaviour as Swainson's.

The worst tragedy of the season was that of the Porphyry-crowned Lorikeets. A pair of these charming little birds passed the winter successfully in an outdoor aviary with a heated shelter and came into breeding condition in March when I provided them with a nest in the shelter, for although I find that most young Parrakeets do far better in a nest in the open flight, Lorikeets are sometimes an exception. Three eggs were laid and three young hatched, but they did not thrive and after a short time two died. I am afraid the food was not right as the parents kept searching about, even in the grass, for something, apparently, which they could not find. They had every kind of fruit and green food I could think of, but I believe they would have done better on Allinson's Food instead of sunbird mixture as they showed a preference for it later on. The third young bird lingered for about three weeks, but did not grow and then it also died. Two days later the hen fell ill and looked like following her offspring. Careful nursing, however, pulled her round and when returned to the aviary she seemed

in the best of spirits and likely to nest again. Soon afterwards, however, she fell ill once more, apparently with a slight chill. That evening in the heated hospital she seemed quite all right again. Next morning she was dead. A few days later the cock looked slightly ill. After a day in the hospital he looked quite all right: next morning he was dead. The post-mortem gave septicæmia in both cases.

The only other youngster to die in the nest was a hybrid which, had it lived, would have been a first record.

A few years ago Mr. Ezra kindly gave me a Hodgson's Slaty-headed Parrakeet. He appeared to be a very old bird with a constitution undermined by a long period of close confinement. He flew heavily, grew, year after year, one yellow feather and one twisted feather in his wing, and at first was very delicate and liable to minor ailments. However, as time went by, he grew steadily more robust, but I must confess I thought it most unlikely he would ever be fertile. I nevertheless provided him with a hen Plumhead as a companion and this year she nested in a box in the aviary flight and to my surprise hatched one of her eggs, the rest appearing to have young dead in the shell. The nestling survived until it was just beginning to feather. Probably it never had a very sound constitution, but I find it impossible to breed good Plumheads (or for that matter good King's or Crimson-wings) except in a natural tree-trunk.

A very beautiful Sula Island King × Crimson-wing hybrid was paired to a hen Crimson-wing and I quite hoped that they might have young even though he proved infertile last year when still in immature plumage. Although he was most attentive to his mate, the eggs, however, again proved clear and I am afraid he is quite definitely sterile in spite of the near relationship of his parents. The failure of the eggs to hatch and their ultimate removal was a source of great distress to him and his wife. It is quite pathetic to see the grief of a male Polyteline or Aprosmictine Parrakeet when his expected family fails to materialize. Cocks take the matter to heart far more than hens! When the Crimson-wing laid a second time I gave her a fertile Ringneck egg and they have reared their foster child most successfully and are much attached to it.

Two other childless couples were less fortunate, though I did my

best for them. One of these was a pair of Barrabands which last year reared a young Rock Peplar. This season again their eggs failed to hatch. When the eggs were due and overdue (not before) the cock, whenever his mate came off, would go up to the entrance hole, put his head inside and look and listen long and anxiously, then he would go away and do something else, but about a minute later he would hurry back and make another careful examination in the hope that a happy event might have taken place in the interval! But, alas! no little squeaks greeted his ear and only the motionless white ovals were visible in the darkness of the interior. When the eggs were taken away he made such a fuss and was so completely miserable that his wife took pity on him and (most unusual for a Barraband) laid a second time. On this occasion the Rock Peplar eggs were forthcoming but they too proved infertile so the poor Barrabands had no reward for their perseverance. The Rock Peplar who provided the aforesaid eggs is a source of much tribulation both to her owner and to her husband who greatly desires a family. Neither his entreaties and anger nor my inventive faculties can provide the wretched creature with a nest that appeals to her and every season she finishes up by dropping five eggs from the perch and then incubating that part of the perch from which the eggs have been projected!

My hybrid Princess of Wales × Crimson-wing had a young Crimson-wing of my own breeding as a companion. I did not in the least expect her to nest as she is only, I believe, a year old and certainly not more than two. Lay, however, she did.

Her first clutch proved infertile and was removed. If the Sula Island hybrid and the Barraband took the disappointment of their parental hopes badly it was nothing to the Princess of Wales hybrid. He became absolutely frantic. At first he thought his wife had deserted the eggs and drove her furiously about with torrents of bad language.to make her return to her duties. When he realized that there were no eggs to return to he spent the rest of the day fairly dancing with vexation, flapping his wings, ruffling his feathers, cursing, grumbling, and whining. At length he realized that the only thing to do was to make another start and he spent the *next* three days with his head and shoulders crammed inside the entrance of the nest, urging and beseeching

the Crimson-wing to try again. She did and we gave her a Rock Peplar egg but the embryo died at an early stage. The undefeated hybrid actually induced his young wife to lay a third time but she then felt that she had done enough and on this occasion flatly refused to sit!

The old Sula Island King, mother of the hybrid previously referred to, I mated with a Princess of Wales Parrakeet. Although she found his courtship antics of leaping wildly to and fro over her head rather disconcerting, she accepted him as a husband but the eggs were infertile. He was bred in a fixed aviary by Mr. Astley and is, I fear, definitely sterile as he has been a failure for many successive seasons with a hen of his own species.

Great hopes were raised when the Queen of Bavaria Conures, somewhat unexpectedly, went to nest in June. Three eggs were laid and although one was slightly damaged, the hen incubated the others very faithfully for quite a month. Unhappily there has been no result. My aviary attendant tells me that they carried a little grass into the nest.

The Fairy Bluebirds again misbehaved. Two eggs were laid, one of which was eaten after two days and the other deserted. It was put into a Flycatcher's nest but a stoat made a clean sweep of the lot. Very soon afterwards the hen went to nest again but became egg-bound, an ailment to which the species seems somewhat liable. We saved her but she would not sit. Malabar Parrakeets also had infertile eggs, the cock possessing a maddening habit of biting off all his flight and tail feathers just before the breeding season. I had the rather tantalizing experience this year of having no less than six valuable breeding hens, all anxious to nest and all without effective partners or partners of any kind. They were two Malabars, a Layard, a Salvadori, a Halmahera Hanging Parrot, and a Princess of Wales Parrakeet.

My big hen Banksian laid an egg and sat her full time without result; she has now started again with a second egg. I fear her mate, a Western Black Cockatoo, is also definitely sterile although, unlike most tame birds of his species, he is a very attentive husband.

The Worcester's Hanging Parrot, paired to a fine cock Goldenback, had two clutches of infertile eggs, the same as last year. In the autumn of 1931 I thought her breeding days were over as she suddenly

became a violent feather-plucker and, owing to the nature of her food, a cure seemed rather hopeless. Fortunately, however, she did not continue the vice and by the end of winter was again more or less clothed.

Yellow-bellied Parrakeets made another rather unexpected but unsuccessful effort at breeding. I had had the hen so many years without her settling down to business that I had come to regard her as rather a hopeless proposition.

The cock, a fine young bird bred by Monsieur Decoux, was extremely anxious to nest about April and seemed annoyed at the hen's reluctance to settle down to business. One day I found her a good deal knocked about and denuded of patches of feathers so I separated them for fear he should do her serious injury. A few weeks later I was surprised to see her display when I happened to whistle to her so I returned the cock to the aviary. They got on fairly well but their relations were " winter " relations rather than breeding-season relations. He cleared her out of the way when he examined the nest instead of politely making way for her and waggling his tail as she inspected the hole and also he never fed her. When she actually came into breeding condition in June he had begun to moult and though she sat her full time the eggs were infertile. I think that next year they will be all right as, in spite of the failure of this year's nest, they seem more friendly and on better terms than ever before.

With regard to new additions, among the more or less recent arrivals the pretty little Fair Lorikeet has settled down well in his outdoor aviary in company with an old Purple Sunbird. He is a very active little fellow and scampers about with mouse-like agility. He is rather nervous and on any hint of danger rushes into the aviary shelter and pops into his sleeping-box out of the entrance to which a few seconds later his head appears to take stock of the enemy. Would that I could get him a mate !

The pair of Rothschild's Birds of Paradise have done very well in their outdoor aviaries. The hen is in show condition and the cock would be but for a few flight feathers damaged before he was turned out. His great Whydah-like tail is now perfect and either that or his wings make a curious silky rustling as he flies from perch to perch.

Though a little shy they are far from being birds of a skulking and retiring habit and spend long hours morning and evening in the outside flights in almost ceaseless motion. They eat nearly a whole apple each a day in addition to other fruit, insectile mixture, mealworms, and cockroaches. They are rather silent at present and what noises they make are not unlike those of other members of the group.

After several unsuccessful attempts I seem to have got a cock Amethyst Starling who looks like living. They, too, eat a lot of apple but only the hen cares for insects. I found no difficulty in getting them to agree.

A young cock Slaty-headed Parrakeet kindly given me by Monsieur Delacour is slowly moulting into adult plumage. He seemed badly cage-cramped on arrival and is still stiff in his legs and wings, but he is improving steadily all the time.

A few weeks ago I obtained a mate for a lovely cock Racket-tailed Parrot that has wintered successfully in an outdoor aviary with a heated shelter. The new female is also doing well but I am a little afraid she is not *Prioniturus platurus* but one of the rarer and less beautiful species. I did not see the introduction but am told that the cock was delighted and spent a long time displaying to her, bowing and opening his wings. He now feeds her and they do each other's hair! I am hoping that a movable aviary may be the solution to the problem of keeping this uncertain-living species in good health. Among the true Parrots it is as unique in the exquisite soft beauty of its plumage as the Princess of Wales' and Bourke are among the Parrakeets. The feathers are wonderfully smooth in texture and there is no lovelier contrast than the bright, pale leaf-green of the breast, the grey green of the wings, the gold of the region of the nape, and the lavender of the crown set off by a little patch of lilac pink. Last but not least are a pair of very beautiful Sunbirds—*Chalcomitra senegalensis*. The hen has the humble brownish plumage common to her sex and genus, but the cock is a gorgeous creature, bronze brown with a glittering green patch on forehead and throat and marvellous wine-red gorget with tiny blue spangles like shot silk. I only hope that an open-air life with sunshine and live insects will prevent this glory from fading to yellow or gold with the

first moult. Certainly my little Scarlet Sunbird (*Sipa rajah*) has kept his colour perfectly, thanks to access to an outdoor flight the whole year round. He did not even require artificial light for feeding during the long nights of winter.

GREY AND RED JUNGLE-FOWL HYBRIDS

By Dr. D. S. Newill

It may be of interest to readers of the Avicultural Magazine to relate here my experience with a cross of the *Gallus sonnerati* cock and the *Gallus bankiva* female.

After several years of persistent search for someone who could procure for me and ship to this country a few specimens of the Wild Grey Jungle Fowl (*Gallus sonnerati*), labelled by some naturalist as the wild cock of the British sportsman of India, I finally secured a trio of these birds through the courtesy of my good friend Mrs. A. K. Ansell, former Secretary of the United Provinces Poultry Association, stationed at Lucknow, India.

Relative to the May shipment I am in receipt of a letter received August, 1931, which states: "This species has become very rare. I secured some but unfortunately most of them were received in a most damaged condition and died, but I did secure a nice trio which I dispatched to Calcutta to be sent on to you, but, unfortunately, they were badly damaged on the train with all precautions taken. One of them died and the two remaining were rendered lame and I had to take them back. I will again put forth an effort to secure another trio of the Grey Jungle Fowl and as soon as I get these birds I will ship them on to you."

On 1st May of this year I received a letter from the Secretary, United Provinces Poultry Association, 1 Sultanpur Road, Lucknow, India, dated 12th April, 1932, which reads as follows: "Dear Sir, I am in receipt of your letter of the 23rd of this month, 1932, and am glad to inform you that before this letter reaches you, you will be in

possession of a trio of Jungle Fowl, *Gallus sonnerati*, which I have been able to procure with the greatest difficulty. It is not that these birds are not available but they are very hard to capture and die in captivity. In this connection I have been put to a great deal of trouble and loss, but I am glad I could send to you birds in which you are interested, and am quite certain that with the precautions taken they will reach you safely."

The next letter received from the Far East was from Balmer, Lawrie & Company, Ltd., 103 Clive Street, Calcutta, India, which states: "Under instructions from the Secretary of the United Provinces Poultry Association we have shipped via S.S. *Elmbank* one crate containing three wild birds to New York. We enclose herewith bill of lading. Kindly arrange clearance from steamship and oblige. Sufficient food for six weeks has been provided, and the chief officer of the steamship has undertaken feeding during the voyage. Please acknowledge receipt."

The above-named S.S. *Elmbank* arrived in New York on 24th May and I received the birds two days later. Upon inspection at the railroad station I discovered one female missing, evidently thrown overboard during the voyage of two months on the ocean. The other female was in bad condition, the head badly battered and the bones of the skull exposed. The male bird apparently in good condition.

These birds were placed in my aviary in which was also placed a female of the Red Jungle Fowl. I quickly learned that the female Grey Jungle Fowl was quite pugnacious, both she and the male fighting the Red Jungle hen. Whereupon I removed the Grey Jungle hen to another yard, after which the Grey Jungle cock immediately began courtship with the Red Jungle hen. This female laid twelve eggs and on 12th July hatched twelve chicks. Eleven of these hybrids are living at this writing.

I placed in the same yard with this male another hen of the same species (*Gallus bankiva*). This bird laid ten eggs and is now hatching. I believe all of these eggs to be fertile.

The young cross-bred chicks resemble in plumage pattern the pure Bankiva chick, leg colour, however, being lighter, and at two weeks of age showed considerable white in wing feathers.

I am wondering if any of the readers of the AVICULTURAL MAGAZINE has ever made this cross in captivity, and will feel grateful to have a report in these columns of their experiences with these interesting hybrids.

Connellsville, Pa.

[A number of hybrids between these two species were bred in the London Zoological Gardens about twenty years ago. The cross was found to be infertile.—ED.]

SOME BREEDING RESULTS AT MYLOR, CORNWALL

By Mrs. K. DRAKE

A few notes on the breeding of some of my aviary birds may interest members of our Society.

The number of young birds bred this year has been small compared with previous years, but I really think I am pleased with the class of birds bred. Previous years have always given me numbers of Bengalese, Zebra Finches, Avadavats, and Goldbreasts, whereas now I have succeeded in breeding and rearing my first young Shama, three Pekin Robins, and two Pectoral Finches.

The Shama laid three eggs: one mysteriously disappeared, and one young bird was taken out of the nest dead, owing to my running quite out of mealworms for three days. I hunted for grasshoppers, caterpillars, spiders, and worms, and even found a few ants' eggs which were always taken to the nest, together with bits of hard-boiled egg. The parents seemed to eat nothing, they were so worried. Of course, they were flying loose with the Pekins, but at the time the garden was dried up and insects hard to find. Gentles they very much disliked, although I tried three ways of cleaning them, viz., two days in biscuit-meal, flour, and bran. The Pekins also did not take to them at all. I don't blame them! The hen Shama would fly into our dining-room during lunch, 100 yards away from her aviary, and carry back bits of omelette from off our plates.

The young bird is strong on the wing and very sturdy. My thanks are due to Mr. Thomasset for his kind letters of help.

I have had the mother Shama a year, and her mate only arrived the middle of June, when I put him straight into the aviary on his arrival. There was only a "scrap" at mealworm time, but he was always a little gentleman and gave way most politely to her. Nest-building began on the third day of their acquaintance. I left the main door and a trap-door open all day till 9 p.m., then only closed the main door as the temptation to vermin, etc., would be too great.

The Pekin Robins laid three eggs, and hatched and reared all. I had no idea such tame birds could turn so vicious when the young were out of the nest. Every day there was the same trouble, they would fly at me on entering, and oh, the screaming and chattering! All I could do was to stand perfectly still till their wild tantrums were over. Of course, I always pretended never to see the young birds. Sometimes they would all five fly about like lunatics, nevertheless, I love them very much.

It seemed to me extraordinary to see the Shamas and Pekins so friendly with each other; each would enter the other's aviary and even help itself to the other's food.

The Pectoral Finches last year made their nest in a box 6 feet from the ground inside the shelter, but were not successful in rearing their young. This year they built it in the open and under a primrose clump, and reared two very fine birds. My Cordon Bleus reared up to nine or ten days then forsook their young—as usual.

The four hybrids of the St. Helena × Orange-cheek that I bred last year are to-day charming and lively birds and are greatly admired by all who see them, also the Goldbreast × Avadavat hybrids, with their strongly marked red eye-streaks and vivid scarlet-gold breasts and the white dots of the Avadavat.

THE BREEDING OF LOVEBIRDS IN WESTERN CANADA

By Paul Kuntz, Winnipeg, Man.

For the past four years I have been devoting attention to the rearing of Lovebirds. The part of my aviaries assigned to these birds is 12 ft. by 10 ft. by 7 ft. high, and is fitted with sufficient nest-boxes, placed about 4 feet apart, to allow two boxes for each pair of birds, two 10 lb. seed hoppers, and running water in a small fountain. This is the breeding aviary ; in the winter the birds are kept in a warm basement as our winters are much too severe for this family of birds.

In the spring of 1931 nine mated pairs of Lovebirds were placed in the aviary : four pairs of Fischer's, two pairs of Nyasaland, one pair of Black-cheeked, a male Fischer's mated with a Black-cheeked, and a male Fischer's mated with a Nyasaland.

Keep Birds Busy

At first there were many squabbles and much minor fighting among the pairs, but nothing serious resulted. However, after watching the birds I came to the conclusion that the only way to have peace and breeding success was to keep them busy and contented all the time.

With this end in mind I placed each day during the breeding season a 5 or 6 ft. branch of maple or other tree bearing numerous twigs and leaves, upright in a large jar of water, and found that this solved the problem and produced the harmony necessary for success. Every bird became engrossed in stripping off the leaves, twigs and bark and was too preoccupied to notice what was going on around him, so the quarrelling ceased as if by magic. I have counted as many as twenty-eight old and young birds on one branch, contentedly working away without a murmur from one of them.

Food

The two 10 lb. seed hoppers were filled with half canary and half millet mixed. Apple, dandelion, lettuce, and seeding grasses were given daily, and also bread soaked in water and squeezed dry. Water is used in preference to milk as our high summer temperatures rapidly cause the latter to sour. A constant supply of grit, sand, old

mortar, crushed egg-shell, and cuttlebone was furnished and once a week the birds were given oats soaked in water.

Eggs Need Not Be Sprinkled

As a result of placing fresh, leafy branches in the aviary I discovered that it was not necessary to sprinkle the eggs with warm water as I had done previously. Every day the birds carried fresh green leaves to their nest-boxes and these supplied the eggs with sufficient moisture. Boxes containing young were also kept fresh and clean through this practice. I am informed that some American predatory birds, particularly Cooper's Hawk and the Broad-winged Hawk, always have a supply of fresh green leaves in their nests when they contain eggs, but this is not general amongst our passerine birds.

1931 Breeding Results

Black-cheeked, one pair: 3 nests, 5, 6, 4 eggs; 4, 5, 4 young. Total: 15 eggs, 13 young.

Nyasaland, two pairs: 3 nests, 5, 4, 5 eggs; 2, 4, 4 young. Total: 14 eggs, 10 young. 3 nests: 1, 4, 4 eggs; clear, 3, 4 young. Total: 9 eggs, 7 young.

Fischer's, four pairs: 3 nests 4, 3, 5 eggs; 4, 2, 3 young. Total: 12 eggs, 9 young.

Three nests: 4, 3, 5 eggs; 2, 3, 3 young. Total: 12 eggs, 8 young.

Three nests: 3, 2, 4 eggs; clear, 2, 3 young. Total: 9 eggs, 5 young.

Three nests: 5, 4, 2 eggs; 3, 2, 2 young. Total: 11 eggs, 7 young.

Fischer's × Black-cheeked, one pair: 3 nests: 4, 5, 3 eggs: 3, 5, 3 young. Total: 12 eggs, 11 young.

Fischer's × Nyasaland, one pair: 3 nests: 3, 4, 3 eggs; 3, 4, 2 young. Total: 10 eggs, 9 young.

Grand total: 104 eggs, 79 young, all of which were raised to maturity.

Banding Young

In my experience it was disastrous to put open aluminium rings on Lovebirds. In the first place the bands on the market are not strong enough for the purpose; in the second the parents soon remove them,

but if they remain on, the young themselves in a couple of months squeeze the bands flat and injure their leg; in the third place it is difficult to remove such rings.

I consider it essential to band young Lovebirds with closed aluminium Budgerigar rings when they are twelve days old. If the tagging is done sooner the adults remove the rings.

CORRESPONDENCE, NOTES, ETC.

ADDITIONAL NOTE ON THE CHINESE BAMBOO PARTRIDGE

Since writing an account of the successful breeding of *Bambusicola thoracica*, it is worth while recording the following: The hen Partridge laid eight more eggs in the same aviary where the first brood had been hatched, the young birds not having been removed from it. These eggs were put under a Bantam and hatched on 8th August, and are all doing well. Meanwhile the Partridge laid again, and brought off her third brood of five more young ones on 19th August. Within twenty-four hours the three young ones of the first brood, now nearly as big as their parents, had each adopted one baby, the old cock taking a fourth, leaving only one to be cared for by the female; the young ones not only each brooded their special baby, but actually broke up mealworms to feed them with. At night the whole party of ten birds settled down closely wedged together. The only other example of first brood birds feeding and brooding their younger brothers and sisters of a second brood, is in the case of Moorhens, who will occasionally do so, but it is not a very common occurrence. The old pair of Partridges have, therefore, had three broods this summer, and laid seventeen eggs. Of these one egg of the first lot was rotten, one young bird was killed and eaten by another bird in the same aviary before we could remove it, three young ones of the first brood have been fully reared, seven more are doing well under the Bantam, and I see no reason why this last lot of five should not be reared also.

G. H. Gurney.

HOW TO SEX NYASA LOVEBIRDS?

Could you inform me (through the AVICULTURAL MAGAZINE) how to sex Nyasa Lovebirds? Here in Australia nobody seems to know.

H. G. BARNARD.

ADELAIDE.

[Unfortunately nobody outside Australia knows either.—ED.]

A RARE SOUTH AMERICAN GROSBEAK

In last year's Magazine (pp. 4, 227, 289) there was some correspondence about the very rare South American Grosbeak (*Neorhynchus nasecus*), in reference to one seen by Miss Chawner in Herr Stefani's aviaries at Holzheim in Germany; this bird had just arrived and was considered a first importation. Rudolf Neunzig has recently written an article on the species in *Die gefiederte Welt*, in which he says that it was first imported in 1927 by Schöndube of Berlin. A full account of the plumage is given and a summary of the little known of it either aviculturally or otherwise. A Herr Steinhagen appears to have had eggs (*Gef. Welt.* 1928, 575), and according to a label on a skin in the Berlin Museum we ought to believe that it had been bred, "*von Herrn Stefani gezuchteten.*" We then read, "It is to be hoped that the lucky breeder will quickly report his success," a hope we can all support.

E. HOPKINSON.

BREEDING OF THE INDIAN RINGNECK PARRAKEET

Perhaps a few notes on the breeding of the above may be of interest to some of our members. Here at Keswick Hall lived a fine pair of these Parrakeets which, during the early part of the year, were given an aviary to themselves. They quickly settled down and we hoped we might induce them to breed during the summer. They were given the choice of three nest-boxes, one a natural log placed on a tree-trunk, one a large oblong box with concave bottom made by a carpenter, and the third a small rough box made by myself. During the latter part of March all three boxes were visited in turn, but they chose the most unlikely of the three, the rough box. The hen disappeared on 24th April but, the box being so small, her tail

was always sticking out of the entrance hole. She sat very well, I cannot say how long, but at a guess should think about twenty days. The cock was always close at hand, keeping watch. After a time I could hear the sounds of young and, many days later, one morning on going into the shelter to feed I saw a young Ringneck poke its head out of the hole. I saw this performance every day for many more days until 6th July when, going into feed, my little friend was missing, and all seemed strangely quiet and still. I knew something had happened. Going near the nest-box I tapped the bottom, but still there was no response, and I thought the birds must be dead and once more I should have to report failure. We bird lovers get so many of these failures that we get used to them. I felt rather downhearted and was turning sadly away when, glancing into the open flight, I beheld squatting in the grass a fine young Ringneck, nearly as large as its parents. A few minutes later it was on the wing, flying up to the perch alongside its parents. I wanted to rush off and tell my employer to come and look at the sturdy youngster, so excited was I. Another young one left the box two days later and they are doing well. Although they are only common Ringnecks I was delighted and they give me just as much pleasure as if they had been some much rarer and expensive species.

A. MARTIN.

OBITUARY

WILLIAM SHORE-BAILY

We deeply regret to have to record the death of Mr William Shore-Baily, of Boyer's House, Westbury, Wilts, which took place on 24th August at Liskeard, Cornwall. Mr. Shore-Baily has been for many years an active member of our Society and frequent contributor to our Journal. He served on the Council on several occasions, and his aviaries, in which many rare species of birds were bred for the first time in this country, were well known to our members.



John Bale Sons & Danielsson Ltd London

(Left) Black-rumped Parson Finch
Poëphila atropygialis.
(Right) Parson Finch or Banded Grass-Finch
Poëphila cincta.

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THE PARSON FINCH

The Parson Finch (*Pœphila cincta*), also known as the Banded Grass Finch and Black-throated Grass Finch, was at one time a very well-known bird in European aviaries, but in recent years it seems to have disappeared entirely and been replaced by the now familiar Long-tailed Grass Finches (*P. acuticauda* and *P. hecki*).

Our plate shows the, at one time, common Parson Finch, with white upper tail-coverts, and the much rarer Black-rumped Finch, which appears to be its extreme Northern representative. So far as I am aware, *P. atropygialis* has never been imported alive to Europe. The Parson Finch inhabits Queensland and the adjoining parts of New South Wales, whereas the Black-rumped form occurs in Northern Queensland and Northern Territory. In recent years I believe that all of the Grass Finches that have been imported alive have come from the north-west of Australia, which accounts for the presence in recent importations of the Long-tails and others of the western forms and the absence of the once familiar Parson Finch.

The Parson Finch was a jolly aviary bird, a free breeder though sometimes quarrelsome. Its habits, so far as I recollect, and I have kept several, were almost identical with those of the Long-tail. In fact the Long-tailed Grass Finch is an improved Parson Finch, with red instead of black bill and elongated tail-feathers. The nest of the Parson

Finch is the usual bottle-shaped structure of grasses, but it will also build in any suitable box or basket. In Dr. Hopkinson's *Records* he writes of this species : " Easily bred, often many broods. When these birds were commonly imported it was bred so often that success was usually considered not worth reporting."

D. S-S.

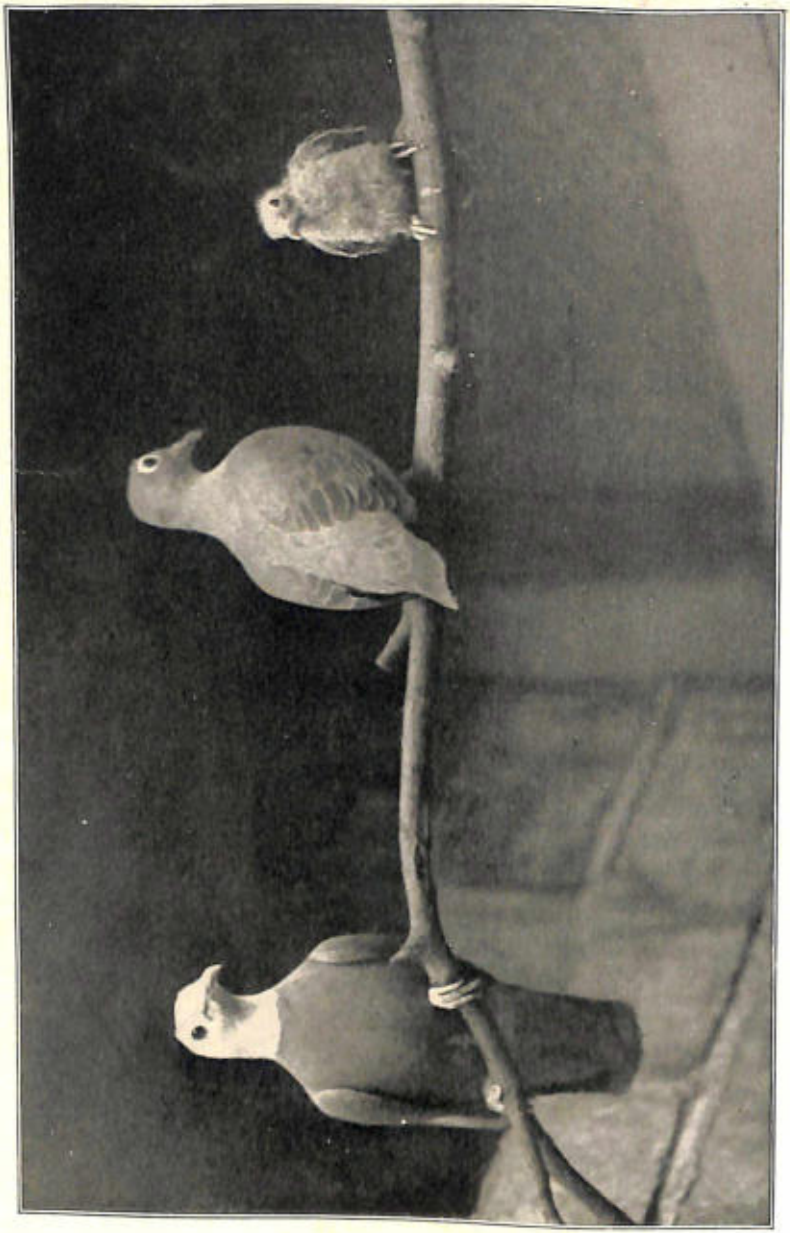
BREEDING THE BLUE SUGAR-BIRD
DACNIS CAYANA

By Mrs. Dewar Murray

In 1931 my hen Blue Sugar-bird laid several eggs, mostly dropped on the ground. Then she made a nest in some hay placed against the aviary wall, lining it with wool and moss. The first egg was laid on 17th May and the second on the 19th. She sat her full time, but both eggs were infertile. In 1932 the pair started looking for a nesting site in the same place but would not build, so we made a small depression in the hay and in this she started to lay. The first egg arrived on 16th June, the second being laid two days later. The hen sat steadily until the 28th, when a young bird was hatched. Other eggs were fertile but addled. Both cock and hen fed the chick for two weeks on bread and milk, Mellin's food and honey and fruit, and above all mealworms, which the hen took from my hand while on the nest and after chewing fed to her offspring.

After this the two birds tried to kill the baby, so I had to feed it by hand—a performance which I successfully accomplished. It is now very lively and, of course, feeds itself quite well.

The parents were hand-reared in Trinidad, and brought home by me, and are therefore perfectly tame. I think they will have more nests and, I hope, do better next time. I should like to know if anyone else has bred this species.



Young Black-crowned Fruit Pigeon with its Parents.

To face p. 267.]

THE BREEDING OF THE BLACK-CAPPED FRUIT PIGEON (*SPILOTRERON MELANOCEPHALUS*) AT PRIMLEY

By Captain H. S. Stokes

On a recent visit to Primley I was delighted to find that Mr. Whitley has succeeded this year in breeding this beautiful Javan Pigeon. After several unsuccessful efforts myself, I passed on my pair of birds to him two years ago. Several times a young bird left the nest in my aviaries, only to be neglected by the parents, who refused thenceforth to brood or to feed it. Mr. Whitley has been more fortunate, and doubtless more clever, and has reared a good young bird; he confirms my observations that the young leave the nest when only a few days old and very small, in fact no larger than a Mannikin, but able, nevertheless, to fly strongly. The difference in size between the parents and the young bird is shown in the accompanying photograph, taken at Primley.

I believe that this is the first breeding of this species in Europe.

THE BREEDING OF BARNARD'S PARRAKEET, AND OTHER ITEMS

By Dr. Evelyn Sprawson

Tastes may differ with regard to the beauty of the different colour schemes which birds present for our edification, but to our mind John Gould wrote in a particularly happy vein when he eulogized the pleasing coloration of Barnard's Parrakeet. It is, moreover, a shapely bird and not often bred in this country.

We have had our present pair for some eight or nine years, and though attempts were made at nesting when we lived nearer town, it was not till we were able to give them larger space—and incidentally greater freedom from feline visitors at night—that they really seriously went to nest, so that they have in each of the past three summers nested and reared a family.

This year, however, they have exceeded all past efforts, for the hen laid a larger clutch (five eggs) than hitherto, and hatched and reared all of them. This was more than we had even hoped for, because on account of some infertile eggs in 1930 and 1931 we had since last autumn had the hen flying with another cock bird, hoping for increased fertility, and shut up the old cock Barnard in the shelter of another aviary some 40 yards distant, only letting him out occasionally.

The hen, however, would have none of this, and as she was making no attempt to nest, even five or six weeks after her usual date for going to nest, we in despair put back the old male, with the result that she started to lay some nine or ten days later.

As the male had been shut in for a good part of the winter, we were very doubtful as to the fertility of any of her eggs, and were therefore very pleasantly surprised when she hatched all of them.

We are uncertain to what extent her success depended on going to nest later in the year, when the weather is better and the days longer, and on the type of nest she used. Each year she has used a different nest; first a large hollow tree trunk standing 7 feet high and partly filled with earth with a layer of peat-moss on top; last year a small box in which both Redrumps and Manycolours have at different times reared families, and where she laid on the bare wood; this year, thinking that a nest-box that would keep out cold or undue heat better might be more acceptable, we constructed one of 2 in. wood, about 4 feet high, partly filled with earth, and with a layer of peat-moss on top. Although all three nests were in the flight, the hen had no doubts as to what she wanted: she did not look at either of her old nests, but made straight for the new one and used it with hardly any preliminary inspection.

Allowing three weeks for incubation, the young left the nest rather earlier than usual—several days before the completion of the fifth week, except the last one, which overstayed its time.

The young were comparatively easy to sex as they left the nest, not only on account of the lesser size of the heads and beaks of the hens (there were two), but also on account of the markedly duller colouring, particularly of the green patches over the ears. What seemed remarkable to us was the difference in colouring of the individual young; both the parents are of the ordinary, rather pale green (on

the upper breast and abdomen) type of Barnard, but some of the young are quite of the darker type called by Matthews in his big work *B. b. whitei*—indeed, no two of the young are identical in colouring, and the crown of the head (for instance) varies from almost yellow in one to dark green in others.

We have never seen the parents less concerned and worried over the feeding of their family before leaving the nest; indeed, except for the occasional disappearance of one or both parents, we would hardly have known that they had a family.

The young were reared almost entirely on soaked hemp and groundsel, canary seed and wheat (both soaked) were always available, but not much used; they were also given an occasional chop-bone with fragments of meat on; this last perhaps needs some explanation, as it is, of course, rather unorthodox. We have noticed from time to time that Barnards, Pennants, etc., eat earthworms, which they find on the lawn in their flight; now it seems rather derogatory for such birds to be found eating earthworms, yet seems to suggest that food of an animal protein nature is desired, moreover I have read somewhere—in Gregory Matthew's big work, I think—that Port Lincolns used to settle on the camp refuse dump in Australia to make a feast from the bones there, so we offered them a chop-bone. They seemed to know what it was for, because they left all other food and devoured it forthwith, bone and all, usually, but we did not give it very often, about once a fortnight.

After the young had left the nest, and when green oats became available these were given, and it was instructive to note the speed and method with which they were devoured; it made one sympathize very much with the Australian farmer on whose field of growing or standing corn a family of these or kindred birds may settle to feed. What must it be when a flock of thousands (as it used to be) of the much larger Roseate Cockatoo settled on his fields? One can readily forgive him shooting, trapping, or doing anything else he may think of to compass their diminution, which no doubt seems a strange thing for an aviculturist to say—but, after all, even the farmer has to live, and it is a question of his living or theirs.

We are rather proud of our nest of Barnard's because we believe

that so large a nest has not been bred in an aviary in this country before, though we know that about twenty years ago a similar nest was recorded as obtained from birds at complete liberty. Apart from the above, it has been an unusual year ; for the past three years each of two pairs of Manycolours has reared a family, though sometimes a small one, but this year neither of two pairs even laid an egg. Why? We don't know. They seemed to want each other's wives, for though they were some 35 feet from each other, with intervening aviaries, they could both see and hear each other, so we changed them over, and even then they weren't happy.

Rose-breasted Grosbeaks (*Z. ludovici*) bred this year, hatching their total of three eggs and rearing two, one of each sex. These are nice birds; we could sex them seven days after hatching by the pink underwing colouring of the male. To our surprise both the young were out of the nest on the tenth day, and did not return to it. Unfortunately we have recently lost the young male, but the young hen seems to be larger than either of her parents.

The Chinese Black-tailed Hawfinch (*Eophona melanura*) also nested and laid three eggs ; these were very pretty and like large editions of the egg of our common Bullfinch, only rather greener, but they are evidently subject to considerable range of variation, as I see that in 1916 the late Mr. Shore-Baily described some in his aviaries as being almost exact replicas in colour and markings of our Yellowhammers. All three hatched, and we were in great hopes, as we think this Hawfinch has not been bred in an aviary in England before, though the larger Japanese Hawfinch has. However, we were disappointed, for on the eighth day the parents removed and killed the rapidly growing young, and though we thought they were going to nest again they did not do so. They seem rather quarrelsome with each other when nesting, and if the male came anywhere near the nest, as he frequently did, when the hen was sitting she would leave her nest and they would appear to be quarreling and scolding each other violently. The male, in spite of his size, seemed to be rather henpecked.

Satyr Tragopans (one pair) laid nine eggs; seven of these were fertile but four failed to hatch ; of the three which hatched one (we think) over-ate himself with gentles, one was overlain by his foster-mother,

but the third (and last) is still with us and a very pretty chick and, as I write, two months old. This tale of the Tragopans is horribly reminiscent of the ten little nigger boys ; it is our first experience with them, though we have previously reared many Golden and Common Pheasants. The young one was reared on hard-boiled egg and biscuit (pressed simultaneously through the perforated zinc bottom of a gravy strainer to break it up into small particles), plus chopped lettuce and onion, and a few clean gentles only ; they seem to be vegetarians mainly when young.

In the April issue of our Magazine Capt. Scott-Hopkins refers to the male Tragopan as a Pheasant which he has never known molest his wife ; perhaps ours is the exception that proves the rule, as he has on two occasions severely mauled his wife ; indeed, we thought he had finished her the second time. It was, we think, our fault in that we coddled them too much and shut them in the shelter each night, where the hen had no hiding-place. Since they have had continuous access to both run and shelter and cover has been supplied there has been no repetition of these attacks. Incidentally they never seem to use the shelter. The hen nested and laid on the ground.

Other less noteworthy species have also bred and Gouldians are only now starting. Like Mr. Teague, we have specialized in these (since 1913) ; it was not only the first foreign bird we ever possessed but also the first we ever bred ; we have often bred them, but only in small numbers. If only they could be got to go to nest earlier in the year they would be one of the easiest of birds to rear. At Highgate they almost always went to nest about 7th August, but here, possibly because of the elevation and exposure, so far they have been three or four weeks later. We once had one male put two hens to nest in the same aviary : all the eggs hatched but it was late in the year and we only reared a few ; we did not know then what we know now that if you catch up the parents and place them and the nest in a flight cage (" double-breeder ") they will carry on the good work of rearing their young indoors in the dry with complete success. We have bred from our English-bred males quite often, but it may be coincidence that, though on five or six occasions we have had our own English-bred hens go to nest and lay large clutches, they have never yet been fertile. We have

often noticed that cock Gouldians will *not* pair up with young hens (i.e. just out of immature plumage), whether aviary bred or imported, if older hens are available.

A point of importance to the buyer of newly imported Gouldians is not to give them grit or sand in their cages when newly purchased—or only to do so for a few minutes each day. It must be remembered that these birds are caught and collected in the north-west of Australia: they then have a long journey to a port, usually Sydney or Melbourne, and wait there till the remainder of a consignment is ready. This may mean some, if not many, months in a trapper's travelling cage, as the invariably overgrown state of their claws testifies. In order to keep their plumage unsoiled and intact the trappers and dealers keep them in travelling boxes with wire netting above the floors, so that no sand or grit is available for them; if, then, on arrival and purchase in this country they are isolated and given unlimited grit, they eat and continue to eat it, and so, in conjunction with the fact that they now have unlimited food without having to compete for it in a crowded travelling cage, get violent indigestion followed by acute enteritis, which finishes them off in three or four days. When they are turned out into the aviary they have other things to interest and occupy them, and if the weather is favourable are not affected in this way.

We also possess a pair of Vulturine Guinea-fowl, wonderful birds, everybody notices them; each year the hen has laid in the aviary flight which, we believe, is an unusual if not isolated instance. Unfortunately they lay so late in the year—each time (twice) it has been in August and September—when broody hens for fosters are not usually available, and last year we did not hatch any, but we are trying again this year and hope for some success, though I don't know that we really expect it.

The question of vitamins and the nourishment and growth of young birds is an intriguing one; one feels there is such a lot that we *don't* know. For instance, why, in a brood of Parrakeets, should some of the young be vigorous and lusty and others rickety (is it really rickets ?) ? All, obviously, must be fed on the same things, and they are entirely cut off from sunlight (as a source of Vitamin D) till nearly five weeks old; is it because some are greedy—or better feeders—

and so get more of the necessaries of life? We wonder. Comparable cases have been recently recorded of human twins, identically fed; one has developed into a healthy and vigorous child and the other been rickety. Why? No answer has so far been vouchsafed. But one notices that with all sorts of birds, and such mammals as one has been able to notice, that it is the greedy ones (the best feeders) that develop into the finest and most vigorous specimens.

It may be noticed that the first person plural is freely used in this article; this is because such success as has been attained would have been entirely unattainable had it not been for the interest and co-operation of Mrs. Aviculturist with the writer, and so explains an apparently dual personality.

ATTEMPTS TO BREED VIOLET-EARED WAXBILLS

By Elsie Robinson

I am setting down these notes in the hope that any experience and knowledge I have gained this season in my attempt to breed this most beautiful of all Waxbills may be of assistance to members of the Society and eventually lead to successful results.

The cock bird, one of a pair which I purchased from Mr. Frostick, has been in my possession two years and nine months—the hen, which was unacclimatized, I bought of Messrs. Gamage last winter. I have kept the pair as hard as possible, using very little heat, but confined to the bird-room until early May. The cock bird, a fine specimen, was anxious to nest, and persisted to such purpose (although he was a long time in selecting a site) that a nest was built early in June in their winter quarters, a caged section of the inside aviary measuring 5 feet by 3 feet. The nest, roughly made in a branch, was placed fairly high, and built by the cock unaided. The first clutch of four eggs was laid with, so far as I know, an interval of a day between, the hen commencing to incubate from the first egg laid and the cock taking his turn in sitting on the nest.

From this nest three young were hatched and were deserted by the parents—no attempts, so far as I know, being made at feeding. After what seemed a very short interval, another nest was built in a box in the same cage. To have every chance of success I determined to curb my anxious interest, and not run any risk of disturbing them, not even daring to peep into the nest, much as I desired to do so. About the sixteenth day I noticed the cock eating an extra amount of ants' eggs, and came to the conclusion that the nest contained young. He confined his diet to ants' eggs the first four days (which were those of the large pinewood ant, and were supplied to him absolutely fresh). After the four days their feeding consisted of millet well soaked; this went on to about the tenth day, when I discovered one morning a well-developed bird (the only one) thrown out on the floor of the cage.

I subsequently found another egg, still in the nest, showing traces of slight germination, and I imagine this had got chilled. I am at a loss to account for the misfortune with the young bird unless, indeed, with these breeding-shy birds, I made an error, previous to going out for the day, in taking the gardener into the bird-room to give him some instructions during my absence. He had not previously been in the room, and it was soon afterwards that I discovered the tragedy.

My success in getting so far was due, in my opinion, to the fact that I confined the pair when nest-building to the caged section of the bird-room, and denied them the liberty of the flight, thereby giving them little opportunity of dividing their attentions from the object in view and leaving them entirely to themselves. Although mine are a very tame pair of birds, I imagine that birds of this species are very jealous of their nest and resent even a glance at it. The other important point, I think, is to see that the ants' eggs are given to the birds *absolutely* fresh.

My St. Helena's have done well this season. The pair that reared a nest of seven last season have reared another nest of six, which were fed by the hen, the cock unfortunately dying during the rearing stage. From another pair I have reared two young and they have now a nest of six eggs.

The Bronze-wing/St. Helena Hybrids, bred last season, still resemble

the St. Helena in appearance, although they have a shorter beak. The cock bird, however, has the quaint courting dance, that of a Bronze-wing, and resembles his father in this respect; his song is a funny mixture between the two.

THE STORY OF A QUAKER PARRAKEET

By Sydney Porter

A few years ago when Parrots "and all Parrot-like birds" were found to be carriers and distributors of that terrible and fell disease "Psittacosis", and when, according to the columns of the various "Daily Liars", so many thousands of the human race were being swept to an untimely death by the said dread malady, Derby possessed a solitary but well-worn park, namely, "The Arboretum," where on sunny days the countless offspring of the population of the surrounding sordid streets were pushed in perambulators by their slightly elder brothers or sisters as the case may be, to enjoy the sickly rays of the sun which managed to penetrate the pall of smoke and mist which usually hangs over this noble city.

In a dark corner of the above-mentioned green oasis stood three aviaries, one constructed out of a derelict tramcar, but all sadly in need of repair. One contained a few rabbits and many mice; the others contained, as well as mice, a few Pigeons, a sickly Peafowl, and about seven or eight Cockatoos which, in the days when they flew under the blue skies of Australia, were white, but after many years of incarceration and following the law of evolution, had taken on the colour of their surroundings—a raiment of sooty grey.

Now we are blessed in this happy city of ours with very able and conscientious municipal authorities who, above all else, have the welfare of the citizens at heart.

When the outbreak of "Psittacosis" occurred consternation reigned. The citizens of Derby must be protected at all costs. Such minor things as smallpox, tuberculosis, bad drains, stopped-up sewers, and other such trifles were forgotten. Humanity must be protected from this new and terrible scourge.

Notwithstanding that several of the Cockatoos were almost about to qualify for the old-age pension, and also that several had been given by the writer of this article, these deadly birds met the fate which no doubt they richly deserved—they were all shot ! And so the population of Derby was saved—or at least nearly so.

Knowing the Socialistic tendencies of my family, it was a great wonder that the local Press did not discover in my action of giving the birds to the said " Arboretum " a sinister Bolshevik plot to annihilate the rest of the peaceful inhabitants of the town by the introduction of these death-dealing feathered fiends who, every moment of their lives, breathed millions of the deadly " Psittacosis " germs into the pure air of Derby. At all events, my sinister designs were thwarted—no one died of " Psittacosis ". Possibly the wind was always blowing in the wrong direction, or the air of Derby was too pure ! Or possibly it may have been due to the ignorance of the local medical fraternity, for we are told by certain eminent medical authorities that " Psittacosis " is practically indistinguishable from pneumonia : so in their lack of knowledge, not having had to deal with the disease before, they may have diagnosed many cases as pneumonia.

When this malady was so rampant (in the columns of the Press) many a village doctor was called in to visit a sick child ; if the symptoms were difficult of diagnosis the doctor would ask : " Have you a Parrot in the house ? " " Why, yes, the one wot Uncle Sam brought from India when he came home on leave." There was a grave consultation. The child had " Psittacosis ". Polly's death-knell was rung, so was the pretty green neck. Humanity must be saved, even though the child does beg for her pet to be saved, but what are the tears of a child to the fate of a nation ?

I am quite sure that I must have had several attacks of " Psittacosis " in the days when it was so fashionable ; how could I escape when I kept dozens of Parrots ? but the unenlightened doctors always declared it to be pneumonia. Still what did it matter, I never did like to be in the fashion where ailments were concerned, and no one would have been able to satisfy their sadistic desires, for I would never have let any of my Parrots be destroyed.

To get back to the hero of the story, who has not had so much as

a look-in yet. There was also another inhabitant of the Cockatoo's aviary, of course not counting the mice, a little Grey-breasted Quaker Parrakeet. In their gross ignorance the ones in authority thought this bird too small to communicate the disease to the inhabitants of the town over which they watched so fondly. If they had only have known or communicated with the Minister of Health on the subject, they would have found that "every Parrot-like bird", whether a Love-bird, a tiny Parrotlet, a giant Macaw, or even a familiar Budgerigar, was tarred with the same brush. So our little Grey-breasted friend was sold for a few shillings to a local bird dealer. Months passed; the little prisoner remained in its tiny cage with no perch at all, for "what was the good of giving a Parrot a perch to stand on when it bit it up every time?" No, it had to be taught a lesson—that perches were to stand on and not to chew up. Now the inhabitants of Derby are renowned for their wisdom in spite of the old adage which says: "Derbyshire born, Derbyshire bred, strong in the arm but weak in the head." So, of course, no one with any sense would take such a death-dealing creature as a Parrot into the modest and aspidistra-decked parlours of Derby.

We passed the poor captive each day on the way to the office, and after a time my brother decided to risk the fate of an untimely death from "Psittacosis" and purchase it for 5*s*. or so. But justice will not be thwarted, as you will learn later on.

We had no Parrot-cage to spare, and as Quaker Parrakeets have a sinister reputation for pugnacity we did not care to put it with our other Parrakeets. So we gave it a free run of the bird-room, but it proved itself a real nuisance. With a beak like a pair of pliers, it soon cut through the wire netting into the other aviaries and caused much consternation amongst the inhabitants.

One day the door of the bird-room was left open and down the stairs and out of the door flew our little friend. I didn't bother very much for, knowing the neighbours, I knew that word would soon be brought if it were located in the vicinity of Old Normanton. A few hours afterwards there was the inevitable, "Have you lost a bird?" "Yes, I had." So "Polly" was brought back. I told the finders that they could keep him: but no, the dread menace of "Psittacosis" was still

in the air, so back he came to the bird-room. He escaped once again, but this time stayed in the orchard. We put a cage out containing a hen St. Thomas' Conure, whose mate had died. This brought our little friend back, and with a new love he wandered no more and was content to let the fence of the orchard be the boundary to his little world. He fell in love with the little Conure. To protect her from the vulgar prying gaze of the public he built her a bower ; he wove and wove, day in and day out, a wall of twigs on every side of her cage. His work was amazing. He wove with the skill of an accomplished basket-maker. From morning to night he flew back and forwards from the damson-trees from which he plucked the slender twigs, to the cage containing his lady love. Alas, just as this labour of love was nearly completed, a sinister black feline preyed upon his little mate ! After this the orchard fence no longer became his boundary, he reconnoitred the neighbourhood, and in time his shrill shrieks could be heard from a great distance. The neighbours accepted him ; he visited them in turn, and most of them fed him and petted him. Sometimes he ate their fruit, yet no one seemed to mind ; but he always knew his home. I still had the usual messages : " Have you lost a bird, mister ? " But in time the messages became fewer, for everyone got to know him.

I had only to whistle and with a distant answering shriek he would come with swift and graceful flight, quick as a flash of lightning. At the beginning of the cold weather he found his way back into the bird-room, where it was warm. He spent the autumn nights there, but he was always off again as soon as the door was opened in the morning. In the evening he would come up to the house and shriek and chatter until someone came out and went down to the bed-room to let him in, but just to make sure that they really knew the way he would fly down with them, going from tree to tree chattering all the time until the door was opened. But on the approach of winter he hardly went out at all. If the day was cold and dull a few circles round the orchard would suffice, but if the day was fine he would stay out for several hours.

On the approach of spring his stays out became longer and longer, and finally he ceased to roost in the bird-room altogether ; but he never quite left us.

Last summer my brother took pity on a poor decrepit Alexandrine Parrakeet, another long-suffering prisoner from the same shop that the Quaker Parrakeet came from. This bird was also placed in the orchard in a cage to accustom it to the surroundings before letting it free. The bird was a male, so that its reception was not quite as warm as that of the little St. Thomas' Conure ; still, in time the two birds became friends, and soon our little friend was at his old job of turning the cage into a wicker basket. This time his efforts were not appreciated, and the Alexandrine wandered off, never to be seen again.

Our little friend developed a great antipathy for the Starlings which used to visit the garden ; he chased them off the lawns, he used to wait for them going into their nests under the eaves of the house, in fact he would keep the parents away from their nests for hours. One saw these poor patient creatures on the various gables of the house or on the tops of the surroundings trees with beaks full of grubs or worms, waiting until such times as the Parrakeet grew hungry and had to go to his seed-tin, then there would be a concentrated dash on the fond parents' part to reach their offspring before their enemy came back. There was one particular Starling for which he cherished a great hatred ; he would remain by her nest for hours, and if she came anywhere near he would chase her miles away.

In time after the Starlings had left he selected a site for his nest ; this was a sheltered position under the eaves at an angle of the house. The foundations were built on a support which held the telephone wires. His energy was tireless ; all day he flew to and from a black poplar-tree, where he cut the branches for his nest. Sometimes the branches were so large that they almost weighed him down in his flight. The nest grew apace until it was quite a bulky structure. At last I secured a mate for him, a young bird which had been bred in the country, and we had visions of flocks of young Quaker Parrakeets around the house.

The day before the new arrival was due we missed him, but had no doubt that he would turn up again. At the week-end I was in London ; a message came to the house, " Had I lost a Parrot ? " Why, yes. They went for him—they found him lying in a hedge with one wing shattered. Some gentleman—we called him quite a different name at

home—had, remembering that truly British adage, "If it's alive, kill it," shot him.

What if the swift blue wings were closed for ever? No doubt justice had been done. The neighbourhood had been saved from the dread spectre of "Psittacosis". What did our feelings matter? After all Humanity comes first.

There is no moral to be drawn from this little story—at least, not now that "Psittacosis" is no longer fashionable. If it were there might have been one!

REVIEW

THE TRAIL THAT IS ALWAYS NEW

This is the attractive and most apposite title chosen by Mr. Willoughby Lowe for his reminiscences of forty years' bird-collecting, which has just been published by Messrs. Gurney and Jackson (price 16s.), a wonderful record of travel and observation of nature (particularly bird-life) in North America, the East, Tropical Africa, and elsewhere, which must interest everyone who can enjoy a well-written account of happenings in such places, and happenings which are not the common lot, though all in the day's work, of the man whose business brings him into such close touch with wild nature. The book is a regular O.D.T.A.A. (to borrow the title of a fairly recent and enthralling adventure story), but with this great difference: "the things" which fill the Trail are not the hair-raising adventures of the novel, but a series of word-pictures of bird and other wild life interspersed with descriptions of the ordinary daily life of a collector, though the events would hardly be ordinary to most of us, and above all, as Mr. Bannerman says in his preface, *accuracy* is stamped on every page, and the whole made interesting by one whose wide experience has made him a master of his subject and whose book now shows how competent he is to pass this experience on to others with interest.

One of Mr. Lowe's temporary retainers in West Africa put the case well, when he said: "Dis Lo, he savvy tings too much. He know all my heart tink, all dat all man tink, before me do it, he know it; and

de birds he know de inside all de same outside, he savvy where dey want go before dey go. Dey go. De gun ready, de shot catch 'em ebery time. Lo take 'em, he skin 'em—pull 'em dis way, dat way, and when he done finish dey look all de same as in de bush, 'cept dey no can fly no more. *Allamdalai!*"

When one has read the book one realizes that it is just as true that the author can make bush-life also almost come to life again.

E. H.

CORRESPONDENCE, NOTES, ETC.

A HYBRID MACAW IN NEW ZEALAND

Further to the details of the breeding of a hybrid Macaw, Red and Yellow ex Blue and Yellow, recorded by Mr. Anderson in the September number (page 220), I am forwarding you a photo of the two parent birds with the young one in the centre (see page 282).

The present size of the bird is 33 inches from head to tail.

I trust you will be able to publish this, as it is definite proof of the breeding.

G. Rowland Hutchinson,
Hon. Secretary, Avicultural Society of New Zealand.

Auckland,
2nd August, 1932.

EXTRAORDINARY BEHAVIOUR OF QUEEN ALEXANDRA'S PARRAKEETS

Last year I had the good fortune to get a pair of these beautiful Parrakeets. They were turned out into a large aviary in May, a few weeks after their arrival. They promptly went to nest, and reared four beautiful young birds. The parents were perfect in their attention to their young, and I did not have a moment's anxiety about their young being reared. I may mention that these birds came to me with a bad reputation, as they had always failed to rear their young in Australia. I thought the long sea voyage and thorough change had cured them



Hybrid Macaw, bred in New Zealand, with its parents on either side. (The same bird as that illustrated opposite page 220.)

of their bad habits, and as they had successfully reared four young last year expected equal success this year. In this I was mistaken, and their behaviour has been dreadful as will be seen from the following results. They went to nest on the 15th April, when the first egg was laid. In all four eggs were laid, the last one on the 21st. Four young were hatched out on the 5th May. One young was found dead in the nest, and the other three were found dead in the long grass in the aviary. As the weather was cold, I blamed it for these poor results. The birds went to nest again, laying three eggs between the 18th May and the 25th. Two young hatched out by the 8th June. One young was dead in the nest, showing signs of having been killed, and the hen Parrakeet was seen carrying the other young about in her beak—dead. This was most disappointing after my easy success of last year, and it looked as if the birds had gone back to their bad habit of not rearing their young.

I removed the birds into another aviary, where I gave them two nest-boxes—one in the flight and the other one inside the aviary shelter. They again went to nest, in the box inside the aviary shelter, and by the 21st June had laid three eggs. One young hatched out on the 9th July, which was killed on the 11th. The other two eggs were unfertile. All these failures looked as if these birds would only rear their young after another long sea voyage, and I was not prepared to send them on one now. I felt certain that the cock bird was blameless, and that the hen was the culprit. As the cock was devoted to the hen and had spoilt her thoroughly by feeding her incessantly when she was sitting, I thought I would punish her the next time she laid by moving the cock bird away from the aviary and letting her fend for herself. She went to nest again, and laid four eggs by the 25th July. I removed the cock bird after the hen had been sitting for about a week. This made the hen come off the nest pretty often to feed herself, as her husband was no longer there to spoil her. Two of the eggs were unfertile, but one young was hatched out on the 12th August and the other on the 14th. These two young were perfectly fed by the hen, and thoroughly reared: no mother could have been more attentive to her young. I wonder if the same treatment will be successful next year, or if I shall have to try and think out some other plan. It will be interesting for members to know that the two hens I bred last year

nested this year, when only about ten months old, and some of the eggs were fertile, although none were hatched. I hope next year these will rear their young successfully.

A. Ezra.

BLUEBIRDS

Re N. Nicholson's article on Bluebirds. It is not generally known that to transfer eggs from one bird's nest to another, the eggs must be same date as those in the nest to which they are removed. Say a wild Robin completing its clutch on 5th June, the eggs placed in nest on 5th June must be clear, otherwise the foster-parents will not accept them. This, I believe, is the solution of the failure.

Arthur Lewis.

FURTHER NOTES ON PHEASANTS

On opening the Magazine for September I found it was a number after my own heart, as it contained not only an article on Pheasants, but also two other articles on Game Birds and Waterfowl, so I shall not be able to complain that my particular fancies are being neglected for some time to come. I never suspected, however, that the quite inoffensive article I wrote would be the means of inducing my friend Paul Lambert to write an article introducing paragraphs more suitable for *Punch* than an avicultural magazine.

Regarding Mr. Lambert's remarks. In the first place, the order in which I gave the Pheasants was the average of voting of about a dozen naturalists, and not my personal vote, although I remarked that it was a very sensible selection, especially for those who were seeing many kinds for the first time. Mr. Lambert knows that my selection is the pure Amherst cock first, and the rest among the also ran. I really could not decide how to place the Golden, Reeves, Satyr, and Tragopan, but this week I had visitors who thought the Reeves beat them all. Of course, if you want to be a high-brow, you can say you prefer a Silver or Ring Neck, or any other that is not very brilliantly coloured. The ugly walk and carriage of the Impeyan puts it out of the first six in

my opinion. The Amherst cock is a combination of colour, shape, and style that is not quite equalled in any other Pheasant.

Now, with regard to my suggestion that Tragopans require more exercise, anyone would think from reading Mr. Lambert's article that we know everything about Pheasants. The fact is we know very little. Poultry are closely related to Pheasants, and we know that when they are kept in small enclosures it is necessary to make them work by scratching for their food, in order to get them to lay well. Birds like Amhersts, Golden, Swinhoe, Reeves exercise themselves, but Tragopans, from what I have seen, lead a rather lazy life. I have also read that Tragopans often die suddenly as the result of being too fat, so that anything that will cause them to take more exercise would most likely improve their fertility. There is no doubt that crooked toes in Swinhoes are the result of weakly chicks that come from inbred stock. It would be most interesting to know when the last Swinhoes were imported, and also how many were formerly imported direct from Formosa.

There is still plenty of scope to investigate the habits and food of the different Pheasants. Mr. Horne's book mentions that hempseed is harmful to Reeves. Has anyone else noticed this ? I consider hempseed to be one of the very best foods for Pheasants if given in moderation.

I wish we could have some more experiences on rearing rare Pheasants. We have some members in Scotland who could perhaps enlighten us on rearing Tragopans, and how to get Reeves to lay. We have also members in U.S.A., such as Mr. Denley and Mr. Corson, who have wide experience in rearing rare Pheasants.

In digesting articles written on experiences in other countries, one must always allow for the difference in climate. I am pleased to read of the success of Mr. J. Carlton Hunting in rearing Bornean Firebacks. Anything like this is of intense interest to Pheasant breeders, and adds greatly to our knowledge. It is certain that in the near future many species of Pheasants will become extinct in the wild state, and now is the time to experiment and see how these birds can be saved for posterity by being reared in captivity.

Regarding the Melanistic. From letters appearing in the various

journals, all kinds of virtues and vices are attributed to this bird. Now, why on earth should any bird bred from ordinary Ring-necks have different habits to its parents? According to this a Black Leghorn should have different habits from a White Leghorn. All birds of the same breed differ slightly individually, and this is also the case with the Melanistic. To claim it is hardier and a better flyer and stayer than its parents is pure imagination, or else a case of the wish being father to the thought.

G. Beever.

NORFOLK ISLAND PARRAKEETS

I thought it might be of some little interest to members to know that I have just received a small consignment of rare birds, including eight of the very rare Norfolk Island Parrakeets, which are reputed to be nearly extinct. Judging from the number which I have received in this last twelve months, thirteen in all, this cannot be so. I have also received a pair of the wonderful Fijian Red-shining Parrakeets and seven Norfolk Island Green-wing Doves, a species not imported before. The Norfolk Island Parrakeets arrived in almost show condition, and very tame, which speaks well for the care taken of them during the many thousands of miles they travelled, for they came from Norfolk Island to Auckland and then via Cape Horn to London.

I have been trying hard to breed from two Norfolk Island Parrakeets all summer, but found that the supposed hen was a young cock. The only hen I received in the first consignment I let a fellow member have, and I heard that this bird is breeding. Perhaps we shall hear something later from the very able pen of the owner.

I am shortly leaving for New Zealand, where I hope to reside in some of the more remote parts, and study the unique avifauna of those islands.

I also hope to visit some of the more remote islands, such as Antipodes Island, Chatham Island, and possibly Norfolk Island.

I was hoping to be able to let members either have on loan or at the cost of importation several pairs of the Norfolk Island Parrakeets to try and breed from, but with the tightening of the foolish restrictions

on the importation of Parrots my hands are completely tied. I cannot even remove them from my aviaries.

By all reports a few more years will see the extinction of these very interesting and intelligent Parrakeets, so, needless to say, I shall use every endeavour to induce them to perpetuate their kind.

SYDNEY PORTER.

BIRD LICE

The letter of Mr. G. H. Gurney in regard to the bird lice is very interesting, in so much that I have had several similar experiences where birds have died owing to these wretched parasites.

The first bird I lost was a cock Swainson's Long-tailed Jay: the bird gradually got weaker and weaker, and in spite of everything possible being done it died. Immediately after death the body was covered with these tiny lice. They evidently felt the body becoming colder, so started on a general exodus to find a fresh victim. The second bird I lost was a Verreaux Glossy Starling, and when handled the lice swarmed over my hands and arms evidently thinking they had found a fresh host.

Now if any of my birds appear the slightest unwell I closely examine them, looking at the base of the wing- and tail-feathers for I find that the lice are found in the greatest quantity under the underwing- and tail-coverts.

A sure cure is to immerse the bird in a bath of a strong solution of quassia, using ½ lb. of the chips to 2 quarts of water; the birds' beak should, of course, be held out of the water. This kills the lice instantly, and they float in a brown scum on the top of the water.

As the birds which are usually infested with these lice are in a weak condition, it is necessary to keep them warm until quite dry.

I have only found these parasites on "soft-bills". Speaking of another subject, I wonder if any reader would care to give a good home to a very tame Abyssinian Coucal, which is slightly lame.

SYDNEY PORTER.

A BLUE MASKED LOVEBIRD IN CALIFORNIA

We have had the good luck of raising a Blue-masked Lovebird from a pair of our Masks. The bird is now about four months old, and identical in colour with the picture of your original Blue-mask, published in the AVICULTURAL MAGAZINE, 1928. The bird is being shown for the first time to-day at the meeting of the Avicultural Society of America in San Diego, at Mr. I. D. Putnam's home. I have not determined sex of the bird, but believe it to be a male. I understand you have been successful in breeding and raising a few Blues from your original bird. Would like to know what method of mating you used with your bird. Any information will be greatly appreciated.

L. H. CROSS.

1865 EL MOLINO AVENUE,
SAN MARINO, CALIF., U.S.A.

[The Blue bird referred to above should be given a normally coloured mate. The young produced will all be of normal appearance, but these, when mated *inter se*, will produce approximately one Blue in every four. The remainder will be normally coloured, but some (50 per cent of the whole) will be heterozygotes (Blue-bred like their parents), and the remaining 25 per cent of the whole will be homozygotes, or pure normal.—ED.]

SUCCESSFUL BREEDING OF THE CRIMSON FINCH

Mr. Andrew R. Hynd, who owns a small but very choice collection of foreign birds at Broughty Ferry, Angus, has this year successfully reared a brood of five Crimson Finches (*Neochmia phæton*). He writes: "I have been informed that the young cock birds can be distinguished by having a few red features on the breast. None of mine have such and, with the exception of one or two being highly coloured on tail and wings, they are all exactly alike. Am I to take it that all are hens? Or is it not impossible to say until they moult?" Mr. Hynd need not feel anxious as the young of the Crimson Finch are all coloured like the adult female until the first moult.

SLUGS AND YOUNG BIRDS

Will slugs, the large ones, eat young birds alive ? I firmly believe they can and do. Two young Pekin Robins, on leaving their nest, went to sleep on the cement floor under the shelter, and I found them badly eaten and slug slime all over them, although they were perfectly fit the night before at 9.30 p.m., fast asleep, and were fed well. Now, yesterday at 5.30 a.m. I saw another one half-way up a bush with a huge grey slug eating the little chap up, just dead. I have noticed the same thing happen to the small Gold-breasts, etc., when they sleep in bushes near the ground. Quite well at night, and in the morning dead at foot of bush and sometimes carried a yard away with the slug on it, and showing the trail as well from the bush. The birds seem mostly to be tackled about the region of the heart. At night the birds appear to grip very firmly (since I could not move a baby Shama from his outside perch until he woke up and it took a few seconds before he released his clutch of the twig), and also sheer fright would probably make them grip harder in the dark night. I feel positive now that those little Peter's Fire-finches died the same way, as I have had no trouble from all the birds in that division since ; no kills.

I have had visits from the vile Sparrow-hawks and Kites.[1] I get "fed up" sometimes with their kills and the shocks they cause the birds.

K. DRAKE.

CARRICK,
MYLOR,
FALMOUTH, CORNWALL.

A PROPOSED STOCK BOOK FOR RARE SPECIES

Why is there no form of avicultural stock-book to control the breeding of very rare Parrakeets ? I am told that Bourke's, Turquoisines, and other birds which are being bred in this country now are either extinct or so rare in their native country that no more are likely to be imported. Surely there is a great danger of this limited stock becoming inbred, sterile, and finally extinct. I am a complete

[1] There are no Kites in Cornwall.—ED.

tyro myself, but I would venture to suggest that it is the duty of the Avicultural Society to institute some sort of stock book, so that any breeder may discover if his birds are really unrelated or not. This need not be an expensive innovation. Only one or two copies need be kept, and from these suitable pairing, etc., could be arranged by some central authority appointed by the Council. A satisfactory system of ringing and registration could easily be evolved by those aviculturists (and there must be some) who are skilled in such matters. Only co-operation among the eminent aviculturists who breed these rare birds would be needed. Every single specimen of those species alive in this country would have to be ringed and registered. Zoos and exhibition collections could co-operate by using for purely exhibition purposes only those birds which were sterile or unfit for breeding. Persons who co-operated in the scheme would have the satisfaction of knowing that they were doing a really useful and valuable work. I feel sure that some such scheme as I have outlined above is the only method by which stocks of rare and extinct birds may be preserved for the future.

A. Morrison.

GAPES AND ITS TREATMENT

Mr. W. H. Workman in the April number of the Magazine gave us advice about curing gapes in birds. I am most grateful to him, as I have successfully treated six Starlings, among them Rothschild's, Crowned, and Spreo. In each case the cure has been complete, and I am sure most aviculturists will be more than grateful to Mr. Workman. For several years I have had this trouble with my Starlings. They first started by sneezing and coughing now and again, and then gradually got worse, and died very often after two to three months—no matter what I did to them they never recovered. I tried giving them all sorts of different stuffs in their food and water, and I have even painted their throats with iodine, but all to no purpose. I write this to help others who may have the same trouble with their starlings. I may mention that so far only Starlings have had this complaint—" Kuride " can be obtained from the Kur-os Manufacturing Co., Church Street, Ballymena, Ireland.

A. Ezra.

GAPEWORMS IN STARLINGS

People who keep tropical Starlings are sometimes troubled by a mysterious and fatal disease which attacks these birds. They start sneezing, and although they feed well and live a long time they usually die at the finish. I have for some time suspected gapes to be the cause, although friends with more experience of Starlings than I have not agreed with the diagnosis, it being often difficult to see how the birds could have been infected. The other day a correspondent wrote to me for advice about a Royal Starling which exhibited the characteristic symptoms. I urged a *post mortem* if the bird succumbed, as it did, and sure enough it proved to be heavily infected with gapeworms.

TAVISTOCK.

[The common Starling is also frequently infected with gapeworms (*Syngamus*), and is a common source of infection in other birds such as game birds and poultry. The remedy, first recommended by Mr. Workman, and found so successful by Mr. Ezra, should be tried by all who suspect gapes in young or adult captive birds.—ED.]

THE ZOO "LIST OF ANIMALS": AN ERROR *RE* THE COMBASOU

It should be of interest (to aviculturists, at any rate) to draw attention to a slip in the Zoo List of Birds (1929).[1] This is the omission of the Combasous (*Hypochera*), somewhere about p. 49, and the inclusion instead of *Malimbus nitens* on p. 74.

Combasous are always with us; the common one, *chalybeata* (late *nitens*) can nearly always be seen in the Bird House small seed-eaters' aviary; and the Zoo have also had the South African and Eastern races, *ultramarina* and *amauorpteryx*, and perhaps others. *Malimbus*, on the other hand, I cannot believe they have had, for it is a forest-haunting, insect-eating Weaver from Cameroon and other parts of

[1] *List of the Vertebrated Animals exhibited in the Gardens of the Zoological Society of London 1828–1927*, Vol. II: *Birds*, by G. Carmichael Low, M.A., M.D., F.R.C.P., F.Z.S.

Equatorial West Africa, which I feel sure has never been imported and probably never kept in captivity even in its own country, except perhaps for a day or so by Mr. Bates' native catchers.

This Combasou-*Malimbus* confusion can be almost certainly attributed to the name "*nitens*", and the slip will possibly intrigue some future inquirer and furnish proof that the learned compiler of this most useful list was no bird-fancier ; or, as I suppose I ought to say here, no aviculturist.

E. H.

MONAULS AND TRAGOPANS

I read Mr. G. Beever's article on "Pheasants and other Birds" in your July issue with a great interest. I have had Monaul and Tragopan Pheasants in the Zoological section here for the last seven years. The maximum temperature in the shade here is about 112 in the hot weather, but it can go higher ; this year it reached 118. The Monauls and Tragopans arrive here for sale, having been brought from Lucknow or Calcutta in small wickerwork basket cages which are so small that the birds' heads and tails get badly damaged by rubbing against the baskets. They usually arrive here at the beginning of the hot weather, and although I know that these high elevation Pheasants do not live well in this climate, I purchased them because they are attractive exhibits and I know that on the journey from Jaipur to the next place where they could be sold they would probably die. They are only brought away from Calcutta when the dealers think they are likely to die because of the heat. These thoroughly unsound birds live with me from six months to two years. My aviary encloses two very large trees, and I notice that both Monauls and Tragopans remain in the trees most of their time. I had trouble with the Monauls' beaks growing too long to enable them to pick up their food. I got over this by burying their food daily under about 3 inches of fine shingle and sand mixed. I have never seen any indication of these Pheasants wishing to go to nest, although in the same cage I have had eggs from

Kaleege Pheasants. I had a cross between Kaleeges and Reeves. They are very smart and attractive birds.

I hope there may be something in this letter which may be of interest to the members.

B. J. Ryan.

Public Works Department,
Jaipur State, Rajputana.
12th August, 1932.

STRANGE BIRD FRIENDSHIPS

In my animal enclosure I have some very interesting cases of friendships among my Ducks and Geese, and I thought it would interest members to read of them. In a pond which is occupied by a good many species of Ducks and a pair of Black-necked Swans I have a male Chilœ Wigeon, who has deserted his own mate and is paired to a Fulvous Tree Duck. An Orinoco gander has made friends with an Ashy-headed Goose. A Chukor Partridge has a common Guinea-fowl for his mate. The most extraordinary of all is the friendship of an Ashy-headed gander to a White Peahen. All these birds are inseparable and too amusing to watch.

A. Ezra.

EARLY IMPORTATIONS OF PARADISE BIRD AND SWALLOW FRUIT-EATER

The date of the first live arrival of a rare bird is always of interest and that of the Birds of Paradise particularly so, as for most the dates are comparatively recent, and in many cases can be fixed almost to a day. The accepted date of the first importation of any member of the family to England (if not to Europe) is 1862, when Dr. Wallace brought two *Paradisea minor* to the Zoo (see *Aviculture*, vol. i, p. 22). A record of a much earlier arrival, however, can be found in Latham's *General History of Birds*, 1821–4, where about twenty species of Paradise Birds are described. Here, under the Greater Bird of Paradise (*P. apoda*), there is a note (vol. iii, p. 183) contradicting the statement in the text that "it is said that they cannot be kept alive by art",

which reads : " The late Mr. Pennant furnished us with an instance to the contrary from Sir Joseph Banks ; one of them having been brought alive to England.—*Ind. Zool.*, 4*to*, *note x*."

The authorities are unimpeachable, and unless they and Latham are grievously mistaken, here is a record of a live arrival before 1821. It would be of interest to look up the reference to the Indian Zoology for further details.

Another rare first arrival also to be found in Latham is that of the Swallow Fruit-eater, *Tersa tersa* (Linn.),[1] which must be one of the rarest of imported Tanagers. The only example I have seen was the bird in the marvellous collection of Ecuador birds brought home for Mr. Brooks by Mr. Goodfellow during the War and housed for a few days at the Zoo on their way north to Hoddam. It was not then " new to the collection ", but I think that the Zoo had only had it once before, and that it has never been seen over here since. Latham, however, gives a wonderfully good coloured plate of the species under the name Lindo Chatterer, and says that he saw one alive at Mr. Bailey's, the Haymarket bird-dealer of that time.

E. H.

THE CRESTED DOVE AT LARGE

In *The Field* of 8th October the Duchess of Bedford writes : " The Australian Crested Dove was imported to Woburn (Beds) more than twenty years ago. They bred in the open and increased very much for a time, then almost died out ; but in the last few years have again greatly increased."

BIRDS FROM THE AMAZON

I should like to inform members that if they require birds from the Amazon district I can give them the name of a very keen aviculturist there who caught me a lot for a mere song last February while I was out there, but of course the journey is very treacherous indeed, although

[1] Late *Procnias viridis* or *cærulea*.

I did manage to reach home safely with some of them, though not all. I have now two lovely Tanagers I bought from this man—both are the size of Blackbirds—one the colour of Eton blue and the other a darkish shade of green. He caught me lots more but these are the only survivors of the Tanagers he got me. He is absolutely honest, and an absolute topper to deal with, and can speak English. I gave him an order for £5 worth of birds, and the market value of them in this country is prohibitive, but if you can get them home, in the spring, and have a nice warm sheltered aviary, it is well worth having a shot at it. I should like to add that if any of your members are out in Para, then they will see how to keep birds in an aviary in ideal conditions, and the birds are unique. I should like also to add this, that the Booth Line took infinite pains to look after these birds for me, although I became very downhearted when they began to die for some unforeseen reason although, as I have said before, I did manage to bring back a certain number, which have all done well in my aviary this year.

EVELYN H. BARCLAY.

SEXING YOUNG KING PARRAKEETS

I notice that young King Parrakeets can be sexed quite easily within a few weeks of leaving the nest as the bills of the females quickly darken while those of the males are of a yellowish colour. Young hens are also more slender than their brothers, with smaller heads, and they have much less red on the abdomen and lower breast.

Does anyone know how to sex immature Crimson-wings ? I must confess they beat me entirely ! TAVISTOCK.

"SENEGAL FINCHES"

The following quotation from Labat's *Nouvelle Relation de l'Afrique occidentale* is of interest for its record of an early importation of "Senegals".

Here in an account of Sieur Brue's expedition up the Senegal River (then known as the Niger) the author calls to account as "grievously mistaken" a Monsieur de la Courbe because he wrote in his Journal

that the little blue, red, and black birds so plentiful along the river banks could not be kept alive for more than four days in captivity. "It is painfully obvious," he continues, "that he must have been relying entirely on hearsay, for it is well known that M. Brue brought to Paris and had the honour of presenting to the King in September, 1726, some of each of these three *species*, the survivors of which were still alive in M. Daguesseau's charge in 1726. The banks of the river swarm with these little birds, which in beak and head somewhat resemble the Linnet, but the colour in each *species* is respectively red, blue, or black, very bright and clear, so that the plumage looks almost as if polished. The native children catch them with inverted bowls or calabashes under which a few grains of millet are scattered as bait and to which a supporting stick and pull-string is attached, so that it can be dropped on any birds venturing below. The loss of liberty does not upset these little things in the least—they seem, like the negroes, to be born for slavery, and they feed readily in a cage, coming up to whoever supplies their needs and repaying the attention with a little song or twitter, feeble but sweet, which is all one can expect from birds no bigger than a nut."

These three birds are the Cordon Bleu, Firefinch, and Combasou, still the commonest cage-birds from West Africa. Presumably the author never saw hens of either the Combasou or Firefinch, as probably then as now the catchers only troubled to catch (or at any rate keep) the bright-coloured individuals. E. HOPKINSON.

OFFICERS FOR THE YEAR 1933

The Council propose that Capt. H. S. Stokes and Mr. A. Sutcliffe retire from the Council by seniority, and that the Hon. Mrs. Algernon Bourke and Capt. L. R. Waud be elected.

Also that Mr. J. B. Housden be elected as Auditor and Mr. A. Sutcliffe as Scrutineer for the coming year.



(Lower figures) Bicheno or Double-banded Finches.
Stizoptera bichenovi.

(Upper figures) Black-rumped Bicheno or Ringed Finches.
Stizoptera bichenovi annulosa.

THE

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BICHENO AND RINGED FINCHES (*STIZOPTERA BICHENOVI* AND *S. B. ANNULOSA*)

These lovely little Grass Finches, which seem to increase in beauty the closer one views them, are denizens of the warmer parts of Australia, the White-rumped form, *S. bichenovi*, occurring in the north-eastern and the Black-jumped, *S. b. annulosa*, in the north-western portions of that continent; and it is curious that these two races differ in precisely the same way as do the two races of the Parson Finch figured in our last number. The two forms have been imported from time to time, but they have to be regarded as frail mites which need careful protection from the inhospitable climate of this country.

In the wild state Bichenos occur in pairs or flocks, feeding upon the seeds of grasses. The nest is a bottle-shaped structure, composed of grass and lined with feathers or vegetable down and is placed in a low bush or in long grass.

In captivity both species have bred in this country though only on a few occasions. An interesting account of the breeding of the Ringed Finch by Mrs. Howard Williams was published in this Magazine in September, 1902, and as a good many of our members do not possess the early volumes I may be permitted to quote freely from this. A pair of these birds, obtained in January, were placed in an aviary containing Gouldians, Long-tailed Grass Finches, Double-banded, Zebra Waxbills, Canaries, and Avadavats, the aviary itself being in

a conservatory. They took their share of the various foods, Indian spray and white millet, ants' eggs, preserved egg, canary seed and, most important, chickweed, which their owner grew specially for her birds in a frame during the winter and which she found less coarse and rank than that grown in the open. Flowering grass was supplied when available, also soaked canary and millet.

" We did not pay any very special attention to them for some time, being much interested in some Long-tails and Gouldians which were all nesting, but at last I noticed that a hen Ringed Finch was sitting in a very old rush basket with a hole in the back, which was hanging on the wire front of the aviary, about the level of my eye. I could plainly see the hen sitting through this hole, but foreign birds being shy we scarcely looked at her at all lest she should desert."

On 29th May the young left the nest. " There were three of them, one rather larger than the others. In appearance they were very much like their parents but much lighter, especially the wings and tail, and the dark shading at the top of the beak was hardly noticeable. In one important point, however, they were entirely different. Seen full face they were absolutely ringless, and their breasts were pure white. In profile, they showed the beginning of the upper ring which encircled the face. In a few days there was a faint indication of the lower ring in the two smaller ones, but the eldest kept his pure white breast some time longer. They were very small, but scrambled about vigorously, and managed to get back to their nest whenever they were tired and always at night.

" It is interesting to notice the difference between these and the ordinary Bicheno's Finch, which has bred with us several times. We think they leave the nest about the same time, at three weeks old, but whereas the Ringed Finch emerges ringless, his relative has both rings quite as clearly marked on leaving the nest as the Ringed Finches have now at nine weeks old."

Whether the difference noted by Mrs. Williams would be found to be constant could only be proved by further breeding experiments. It would be strange if the two were to differ thus, seeing that they are nothing more than local races of the same species.

D. S-S.

COMMON OR RED-HEADED, AND TRI-COLOURED OR BLUE-HEADED PARROT FINCHES (*ERYTHRURA PSITTACEA* AND *E. TRICHROA*)

By P. B. Webb

Perhaps some members may find parts of the following of interest should they ever be fortunate enough to possess a pair of Parrot Finches of either of the above kinds.

Before I go further I think something should be said about the temperament of both species. This seems necessary as, about two years ago, I recommended my friend Mr. P. W. Teague (of Gouldian fame) to try a pair of these birds. Shortly after he managed to get a true pair of Blue-headed which he successfully bred. I was surprised a little time ago to see his advertisement in our Magazine for both the old pair and their young. The following day I had a letter from him saying that he had lost interest in them as they were so wild and that he feared it was their nature because, try as he would, he could not gain the confidence of either the old pair or the young.

Well, it is perfectly true that both these kinds of Parrot Finches are very energetic indeed, and are inclined to be shy—particularly the Blue-headed—but they are not, to my mind, wild—just " fidgety Phils ". Compared with the stolid Gouldian, or even the Pintail Nonpareil (which is a near relation), they are as the active fox terrier to the placid bulldog. Possibly Mr. Teague has made this mistake, but he has had a far greater experience of birds than I have and I think it more likely that he has been unlucky in getting a " strain " with wild and nervous dispositions.

The word " strain " may seem a curious one to use here, as a species of bird or beast usually has the same temperament stamped hard and fast in each individual, but this is only so provided they have not been interfered with by mankind.

So far as I can find out the Blue-head is a bird which is practically never imported, and yet it is more common than the Red-headed, which is imported in small numbers very occasionally. The only possible reason for this is that it is more frequently bred in captivity.

Therefore, it is not unreasonable to say that there are different " strains " some of which are wild and some confiding. This is, I think, proved by Mr. Teague's experience and mine, which is that I have had Blue-heads which would eat mealworms from my fingers. I spent no time in achieving this; it was discovered by accident and was then cultivated. I hope I have not dwelt too long on this point, but it may be the means of encouraging some who have had the same experience as Mr. Teague, to have another try which may lead to much more successful results.

There is not so much to say about the Red-headed birds. I have never heard anyone make any complaint about their characters, but to those who are fond of a bird which sits still and is therefore easily studied closely, I say " Beware ! " The bird which at some time has gained for itself (I cannot think why) the name of " Common " Parrot Finch, is not the one for them. It is *the* most sprightly, vivacious little bundle of feathers that it is possible to imagine. It is never still for a single minute, and as twilight falls it is the last to settle down in the whole aviary. Though I do not often see the sun rise myself, I feel sure that this Parrot Finch invariably does. There is, however, one great drawback which confronts those who wish to breed them, and that is the great scarcity of hens. The reason for this must be that the hens escape the catchers for some reason ; either they are more wary or the birds are caught during the breeding season when hens are sitting—probably the latter. It is not that the hens are more delicate or are very subject to egg-binding, which is the curse of Grass Finches in general. My experience has been that the cocks are not so tough as the hens, and I have never yet had a hen egg-bound. I have usually managed to get my birds to nest in their shed, which helps, and usually Grass Finches insist on nesting in a bush out in the flight where it is cooler.

I think that on the whole most people will agree with me that the Red-head is the better bird of the two, though both are well worth having and are easy to keep, but neither should be allowed out during the winter months—in the north of Ireland at any rate.

When I take a fancy to a bird I have not kept before, the first thing I try to find out is, " How have these birds been successfully fed in

captivity in the past ? " and I look through my books and back numbers of the AVICULTURAL MAGAZINE in the hope of getting this information. I have found that people who write books and articles very often seem to forget that really what one wants to know most, and certainly first, is what *they* have found the best way of feeding the particular bird. I, therefore, not wishing to make this mistake, will tell you—not necessarily the best way to feed the Parrot Finches—but the way I have found best up to the present. I should say, before I start, I am still trying new ideas in feeding and that now and again something is altered, but that which follows is as far as I have reached. All the remarks I shall make in this article apply equally to either species unless otherwise stated.

Assuming that we have just received some newly imported specimens and that they are somewhat frail, and though healthy enough are—as is usual—very thin. At this time it will be found best to cage each one in a cage to itself in a warm room. It is important that the room should be of course at as even a temperature as possible, say about 60° F. It will probably be found that they will refuse to eat white millet. This used to worry me a good bit at first, as it cut down the variety of the menu one could offer. However, if they don't eat it, always remember that it has not a very high feeding value—at least, so I understand from a book of tables which I possess. They will, however, eat plenty of canary seed and this should always be before them unmixed with any other seeds. In another pot give canary seed to which has been added one teaspoonful to the pint of cod-liver oil. They will usually eat this without any trouble ; if they do not, the ordinary canary seed may be removed every fourth or fifth day and it will not be long before they learn that it is not so bad after all and will eat it with or without oil equally well.

Mealworms are greatly appreciated. I have often seen in print that one must be careful with these insects. We are told that they are fattening and that, useful as they are, must not be supplied to provide a stimulating food. Well, that is probably correct, but the point as I see it is this—the birds like them better than anything you can give them and for that reason alone I think they must be beneficial, even if you have to counteract their fattening effect.

I see in my tables (which I hope are correct) that millet and oats are among the least fattening of seeds. It therefore seems that millet, or even oats, is what is wanted to balance things up. Well, oats are on the large side for Red-heads, though if they are not old and dry they will eat a little. As they don't like white millet this looks like being a problem. We have one other thing to fall back on, though it is rather an expensive luxury for most birds—except as a tit-bit. A Parrot Finch is not a glutton and you will find from their point of view, after mealworms, comes sprays of millet. This is really very obliging of them. Is it not rather strange, however, in view of the fact that if you offer ordinary Indian millet—which is, I believe, the same thing removed from the ear—they will probably eat none of it at all ? It may be that sprays are gathered before they are ripe and the other is not. Or, perhaps, it is the novelty of hunting for their own food in a more natural way. I cannot say. At all events it will be found that about three to four mealworms per bird per day, and sprays ad lib., give satisfactory results. It is best to soak the sprays for three or four days and rinse well before using.

This opens up another avenue of thought. If it were possible to procure such seeds as canary, white, and other millets in the ear, would our birds benefit by it ? I am thinking more from a psychological effect on the bird's mind than from the feeding value point of view, as this seems to be all there is to it.

Now I am not in favour of handling birds much. It is obvious that they don't like it and there is always the danger of hurting them. At the end of, say, the third week, however, it would be well to have a look at their breast bones individually, to make sure that they are not getting too fat. If so, cut out the cod-liver oil and reduce the mealworms by half. In any case they will probably be better without the former for a few weeks, as it can be overdone, and sometimes a bird will eat too much of it, upsetting its inside. The symptoms are usually that they get sluggish and lazy, meaning by that, they become more like other birds with regard to activity. This must on no account be allowed.

There are two other things which should be given, but in each case sparingly—about a teaspoonful on alternate days to each pair

(*a*) soaked seeds, and (*b*) a good insectile mixture. For soaked seeds canary and white and Indian millet may be used—they should be just sprouting. Boiling the seed is probably *worse* than useless. The birds usually eat these seeds right off, but a little honey on top may help matters, especially if a little of the latter is smeared on a mealworm which is put on top of the seed the first time or so. For insectile mixture I prefer the "ready to use" kinds that require no water—there are several on the market; Mr. E. B. Tanner, a keeper in the London Zoo, prepares at his home the one used here. Probably you will find they leave the ants' eggs, but they are very fond of the rest of it, which looks like sponge-cake damped somehow. Some other birds will eat the ants' eggs left over, a Pekin Robin or a Shama for instance, but there won't be much anyhow.

As time goes on and the birds improve in condition and feather, they may be put together in a flight cage which should be as large as possible. It is not usual for Parrot Finches caged together to give trouble by picking each other's feathers or fighting. Unfortunately, pairs of these birds do not display affection towards each other as most birds do, so this will not be a means of finding out the sexes. The sexing of these birds is, incidentally, about the most difficult job the owner will have—but more about this later on.

About the middle of May I usually turn the birds out—this depends more on the weather than anything else. There is no use putting them out too soon in their summer quarters because, though our summer is not a long one, there is plenty of time for two families of youngsters to be reared. Even if the spring is an early one and the summer lasts well into September it would not be advisable to let them have a third round. There are people who think differently and say that three families are all right, but it is better in the long run not to be greedy.

As soon as the birds are turned out place the following foods before them daily: plain canary seed; cod-liver oil-soaked canary seed (one teaspoonful to the pint as usual); millet sprays; insectile mixture, soaked seeds, and mealworms, the last three named in the quantities before mentioned. This may be continued until the nest has been built, the eggs laid, and the hen starts sitting. It is then well to cut out the insectile mixture and reduce the mealworms to about half.

The day the young birds are due to arrive these should be again supplied as usual, then increased gradually until the young birds are each getting the same share as their parents when about nineteen days old. They leave the nest at the age of eighteen to twenty days.

It is as well to look into the nest about the third day to see how many young birds there are (if any). Parrot Finches do not mind their nests being looked at provided it is done by the right person, in the right way, and of course not too often. It is, however, safer to do it when the parents are in the flight—" What the eye does not see, etc." I once made the mistake of closing the entrance to the flight while I had a peep. It was not till about two hours later that I remembered to open it, and of course the result of the mistake was fatal. Here is a betfer idea : instead of closing the door put your handkerchief in the hole. If you forget to remove it you will miss your handkerchief in a very short time—at any rate I do !

Young Parrot Finches soon learn to eat Millet Sprays, and it will be found that a pair of old birds and four youngsters will get through almost a whole spray in a day ; certainly four sprays will not last more than five days.

It should not be found necessary to remove the young Parrot Finches from their parents, at least until their younger brothers and sisters are hatched. Even then I don't think it would matter much, as they don't give the least trouble, neither do the old birds do them any injury as some birds—such as Cuba Finches—would.

They are about the most peaceable family that one could imagine. Several families will live together in perfect harmony. In fact I have had a pair and three odd cocks in one aviary who have had two families without the least bit of squabbling. The three odd cocks did not worry the paired hen, but neither (so far as I know) did they give any help with the rearing of the family. These birds were Red-heads. A similar success, but not so marked, has been obtained with a pair of Blue-heads and two odd cocks. In this case two young were hatched and reared in the first nest, but the hen deserted the second nest the day before her four fertile eggs were due to hatch. This was due, however, to the birds being frightened too late in the evening for the hen to find her way back to the nest.

There is one thing which must be very carefully avoided. Do not have any other birds in the aviary other than Parrot Finches, the reason being that they will let even Waxbills rob their nests of material or turn them out altogether. They will spend the year building nests for other birds to live in without laying a single egg. This applies to the Blue-heads, and the Red is no better when it comes to fighting for house and home. It would not even be advisable to have Red-heads in the same aviary as Blue-heads for this reason.

Parrot Finches are hardy if kept indoors in winter and the temperature not allowed to fall below about 45° to 50° F. But (yes, there is a catch in it, though one which has a remedy) there is a curious ailment with which Red-heads are affected. I lost two with a wasting disease before saving the third and the fourth. If one of your birds gets this trouble you will find him spending most of his time at the feeder. It will probably still be fairly active, but his wings will usually not be carried as high as is natural. They will be held with the flight feather lower than the tail root, as with the British Robin, and there will be a thick appearance, which gradually gets worse. It will also be noticed that the bird eats little though he is continually working seeds in his beak, shelling some and discarding most. As the disease takes its course the bird will be seen continually stretching his neck and yawning—just like a chicken with gapes. The first bird that took it with me I thought it had some form of gapes, but when the bird eventually died there was nothing of the kind to be found. The only apparent cause of death was that the bird had no food in it and was in a very emaciated condition. The same was the report on No. 2. These two birds had been given all the remedies for the usual bird disorders without success. When the third bird went the same way I therefore thought of trying something in the line of a building-up tonic, so deciding to start with cod-liver oil, I mixed a quantity of canary seed with it in the proportion of four teaspoonfuls to a pint. You will say, probably, " That should finish it off fairly soon," but remember that the birds were found when opened to have no food in them ; it was therefore probable that in the earlier stages they only ate very little. I was counting on the oil they *licked off* the seeds more than that which was actually absorbed by it.

The second day of this treatment there was a very marked improvement in the bird, and there was little or no gaping. The cod-liver oil seed which had not been used was then mixed with equal parts of ordinary canary seed, and at the end of a week he was well on the road to complete recovery.

The fourth bird was cured with equal success. I have not discovered what this disease is, or what it is caused by, but until we find this out we have a simple cure. Prevention is better than cure, however, so there is room for research in this direction. If anyone can let us know something about what it is, or the cause of it, they will be adding to the comfort of these little birds.

After saying so much about this ailment you may think these birds are not at all hardy. When I tell you that three of the four birds were newly imported (and in the month of February at that)—two of these having only about half their full complement of feathers, while the fourth bird was about a year in this country and had never been strong—it does not sound so bad.

It should be mentioned that this disease has only been experienced with the Red-heads. I have only once seen a dead Blue-head and that was a young bird which was drowned. I do not remember ever giving any sort of medicine to one of this latter variety; they are as hard as nails.

The most troublesome thing about Parrot Finches is the unfortunate similarity of the sexes. A good deal has been written about this point in the past, but I have found very little of it of any real practical use. Those who have said " the sexes are alike in plumage " are probably nearest the truth. By accident last year I struck what I believe to be a fairly certain test for the sex of Red-heads. Not wishing, however, to confuse further—should it ultimately prove wrong—I do not intend to say what it is, just yet. It is very simple and therefore I fear someone would surely have noticed it before if there was anything in it. It was, nevertheless, correct in the case of nine birds in my aviary this spring. When the 1932 youngsters get their adult plumage and then prove it correct by laying eggs, or not—as the case may be—or should they die they can be dissected; then is the time to tell it.

During the winter while the birds are confined to the house the

feeding has to be more simple as it would take a great deal of time doing the daily round. There is always a hopper filled with canary seed, one with white millet and another with Indian. The birds hardly touch either of the latter, but if they eat any at all it is always well, as it is difficult to vary the food of these birds much. About three times a week sprays are provided, and about twice a week insectile mixture and two mealworms per bird. The last two things are given on different days, so the bill of fare is not too monotonous.

Every six weeks or so cod-liver oil-soaked canary seed is given for a week. Tufts of weed grass are put in regularly—earth and all. These rules are not held to hard and fast, and should the birds be moulting, for instance, more insectile food is used and also cod-liver oil seed.

It is usual to separate the sexes as far as is possible. It is best to have the cocks as far away as is convenient. If you have two houses put the cocks in one and the hens in the other. This reduces the chances of the cocks bickering and of hens doing any winter laying. Neither is likely, but it is well to take as few risks as you can.

Parrot Finches are very fond of bathing, so do not use dishes with more than an inch or so of water in them, and change daily.

In the spring of 1931, thinking I would be very kind to my Parrot Finches when they were turned into their outdoor aviary, I kept the heater on. The head feathers of the birds were continually in quills. After a month or so the weather became warmer and so the heater was turned off. The birds almost at once got their full plumage and began to think of nesting. To make quite sure that it was the heating it was again turned on and the result was more quills which disappeared when it was stopped. Members have from time to time written to the Magazine about birds in aviaries with heated shelters. It certainly has not been a success with Parrot Finches here, though it may suit birds of the Parrot tribe.

For nesting sites the best things to use are straw hats, wicker cages, and the usual Finch boxes. The birds seem to like them in the order mentioned. Almost any material will be used for building, but moss, fine hay, heads of flowering grasses, and dry leaves are most often used. They have not a craving for nesting in the flight, and as this is

not to be encouraged these hats, etc., should be placed only in the shed. The grass in the flight should be kept fairly short as on two occasions birds have built nests here on the ground in long grass. They were not a success in either case.

When the young birds leave the nest it is much better that they should remain in the shed for a day or two, no matter how good the weather. If they leave a nest in the flight and are then put into the shed they seem to be out again like " Jack-in-the-boxes ". If, however, they are hatched in the shed there is usually not much trouble keeping them there if the hole is a small one. When they do find their way out it is well to have a look before dusk to make sure that they have found their way in again. There won't be much trouble after, say, the third night. If you can procure a few sheaves of new crop oats as soon as it is ripe, or a little before, the birds are quite fond of it.

I have told you my interpretation of the experiments which I have carried out during 1932. It may be interesting for any who have read thus far to see just how the three different pairs were actually fed. The table on p. 309 will, therefore, meet the case.

Some may say that the results are not very conclusive : that although No. 3 pair succeeded in rearing four birds they had more fertile eggs, and only reared 50 per cent of them. Also that the four in the first nest might not have been reared had they not been drowned by rain. To the latter I can say nothing ; to the first I say that they had 100 per cent fertile eggs and 100 per cent hatch, and this alone must not be forgotten. A glance at No. 1 and 2 pairs will show that they did not have so good a percentage of fertile, and of the fertile there was not a full hatch. In the case of No. 1 pair (which was a proved pair in 1931, laying seven eggs, six of which were fertile) the fertility was 75 per cent, while of these only $66\frac{2}{3}$ per cent hatched ; while with No. 2 pair it was only $27\frac{1}{4}$ per cent fertile and less than 10 per cent hatched. It should be mentioned that No. 1 pair in 1931 was treated in almost the same way as No. 3 pair this year, the only difference being that they got hardly as many millet sprays.

If you take the Blue-heads into consideration there were two nests of four each, only one of which was clear, $87\frac{1}{2}$ per cent fertile. You will remember the second nest was deserted the evening before the hatch,

Pair.	*Supplied.*	*Not supplied.*	*Result.*
No. 1. Old pair which reared three young in 1931.	Canary Seed. White Millet. Indian Millet. Soaked Seed.	Mealworms. Insectile Mixture. Cod-liver Oil Canary Seed.	One nest of four eggs, three of which were fertile ; two hatched, one died second day, and one on the third.
No. 2. Hen 1931 bred by No. 1 pair ; cock imported.	Canary Seed. White Millet. Indian Millet. Sprays of Millet. Insectile Mixture, while rearing young only.	Meal Worms. Cod-liver Oil Canary Seed. Insectile Mixture, except while actually feeding young.	Four nests of four, three, two, and two eggs. Refused to sit on first nest, two of which were fertile. Two eggs clear in second ; hatched and reared the third. Remaining two nests clear eggs. Young bird died at three months old and was thin on examination.
No. 3. Hen 1931 bred by No. 1 pair; cock imported, also two odd cocks in the aviary.	Canary Seed. White Millet. Indian Millet. Sprays of Millet. Insectile Mixture. Mealworms. Cod-liver Oil Canary Seed. Soaked Seeds.		Two nests of four eggs each ; four young hatched in each case. First nest in long grass in flight. Thunder shower drowned the lot when doing well. Second nest all four reared to independence.

All of these pairs are Red-headed. The Blue-heads were fed as No. 3 pair. It can be imagined that as the season progressed it was found very difficult to stick to the plan.

so it is not really a fair test as the hen was disturbed. It should be noted, however, that on examination all four eggs were chipped, which was a healthy sign.

In spite of the feeling that these notes are much too long, I think attention should be drawn to another point. It is this : although in the spring (weather being favourable, of course) the birds may be turned into their outdoor aviary without any particular precautions

being taken, the story is rather a different one as autumn and winter approach. If the weather becomes suddenly cold and perhaps damp about mid-September (as is usual in this country) and the birds have not already been closed in their indoor aviary, one will make arrangements quickly to put them at once into their winter quarters. This will be found to have a bad effect on the birds' health. They will get a set-back and will perhaps go into an unnatural moult. Worse still, they may even die from this cause alone. It is much wiser to start early by keeping the birds indoors at first one day a week, increasing it to two or three days a week. Then when the weather breaks the effect will not be felt. Especially will this be so if you can manage to let them out for an hour during sunny intervals occasionally. Care, however, should be taken with this and the good will be lost if it is overdone. I make this suggestion in connection with Parrot Finches, but it was actually with Zebra Finches that the value of the procedure was first realized here. Probably it is equally true with all birds that are confined during the winter months. It may at first seem of little importance, but when one thinks of all the little things that a bird is continually getting on the ground and in bushes it will be realized that a sudden deprivation of these things will be missed. Certainly better results have been obtained since it was put into force in my aviaries, and it is strongly recommended.

BREEDING BUSTARD QUAIL

By THE LATE H. L. SICH

The *Turnix* belong to one of those genera of birds in which the cock alone incubates and takes charge of the young, yet this year I have had a hen *Turnix taigoor* which laid four eggs and then proceeded to incubate them herself. The little cock sat close up to her and was only allowed on the eggs when she went off to feed, if he did not accompany her. There was no doubt as to which bird was really on the eggs as the nest was close to the wire netting, the other side of which was the door into the food room. Sometimes when she came off

she used to " boom ", a call which I have only heard just before and during the laying of a clutch of eggs, which out of some hundred clutches laid in my aviaries by various hens, is nearly always three.

As they had not hatched after eighteen days I took them away and found them all infertile. Thinking that there might be something wrong with this abnormal hen, I took her out and gave the cock one of my other two hens.

A few days afterwards I was able to buy another cock but of a different species to my first one. This I put in with the first hen. They soon paired up and the hen laid four eggs again ; owing to the cock being new to the place and the want of cover they always left the eggs whenever I came within a few yards of the aviary. From a distance the cock appeared to be standing in front of them, rather than incubating them.

Three of the eggs had hatched out by the morning of 3rd September. The hen took no further interest in them and as live food was rather scarce I took her away. Now, 20th October, these three chicks are about the size of the cock and look very like him.

The hen with the original cock did not lay until all hope of getting live food for the chicks was over. As two of these eggs were fertile it was a great pity, for now I believe this cock is some other species, as his legs are yellow while those of the three hens and the new cock are a lead colour ; the rest of his plumage is much like the hen's, except that they have a black stripe down the breast. As the cock and hen were sent to me together as a pair I never doubted them until I got the new cock a few months ago. Now I believe that this cock is *tanki*, of which I have only had odd hens, and the new cock is *taigoor*. I thought at first that it was some other species and was surprised at the eggs hatching.

[Accounts of the breeding in captivity of *Turnix tanki* appeared in this journal for August, 1903, and of *Turnix varia* in August, 1905.—Ed.]

FURTHER BREEDING NOTES FOR 1932

By The Marquess of Tavistock

In previous articles I have given an account of some of the outstanding successes of the season and also of the principal failures and disappointments. To the latter must be added the death, two days after being taken from the nest, of a young Amboina King Parrakeet. The male parent, *Alisterus amboinensis buruensis*, much smaller than the hen, though similarly coloured, reached me in very bad condition from long and close confinement, and it is probably owing to some lingering defect in his constitution that his offspring failed to reach maturity. Two eggs were laid by the hen—a typical *amboinensis*—in a natural tree-trunk, but only one hatched and the young bird was deformed, lacking the last joint to one wing, which resulted in its being naturally pinioned. It stayed in the nest far beyond the normal period and when taken out was found to be rickety. Although both parents were assiduous in caring for it and had begun to moult, just before we opened the nest the hen had delivered a violent attack on her mate, scalping him badly and nearly killing him. Her conduct was wholly unexpected as they had lived together for nearly two years without any hint of serious trouble. I can only suppose that she had got nervy and irritable over the strange delay on the part of her child in leaving the nursery, and some tactless remark from the cock to the effect that it was probably her fault precipitated an explosion! The young bird was fully feathered and save that it had less blue on the mantle was as brightly coloured as the adults. *A. amboinensis* is evidently one of the most modern and highly specialized of the King Parrakeets as male, female, and young are much alike and are all richly coloured.

Although, as usual, disappointments were frequent among the greatest treasures, the commoner birds and established breeding pairs acquitted themselves remarkably well. A pair of Barrabands that reared three young last season this year brought up five. The cock was bred by Madame Lécallier and as a youngster distinguished himself by finding his way home across the Solent after he had been blown from Havant to the Isle of Wight in a furious blizzard. His wife appears

to have artistic tastes as she persistently refused to nest until her box was decorated inside and out with natural bark! A second pair of Barrabands which reared three young are interesting in that their offspring are third generation aviary-bred and are from parents that are brother and sister into the bargain. The parents were bred by Mr. Ezra from a pair bred by myself. Birds of the same species—especially intelligent ones like Parrakeets—show interesting and (sometimes!) delightful variations in individual temperament. The mother of the three young birds stands out among all the Barraband hens I have owned for her extreme enthusiasm for the joys and cares of domestic life. She had nested with a previous owner but her eggs had been infertile and an exchange for an unrelated bird had been arranged. The day after her arrival she showed no uneasiness at her strange surroundings nor regret for her former mate, but climbed about in a great state of excitement answering the calls of the gentleman she had decided on as his successor. The favoured cock had been living for a considerable time with another lady, though in justice to him and the very high standard of morality characteristic of Barrabands, I cannot say that he had actually made proposals of marriage. Anyhow, as soon as he discovered the new hen's aviary (he was a partly trained liberty bird), he had eyes for nothing but her. They fell violently in love at first sight and have been devoted to each other ever since. Directly the nest-box was put in they took possession of it and for nearly nine weeks I saw so little of the hen that I often feared she might be dead. I have never had a Barraband who took to her nest so quickly or stayed so constantly with her family until they were almost ready to fly.

Two pairs of Indian Ringnecks living in the same large aviary went to nest about the same time. One pair reared five strong young ones but only a solitary youngster emerged from the second nest, to be fatally injured soon after by the parents of the five. Later we found the mummied corpse of the second hen inside her box. The tragedy shows that even ring-necks cannot safely be kept together in the breeding season, even though they are said often to nest in colonies in India. A pair of Rosellas had six young in their first nest. One young bird was rickety and injured itself and had to be

destroyed, but the rest were very fine specimens. The cock of this pair, though a ferocious fighter with other birds of his sex and genus, is a singularly gentle and devoted husband and father. He was at one time a liberty bird, but so great was his attachment to his mate that he insisted on roosting on the roof of her aviary, with the result that one night he was badly mauled by a rat. Since then I have kept him shut up all the year round, an arrangement which he evidently prefers.

The Yellow-rumps reared five fine young ones in their first brood and four in their second. They are also a model couple, very gentle and devoted to each other and extremely prolific. Although, through no fault of their own, they have not reared all their offspring, they must, since I first had them, have hatched nearly sixty eggs. Like many good breeding pairs they were, for many years, abnormally wild and nervous. It has also taken them nearly nine seasons to acquire a taste for peanuts !

The Crimson-wings reared three good young ones, the fourth egg of the hen's first clutch being misshapen. For the first time in her life she laid two more eggs after rearing her first brood, but she did not sit.

The Australian Kings hatched two eggs of their first clutch and reared a very fine true pair of young ones which promise to be better birds than their parents. The hen laid again and has a second brood a few weeks old. Strange to say, the cock seems more fertile late in the summer when he has begun to moult than earlier in the year. I find it is quite easy to sex Kings within a few weeks of their leaving the nest. The hens have much darker beaks and the red on the abdomen does not extend so high up. A young cock's beak becomes partly reddish at an early age.

Brown's Parrakeets reared four good young late in the summer after a spring moult. Last year they lost their young in a similar type of nest. The hen is aviary-bred but her husband is imported and has a none too creditable " past " both in his native land and in England. Though a model father, he possesses the unpleasant peculiarity of desiring to murder his wife if for any reason he has been separated from her even for the briefest period, while his appetite for warfare and

bloodshed is something incredible! In Australia he murdered the greater part of an aviary of birds, while he and his principal rivals bear to this day the scars of the three days' battle which raged almost unceasingly when some years ago I was imprudent enough to try him at liberty! I should perhaps add that these shortcomings are peculiar to himself. The average cock Brown's is no more and no less pugnacious than any other broadtail.

A pair of lutinistic Plumheads were given a hollow apple-tree for a nest. Last year, in a grandfather-clock box, three out of their four young were badly rickety. The hen bit a hole in the top of the tree-trunk in addition to the entrance-hole at the side, but as I thought she might consider the extra light and air preventative of rickets I did not interfere with her arrangements. Apparently she was right, as the four green young proved nice strong birds. They were reared largely on spray millet of which the parents are exceedingly fond, in addition, of course, to fruit and other seeds. Young Plumheads are decidedly sensitive to cold and must be wintered indoors their first season. They undergo a fairly thorough body moult their first autumn, when their heads become grey, being green tinged with dull salmon pink when they are in first plumage. I am still uncertain as to whether the males assume their plum-coloured heads in the second or third autumn.

My *Barnardius crommelinæ* which, for a long time, I believed to be a hen, has ultimately turned out a male. His mate, an ordinary Barnard, did not nest last year, but this season they reared four young, one being weakly and dying after being caught up. The cocks have well-developed yellow bars on the breast but the hens had the uniform blue-green of the male parent.

Pennants hatched two of their seven eggs and reared two nice young, one being mainly red in first plumage and the other mainly green. The cock is a bit eccentric as a result of many years close confinement in a cage in a grimy industrial town. He is now, in his old age, a thoroughly lazy rascal, leaving the whole care of his family to his wife whom he does not bother to feed even when she is sitting. If he sees her busy about the home he whistles pompously by way of encouragement but does nothing else. I do not think she has any

illusions about him, particularly since last winter when he was at liberty and not only flirted outrageously with a hen Stanley less than half his size but tactlessly brought her on to the roof of his wife's aviary to the intense annoyance of that ill-used lady! His taste for low company also attracts him to the Queen of Bavaria Conures, whose clownish antics and deafening voices fill every broadtail of refined disposition with wonder and disgust. The season's successes and failures have tended to emphasize the value of natural tree-trunks as compared with artificial nest-boxes and indicate that the prevalence or absence of rickets in young birds depends quite as much on the season as on the feeding. Last year, using cod-liver oil-soaked seed I had about eighteen bad cases of rickets, three mild ones, and about half a dozen young birds dying in the nest out of a total of about forty hatched. This year, without cod-liver oil, I have only had two cases of rickets, one weakly youngster and seven dying in the nest out of a total of about sixty-two hatched.

In November the Hooded Parrakeets hatched two young on the floor of the aviary shelter, but they only lived three days in spite of artificial heat.

HOODED SISKINS—A FAILURE

By the late H. L. Sich

One of my disappointments this year is that a pair of Hooded Siskins hatched out at their second attempt but failed to rear the young.

Soon after they were let out of their winter quarters they took a fancy to a Hartz cage hung up in the shelter. Two eggs were laid and then they seemed to lose all interest in the nest, but when going to get the eggs to give to a Canary I found them quite warm. I discovered that one of several hen *Sporophilæ* was incubating them. As I still put the food dishes in the shelter the birds had to come in to feed. The Hooded Siskins used, after feeding, to fly up on to this cage and prevent the hen *Sporophila* from entering it. Matters were further complicated by a pair of Black-headed Siskins which had a nest on the opposite wall. The cock used to feed the hen on the nest and

then drive out the Hooded Siskins and any of the *Sporophilæ* that happened to be there. He took no notice of the Grass Finches whatever. The eggs were deserted and when I broke them open I found them nearly ready to hatch.

After the other Siskins had reared a brood, although the hen was sitting again, I took out the cock to give the Hooded a chance.

Not very long afterwards the same *Sporophila* hen, or another one, built a nest in a privet bush ; when finished the Hooded Siskins seized it and laid four or five eggs. I hardly liked to examine it but I noticed one day that some of the eggs had hatched, then on two occasions I had to go in and rescue some Quail chicks and catch up the parents as well. This probably disturbed the Siskins too much as shortly after their nest was empty. Last year they only made feeble attempts at nest building when in a small flight all to themselves. I put it down to the cold and wet summer, but it seems as if this hen cannot build her own nest. The eggs laid in the first nest were like the later ones, quite different from those of the White-throated Finch, the only *Sporophila* eggs that I have seen.

SUCCESSFUL REARING OF FYTCH'S BAMBOO PARTRIDGE (*BAMBUSICOLA FYTCHII*)

By Alfred Ezra, O.B.E.

Bamboo Partridges (*Bambusicola*) have rather long tails, long slender legs with spurs in the males. They are always grey and both sexes are alike, except for the spurs in the males. There are three species : The Common Bamboo Partridge (*B. thoracica*) from Eastern China ; the Formosan Bamboo Partridge (*B. sonorivox*) from Formosa ; and the above-mentioned Fytch's Partridge, which inhabits the forest hills of Tonkin, northern Laos, Yunnan, Szechwan, Shan States, Kachin Hills, and Assam, at an altitude of 4,000 feet. Those found in Assam are a slightly different race (*B. hopkinsoni*). While the first two species have been bred in aviaries, and have even been acclimatized in Japan at liberty, Fytch's Partridge has never reared young in

captivity. M. Delacour brought over some a few years ago from Chapa, in the north of Tonkin, close to the borders of Yunnan, and very kindly gave me some. These were turned out into a large aviary, and although they laid several times last year no chicks were reared. This spring the first lot of four eggs were laid early in May, in a nest which was just a hole at the foot of some pampas grass. Two young were hatched out, and the other two eggs contained dead chicks. These chicks disappeared soon after hatching. Four more eggs were laid on the 4th June, the birds using the same nest. Three of these hatched out, and the fourth egg contained a dead chick. My success in rearing these was due to my man, Shearing, who promptly removed the hen bird with her three chicks into a small aviary which they had to themselves. Two of the three chicks were successfully reared by the hen bird in the small aviary. The chicks were fed on fresh ants' eggs, gentles, and yolk of egg to start with, and later they ate everything. The first lot of chicks were evidently devoured by the Ground Cuckoos which occupied the same aviary. Another nest was found in some thick grass, and this also contained four eggs. All were hatched out and were taken with the hen into a small aviary. None were reared as the hen bird was much too wild. In each clutch there were four eggs, and the period of incubation was roughly between eighteen and twenty days. I am pleased to have succeeded in rearing these rare Partridges after three unsuccessful years.

BREEDING THE WHITE-WINGED MYNAH (*STURNIA NEMORICOLA*)

By Alfred Ezra, O.B.E.

The White-winged Mynah is found from Burmah to Indo-China. It lives in wooded districts and among isolated trees in park-like country, but not in primeval forest. They nest in holes of trees, and are usually seen in flocks of twenty to thirty. They are not migratory, but wander from place to place. One often sees them feeding on nectar and insects, on flowering trees such as the silk-cotton (*Bombax*).

M. Delacour caught a few of these pretty birds in the suburbs of Saigon, and very kindly gave me a pair. These nested in a log nest-box, and the nest was constructed with old leaves, dried grass, and sticks. The colour of the egg is light blue. Two young were hatched about the 21st May. Both were found dead. One when only six days old, but the other, which was fully feathered, about a fortnight old. They laid one egg on the 8th June, and a young one was hatched on the 22nd. This one was well looked after by both the parents, and left the nest on the 14th July, fully reared. I believe this is the first time this bird has been bred in captivity. I may mention that this Mynah does very well in aviaries and is quite easy to keep and to feed.

MORE ADDITIONS TO BREEDING RECORDS

By Dr. E. Hopkinson, C.M.G., D.S.O.

(*Continued from page 226.*)

TANAGERS

p. 49. *Under Nos.* 214–16 *for* "*Tanagra*" *read* "*Tangara*", *and under Nos.* 212, 213 *for* "*Calŏspiza*" *read* "*Tanagra*".

p. 219. *a*, Whitley tells me that he is now (1928) sure that the mother of these hybrids *was episcopus.*

p. 49. *Add:* Blue Tanager (*Tangara cana*). In *A.M.*, 1928, 52, the award of a Medal to the Rev. R. B. Abel for breeding this Tanager is announced.

p. 50. 219. Yellow-rumped Tanager. *This record must go to a footnote and read as follows:* In *B.N.*, 1917, 197, and *A.M.*, 1917, 262, Brook recorded success in Scotland, "the Tanagers have young," but later he had to report (*A.M.*, 1917, 321), that the young had disappeared, probably killed by the old birds.

SUGAR-BIRDS

p. 50. *Replace the footnote,* Yellow-winged Sugar-bird, *by an entry.* 220. *i*, Yellow-winged Sugar-bird (*Cyanerpes cyaneus* (L.)). First bred by Matsunaga in Japan in 1928. After a clear

clutch a second lot of eggs were laid in June ; two young hatched out on 4th July and left the nest on the 19th. At the time of writing (2nd September) they were still flourishing, though they still followed their parents about clamouring for food. *See A.M.*, 1929, 30. Miss Chawner had previously recorded (*A.M.*, 1916, 270 ; 1917, 57) almost complete success both in 1915 and 1916, the young birds living a fortnight on each occasion.

TROUPIALS

p. 51. No. 224. PURPLE GRACKLE. *For* Jasco *read* Jaszo.

p. 219. In *A.M.*, 1928, 291, Shore-Baily reported the hatching of two BROWN-HEADED TROUPIAL × BAY COWBIRD hybrids, " quite strong on the wing at the time of writing " (*Sept.*). He told me (1932) that these two lived for several years, and that he bred others.

STARLINGS

p. 52. 230. MANDARIN MYNA. *Add to record :* In *L'Oiseau*, 1921, 182, he described success in his aviary.

p. 219. *Add :* 229. *a*, PAGODA MYNA × MALABAR MYNA. Whitley reared one in 1927 ; I saw it in August fully feathered and in perfect condition ; head grey, intermediate in colour between the black and pale grey caps of the parents. Four more were reared in 1928, and all five were still alive in 1930.

p. 53. *Add :* 235. *i*, ROTHSCHILD'S GRACKLE (*Leucopsar rothschildi*). Bred by Ezra in 1931, one young bird reared ; a first. *See* account in *A.M.*, 1913, 305, 350.

p. 53. 236. GREEN GLOSSY STARLING. *For the record as given read :* First bred by R. de Grady at Liège in Belgium and the event recorded in *Bull.*, 1870, p. 209. Later, *teste AGB.*, ii, 36, and *Nzig.*, 500, they were bred at the Zoo, and Decoux tells me that Mme de Kerville bred the " Green Glossy Starling " at Rouen in 1893 and 1894, and published an account of the event : " Le Lamprocole chalybée," *Rouen*, 1894 (coloured plate). Page writing in *B.N.*, viii, 137, says,

" our esteemed member, Mr. Bush, informs me that this species (*chalybeus*) has bred freely in his aviary and that he was surprised to find the nestling plumage glossy. . . . We hope to give a detailed account . . . in our next." No such account appeared, so we get no further. In any case it must always be doubtful exactly what " Green Glossy Starling " indicates, there are so many alike, and although where a specific name is given in a record it is usually *chalybeus* (East Africa), we may presume that much the most likely species (at any rate till recently) to have been bred is the West African *chloropterus*.

Note.—Ezra in *A.M.*, 1931, 330, reports the breeding of *Lamprocolius purpuropterus*, but the young one was killed the day it left the nest.

p. 54. 238. PETER'S GLOSSY STARLING. *Add:* Whitley's birds continue to breed at Paignton. These are another case of difficulty as to exact species. In *A.M.*, 1926, 321, the Editor says, " probably *chalybeus*," but in 1927 they were identified at the British Museum as *nitens*. The owner is sure that the original birds came from Abyssinia, and considers them " *bispecularis* ".

p. 54. *Add:* 239. *i*, BURCHELL'S GLOSSY STARLING (*Chalcopsar australis* (Burch)). A hybrid record only.

239. *ii*, RED-WINGED STARLING (*Amydrus morio* (L.)). A hybrid record only.

p. 219. *Add:* BURCHELL'S STARLING × RED-WINGED STARLING. " A very interesting hybrid between these two very distinct species has been reared by Mr. Whitley." *Editor*, *A.M.*, 1926, 322. I saw the young bird in September, 1926, when it was about three months old; in shape like the father, but no gloss on the plumage. The nest was mud-lined and very thrush-like. The mother died the next year, but the young one was still alive in 1931, not very different in looks from the father and with no sign of the mother's brown.

p. 54. *Add:* 239, *iii*, WHITE-CAPPED STARLING (*Heteropsar albicapillus*). One bred by Ezra in 1929. It was killed

by the parents three weeks after leaving the nest, but from a second nest one flew in September, and I think was reared. Medal awarded. *See A.M.*, 175, 198.

p. 54. *Add:* 239. *iv*, CROWNED STARLING (*Galeopsar salvadorii*). Bred by Ezra, a first, in 1931. Two young reared. When the eggs were hatched the cock was shut up and the hen given her liberty till the young were reared. There had been many previous failures till this was tried. For full account *see A.M.*, 1931, 305, 330.

p. 54. *Add:* 240. *i*, ROYAL STARLING (*Cosmopsarus regius* (Rchw.)). In *A.M.*, 1930, 305, Lady Wavertree records the breeding of two young Royals at Bournemouth, a first; further notes p. 327; medal awarded, 1931, 81.

p. 219. *Add:* 240. SUPERB SPREO. 240. *i*, ROYAL STARLING. *a*, ROYAL STARLING × SUPERB SPREO. Whitley reared a young one of this cross in 1930. I saw it in September; it took more after the father than the mother but had a shorter tail and was obviously not in full colour yet. Still alive May, 1932.

p. 54. 240, SUPERB SPREO. *Add to record:* Ezra reared five in 1931, *see A.M.*, 1931, 330. Whitley tells me that in 1929 three were reared with him.

p. 54. *Add:* 240. *ii*, MALAY CALORNIS (*Lamprocorax panayensis strigatus*). Bred by Isenberg in California in 1930, two young being reared. *See Aviculture*, November, 1930, *teste A.M.*, 1931, 23.

CROWS.

p. 55. *Add:* 241, *i*, CORNISH CHOUGH (*P. pyrrhocorax* (L.)). Neunzig includes this (but not the Alpine C.) among the birds which have been bred in captivity, and gives the reference *D. Gef. Welt.*, 1909, 241. His exact words are "Haben in der Gefangenschaft mehrfach gebrütet. . . . Ein 18 Jahre altes Alpenkrähenpaar (= *the Cornish Chough*, E. H.) brütet alljährlich auf 6–7 Eiern mit Erfolg". This, I take it, must mean successful rearing (*Nzig. Einh.*, 387).

p. 55. *Add:* 245. *i*, BEECHEY'S JAY (*Cissolopha beecheii* (Vigors)). Bred by Sutcliffe in 1926; three young reared; Medal. See *A.M.*, 1926, 102, 116.

BOWER-BIRDS

p. 56. 248. AUSTRALIAN CAT-BIRD. *Delete the last three lines of the record; I inserted this in error.*

p. 56. *Add to the* REGENT BIRD record; In Australia Heumann bred them; *see A.M.*, 1928, 119.

WAGTAILS, ETC.

p. 58. *Add to* 257. YELLOW WAGTAIL. Captain Stokes succeeded again in 1926, rearing one young one. *See A.M.*, 1926, 282.

p. 60. *Add:* HONEY-EATERS, *and replace the footnote* (2) *with the entry:* 267. *i*, GARRULOUS HONEY-EATER (*Myzantha garrula* (Lath)). Bred by Suggitt (one reared) in 1925—a first. See *A.M.*, 1925, 266, and 1926, 116. Medal. *And add another footnote:* PIPING CROW. Frank Finn in his *Pets and How to Keep Them* (1907) says: "some time ago a pair of pinioned birds bred in a low-branching tree in a garden in England, . . . the young were successfully reared, with the exception of one, which died when just fledged. The case was communicated to me by Mr. Waterhouse, librarian of the Zoological Society, and the young bird which died was given to the British Museum." Mr. Finn can give no further particulars or remember which species it was, but is sure it was before the war. I am afraid now that we shall never know more of this apparently perfectly good record.

p. 61. *Add:* PIED GRALLINA (*Grallina cyanoleuca* (Lath)), late *picata*. A pair in Ezra's aviary in 1928 after three failures hatched out one young bird, which left the nest on 3rd August, but died three weeks later from an injury to the leg. A Medal was awarded. *See A.M.*, 1928, 233, and 1929, 198; *also L'Oiseau*, 1929, 171.

p. 64. 280. GREY-WINGED OUZEL. *Add:* Page's was the first recorded success, but Whitley tells me he reared two young in 1906, one of which I saw still alive in 1931.

p. 64. 286. Olivaceous Thrush. *Line* 3 *for* 1925, iv, *read* 1926, 116.

p. 65. *Add:* 291. *i*, Hermit Thrush (*T. guttatus*). Bred by Amsler in 1926; a first: one young one reared; Avicultural and French Medals awarded. *See A.M.*, 1928, 52; 1929, 21, and *L'Oiseau*, 1928, 334.

p. 66. *Add:* 292. *i*, Blue Rock-thrush (*M. solitaria*). First bred by Amsler in 1931; four hatched, one reared. See *A.M.*, 1931, 265.

p. 66. 294. Orange-headed Ground-thrush. *Add:* They were bred for the first time in France by Decoux in 1926. *See L'Oiseau*, 1927.

p. 68. 298. Nightingale. *For* "(*L*)" *in name, read* (*Brehm*) *and add after* "search". Nightingales have also been bred in France; a recent record is to be found in *L'Oiseau*, 1920, 148.

p. 70. 307. Jerdon's Accentor. *For* "(*Boorks*)", *line i, read* "*Brooks*".

p. 70. 309. Black-headed Sibia. *Add to record:* The A.S. Medal was awarded (*A.M.*, 1926, 116). The same pair nested again in 1926, but the one young bird hatched died the day after it left the nest (*A.M.*, 1926, 290), and an account of their further doings is given by the breeder, *A.M.*, 1932, 23. The original pair reared three more broods (seven young) in 1931 at semi-liberty; at the end of the season the two old birds were still allowed loose, but the young were shut up in the aviary.

p. 71. 311. Silver-eared Mesia. *Add:* Decoux bred them in France in 1925, rearing three young, but published no record, and Ezra in *A.M.*, 1931, 331, records the rearing of one young bird in that year.

p. 72. 316. Red-whiskered Bulbul. *Add after* France, *line* 2. In *L'Oiseau*, 1921, 176. Decoux gives more French records: Bellot at Cognac (*Brisay: Insectivores*, p. 55), and others more recently.

p. 74. *Add:* 321, *i*, Indian Coucal (*Centrococcyx rufipennis*). Shore-Baily in *A.M.*, 1928, 279, records the rearing of one young bird which left the nest on 28th August, 1928, and gives

a photo of it on that day. The Medal was awarded (*A.M.*, 1929, 198).

p. 74. 322. Senegal Turaco. *Add to record:* Stokes reared one in 1921 and gives a full account in *A.M.*, 1932, 3. *Add:* 323. *i*, Donaldson's Turaco (*T. donaldsoni*). Bred by Isenberg in California in 1929, "four young from three nests," *teste Aviculture*, as quoted in *A.M.*, 1930, 129.

p. 75. *After* Colies *add:—*

Barbets

324. *i*, Abyssinian Barbet (*Trachyphonus margaritatus* (Rüpp.)). Bred by Capt. Reeve in Lincolnshire in 1927, one young one being reared. See *A.M.*, 1927, 226, and 1928, 52; Medal. The young bird was still alive in 1928.

p. 76. 326. Hoopoe. *Add* after . . . Cork." Miss Chawner tells me *in lit.* (14*th October*, 1932) that the young were reared, for she had a pair of them which lived with her for a year.

p. 76. *For the note on the* Long-tailed Roller *substitute:* 328. *i*, Lort's Roller (*C. caudatus lorti*, Shelley). Bred by Whitley in 1929 after several years attempts, to which the note on p. 76 refers. Whitley tells me that it was *lorti* not *abyssinicus*, as I thought, which he bred.

[M. Decoux has been good enough to send me some corrections regarding the books by the Marquis de Brisay mentioned in the first part of *Additions to Breeding Records*, which appeared in the July number, p. 149.

These are: (1) The date of *Passereaux* (there should be no article *Les*) is before 1894, which is the date of a second edition. (2) For *L'Aviculteur* . . . read *L'Aviculture* . . . This is a reprint of articles which appeared 1891 to 1893 in the *Bulletin de la Société d'Acclimatation de France*. (3) *Insectivores* . . . was published in 1898. (4) As important as any, the correct spelling of my kindly corrector's name is Decoux without an accent.

Will others, who can, help me with further corrections and additions, particularly records which have appeared in print, for although I have had to include a certain number of others, printed ones are the real

desideratum. Not only records of new species bred are wanted, but also further details for the many cases where the present ones are scanty or doubtful, and of course corrections and necessary deletions as well.]

REVIEWS

HEREDITY IN THE BUDGERIGAR

We have received from the author, Dr. Hans Steiner, a copy of his *Vererbungsstudien am Wellensittich* (1932). This is a Thesis submitted to the Philosophy Faculty of the Zurich University, and its title may be Englished as "A Study in Heredity in the Budgerigar", and its secondary title as "A Critical Contribution to the problems of domestication". It deals fully with the general history from the first living arrival in Gould's time in 1840 up to the development of the latest colours and breeding experiments to date, in fact with every detail and problem connected with what can now be rightly described as the science of Budgerigar breeding. It is to be hoped that some one competent will come forward to translate this interesting and valuable treatise.

All that can be done here is to attempt to illustrate its scope by translating the more important chapter headings.

ii. *Historical*, 34 pages.

iii. *Breeding experiments*, 32 pages.

iv. *Genetics and analysis of the Colours and Colour-varieties*, 30 pages,

v. *Duncker on the Genesis and hereditary transmission of colour*. 12 pages.

viii. *Colour-variation and the problems of Evolution*, in which similar changes in other Parrots are well dealt with, 10 pages.

x. *Bibliography*, very complete.

Lastly, though certainly for many of us not least in interest, are the ten coloured plates, diagrammatic and to scale, showing to perfection the various colour-varieties known to date, *Grünes*, *Gelbes* (2 types), *Maigrünes*, *Blaues*, *Weissblaues*, *Olives*, *Kobalts*, *Graues*, *Olivgelbes*, *Weissgraues*, *Weisskobalts*, and *Grauflügels*. Not being a

Budgerigar expert I dare not risk trying to translate these names, but it seems to me that what we call Mauves the Germans know as *Graues*, and I can certainly confess that at last I know what a "Grey-wing" is or ought to be.

E. H.

WATERFOWL AND GAME-BIRDS IN CAPTIVITY [1]

Mr. Moody was, for many years, in charge of the magnificent collection of living birds, chiefly Waterfowl, Waders, Game Birds, and Bustards, kept by Mr. St. Quintin, at Scampston Hall, Yorkshire. He had unrivalled opportunities of gaining a knowledge of the habits of his charges, guided as he was by one who himself had acquired great skill from his long experience of keeping birds under ideal conditions. Mr. Moody was quick to observe and to profit by his observations and, moreover, he kept careful notes. The result is that he has been able to hand on the results of his long years of practice in bird-keeping in the form of a book that will be generally acknowledged as of great value to all who will wish to keep these groups of birds. It is a book of 240 pages, and in it the author tells of the appearance, habits, disposition, nesting habits, and so forth of nearly two hundred different species of birds that have at one time or another been in the Scampston collection. It is valuable as a record of the large number of species that that collection at one time contained, but its chief value lies in the experience gained and recorded.

The last twenty pages or so deal with Aviaries, Foods and Feeding, Overcrowding, Handling, Treatment of New Arrivals, Packing, Feather-clipping and Pinioning, Vermin, Diseases and Accidents. It is a book that will be invaluable to all who contemplate commencing bird-keeping, and even the old hands will find much in it that is useful. It contains some nice photographic plates.

D. S-S.

[1] *Waterfowl and Game-Birds in Captivity*, with notes on Habits and Management. By Arthur F. Moody. H. F. & G. Witherby, 326 High Holborn, W.C. 10*s*. 6*d*. net.

A SUMMARY OF BREEDING RESULTS

We are all familiar with Dr. Hopkinson's very valuable breeding records. His book, *Records of Birds Bred in Captivity* (Witherby, 326 High Holborn), has proved of great value to aviculturists, but as this was published in 1926, many additional records have been made since. These are being recorded in detail in the series of articles appearing in our journal, but in addition to this the author has published a *Summary of Breeding Records to Date*, which shows at a glance those species that are known to have been bred, and, in different type, the more doubtful records.

We note that in the case of the Grey-headed Sheldrake (*Casarca cana*) the author has hybrid records only. This was bred in St. James's Park in 1930, and by M. Delacour in France in 1932. The Glossy Ibis was bred at the Zoological Gardens in 1895, and Peale's Parrot Finch in 1912.

This useful pamphlet can be obtained from Dr. Hopkinson (Wynstay, Balcombe, Sussex) if the price (2*s.* 6*d.*) is enclosed and the word RECORDS added to the address on the envelope, to ensure attention.

D. S-S.

CORRESPONDENCE, NOTES, ETC.

BENGALESE HATCHING PARROT FINCH EGGS

Perhaps the following will interest our members.

I returned from a holiday on 11th July, just in time to see a Blue-headed Parrot Finch hen die a few hours after my arrival. The following day I saw the cock Parrot Finch fly from a nest in an old hat each time I passed the aviary, so I decided to examine the nest, where I found four eggs. These I removed and kept in bran, turning them daily, if I remembered, until I had a foster hen to sit them. Eleven days elapsed before a pair of Bengalese nested. These four eggs were placed under the Bengalese when she had laid two eggs, afterwards removing any further eggs laid by her. To my amazement one Parrot Finch egg hatched out of the four on 4th August. This youngster left

the nest on 24th August, a fine healthy bird. This baby was pecking and almost feeding itself the following day, and now it is a fine strong bird.

The amazing part is that the germ in the egg from so small a bird could retain its vitality and hatch after being kept so long, more especially as the weather was very warm at this period. The first point is, had these eggs been previously sat on, considering the cock bird left the nest each time the aviary was passed, which goes to show that incubation had probably commenced before the hen went sick, and secondly the fifth egg was discovered upon removing the hat later on, which is the complement of eggs that my Parrot Finches have always laid. This would point to the fact that incubation had probably commenced.

Motto: Don't always destroy eggs should an accident happen.

P. W. Teague.

GAPES AND ITS TREATMENT

I have been much interested to see the good results obtained by Mr. Ezra in using " Kur-ide " as a cure for gapes in his Starlings. For years I had the same trouble at Clères, loosing practically all the young Starlings of different species a few days after they left the nest, so much so that I have long given up their breeding. Also adult Spreos and Royal Starlings often succumbed to the disease.

This year we have been free from the kind of gape-worms that affect game birds and passerine birds, but we had, as usual, some cases of the Waterfowl gapes, which are caused by a different worm, although nearly allied species, young Geese, Sheld-ducks, and Tree-ducks being affected. We tried on them the treatment recommended some years ago for small birds by Dr. C. Arnault in *l'Oiseau*, that is to say that we injected into the wind-pipes of the birds a small quantity of " Aniodol interne ", a strong disinfectant extracted from garlic, which can be purchased from any French chemist's. For small birds, a medical syringe with a special smooth-ended needle must be used, and it is not at all easy to manage, but with Waterfowl and game

birds, even with young chicks, it is quite simple to use an ordinary medical glass dropper, the end of which is introduced a few millimetres deep into the windpipe. The opening of the windpipe, at the base of the tongue, can easily be brought forward by means of a rubber band or a small piece of smooth wire. According to the size of the bird treated, from 6 to 20 drops are so sent down the windpipe.

We found that every time it saved the life of the bird, which, after a few hours, seemed to have completely recovered. However, one or two injections may be necessary, as the gape-worm eggs which may exist in the system of the bird have perhaps evolved and penetrated the windpipe again. This cure so far has proved quite effective, and no accident whatever need be feared.

J. DELACOUR.

SOME BIRD NOTES

Ten years ago I bought a number of Grenadier Weaver birds from the late Mr. J. D. Hamlyn. A short time after this purchase a rat (or I think it must have been an old rat with young ones) got into my aviary and killed twenty-three foreign birds, including some of the Weavers ; another Weaver had one wing nearly torn off. I very carefully cut the wing off, and it made a good recovery, came into colour, and was a very tame bird. It has just died, having lived ten years with only one wing. It came into full colour each spring.

I sent two of these Weavers to a friend, and these were still living, in full colour, a short time since.

Two Parrots came into my possession some years ago, in rather a strange way. I received a letter from a girls' orphanage in south London, saying that a Parrot had flown into one of their open windows, and asking if I had lost one or knew of anyone who had.

I called and saw a very fine Blue-fronted Amazon tied by one leg with a piece of string to one of the forms in the schoolroom. Some of the girls had tried with sticks and brooms to drive it out of doors, but Pollie refused to go, realizing perhaps that this was an orphanage!

I took the bird home, it was a beautiful bird, very tame, and a good talker. It lived in my aviary for several years.

The other Parrot was brought to me by a working man who lived near here. He was feeding his chickens one morning and was surprised to see the Parrot fly down and feed with them.

He asked me to purchase the bird. I said I would try to find the owner first, but we did not succeed in this. It was a beautiful cock Alexandrine Rock Parrot, and proved to be one of the tamest birds I ever had.

I received a letter a short time since from my brother in south-west Texas, saying that a pair of the smallest kind of Humming Birds had built a nest in a cluster of blue rose-trees in the garden near the sleeping porch which I occupied on the two occasions when staying at his house. I am hoping to hear further about the nesting of these interesting birds.

JAMES B. HOUSDEN.

THE BREEDING OF VIOLET-EARED WAXBILLS

The full reference to the breeding of these Waxbills in Germany mentioned by a South African member in our August number (p. 199) is a long article in the German periodical devoted to foreign bird culture, *Vögel Ferner Länder*, Heft i, Band vi (1932), p. 24, in which the successful breeder, Herr Thiess, of Zwenkau, gives a full account of the event.

After several failures in the early summer of 1931 in which the birds got as far as young hatched but dying in the nest, their owner finished the season with three young reared from two broods (apparently from two pairs), and writing at the end of January, 1932, describes the three as one cock and two hens all fully coloured and almost exactly like their parents. The whole account is well worth study in spite of being difficult to read—too difficult in fact for me—and for its translation I am indebted to Mr. A. E. Daniels.

It would be interesting to discover who was actually the first to succeed, Herr Thiess or one of the South African aviculturists mentioned in the note, to which I refer above ? Perhaps one of them will let us have particulars and dates of his success.

E. H.

THE PARROT IMPORTATION BAN

At a recent meeting of the Council of the Avicultural Society, the Hon. Secretary was requested to write to the Ministry of Health, asking whether steps could not be taken to remove, or at least modify, the Regulations at present in force prohibiting the importation of Parrots into Great Britain. The following reply was received :—

MINISTRY OF HEALTH,
WHITEHALL, S.W. 1.
3rd November, 1932.

Madam,

PARROTS (PROHIBITION OF IMPORT) REGULATIONS, 1930

I am directed by the Minister of Health to refer to your letter of the 24th ultimo, addressed to Dr. Sturdee, and to state that the whole question was recently considered by the Psittacosis Commission appointed by the Office International d'Hygiene publique. The Permanent Committee of the Office International approved the report of the Commission at its Session on the 3rd May last and decided in all the circumstances to advise Governments to maintain the existing provisions for the present. The matter will be reviewed in 1934 in the light of information obtained.

I am, Madam,
Your obedient servant,
T. LINDSAY.

OBITUARIES

HERBERT LEONARD SICH

With very great regret we have to record the death of Mr. H. L. Sich, which took place at his home in Worthing on 27th October. Mr. Sich joined the Society in 1902 and has been a regular contributor to our Magazine ever since. He was a very keen aviculturist and a careful observer of the habits of his birds, and his articles, two of which appear in the present number, were always of very great interest. As late as 23rd October, four days before he died, the writer received the following letter, together with the two articles referred to :—

"I send you some copy which may be useful. Another failure was with these beautiful little Indian Porphyrios. They were out all the winter, as it was mild I did not trouble. Then I got laid up and the frost came. When I was about again I found one, the hen, had got all the toes of one foot frost-bitten, rendering mating difficult and resulting in four out of five eggs being infertile; they let the one chick die in trying to hatch out the other eggs. I found it dead with the hind-quarters pecked about, they may have killed it themselves. It was covered with black down, the beak whitish with curious black stripes like a dog's muzzle. Both birds incubated about twenty days. They paired again but did not lay. They seemed quite harmless to small birds and their nests."

FRANK FINN, B.A.

We much regret to have to record the death, which took place on 1st October, of Mr. Frank Finn, who had been an Honorary Member of our Society for many years, and edited this Magazine in 1909. Born in 1868 he had devoted his life to the study of Natural History. In 1892 he took part in a collecting expedition to East Africa, and in 1894 was appointed Assistant Superintendent of the Indian Museum, Calcutta. In the following year he became Deputy Superintendent of that Museum, a post he retained until 1903. He edited the *Zoologist* from 1915 to 1916. He was the author of a number of popular natural history books as well as scientific papers. Among the former may be mentioned *Fancy Waterfowl* (1900); *Fancy Pheasants* (1901); *Birds of Calcutta* (1901); *Ornithological and other Oddities* (1907); *Birds of the Countryside* (1907); *Pets and How to Keep Them* (1907); *Wild Beasts of the World* (1908–9); *Talks about Birds* (1911); *Wild Animals of Yesterday and To-day* (1913).

In recent years he had turned his attention to poetry and published *Circe's Worshippers and other Poems* (1923) and *The Masque of Birds and other Poems* (1926). In 1909, in conjunction with Mr. Douglas Dewar, he published *The Making of Species*.

THE LATE WM. SHORE-BAILY

Mr. Shore-Baily, whose death was reported in the October number, was a keen bird-lover from his early youth. At the age of 23 he went to California where, in addition to duck-shooting, he had an opportunity

of observing many birds that were entirely new to him. On returning to England and engaging in business he was unable to do much travelling, except purely on business, for some time, but subsequently he was able to pay visits to Norway, Brazil, Holland, Spain, France, and the Canaries, on all of which he took the keenest interest in studying the birds. In 1910 he commenced keeping birds in captivity and he joined the Avicultural Society in 1920. His large garden at Westbury was well suited for the construction of aviaries of the kind he specially liked—very large wired-in enclosures through which streams flowed and vegetation grew luxuriantly and where his birds would be in practically a state of nature. Several such aviaries were built and their success is proved by the fact that he was awarded no less than thirty-six medals for breeding foreign birds for the first time in the United Kingdom. At one time he had nearly a thousand birds in outdoor aviaries. Some would disappear and be almost forgotten when, one day, the hidden nest, containing eggs or young birds, would be discovered amidst the dense foliage. Often a strange bird would be observed and its identity not be discovered until careful watching showed it to be the offspring of some bird whose nest was not suspected.

Mr. Shore-Baily was very interested in the eggs of birds, especially those of the Waders and the Birds of Prey of which he owned a valuable collection.

THE SOCIETY'S MEDAL

It is proposed to award Medals in the following cases, but if any member or reader should know of a previous instance it is requested that the Honorary Secretary be informed at once :—

Mr. G. H. Gurney, for breeding *Bambusicola thoracica*, reported in the September number.

Mr. Alfred Ezra, for breeding *Bambusicola fytchii* and *Sturnia nemoricola*, reported in the present number.

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DECOUX, A. ; Géry-près Aixe, Hte. Vienne, France. (April, 1917.)

DELACOUR, JEAN, F.Z.S. : Clères, Seine Inf., France. (April, 1916.)

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DIRECTOR, THE; Zoological Museum, Tring, Herts. (1912.)

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DRASDO, FRANK G.; 728 Beverley High Road, Hull. (Jan., 1930.)

DREWITT, FREDERIC DAWTREY, M.A., M.D., F.R.C.P., F.Z.S.; 14 Palace Gardens Terrace, Kensington, W. 8. (May, 1903.)

DUNCKER, Dr. HANS; 22 Wernigeroder Strasse, Bremen. (April, 1930.)

DUNLEATH, The Lady; Ballywalter Park, Ballywalter, Co. Down, Ireland. (August, 1897.)

DUNMORE, OSCAR E.; Saxonholme, 198 Oadby Lane, Wigston Magna, Leicestershire. (Oct., 1922.)

DUNSTER, Captain J. E.; The Laurels, Golden Manor, Hanwell, W. 7. (July, 1930.)

DUVEEN, Mrs.; Broadway, Limpsfield, Surrey. (Sept., 1927.)

DUYZEND, W. C.; Koppelwig 35, Huize, " Casarca ", Zeist, Holland. (March, 1927.)

EDWARDS, Mrs. A. E.; Three Elms, Kippington, near Sevenoaks, Kent. (Jan., 1925.)

ELLIOTT, F. S.; 31 Kelvin Road, Ipswich, Suffolk. (Nov., 1925.)

ELPHICK, GEORGE; 118 Harley Street, W. 1. (April, 1826.)

ELWES, Mrs. ROBERT; Little Congham, King's Lynn, Norfolk. (Dec., 1926.)

ENEJELM, C. AF.; Osterbrogade 42, Copenhagen, O. Denmark. (May, 1931.)

ENGLISH, Dr. W. L., M.B.; High Street, Haslington, Crewe. (Oct., 1931.)

EVANS, G.; 85 Parliament Hill Mansions, N.W. 5. (April, 1926.)

EVANS, Miss JOAN; 8 South Eaton Place, S.W. 1. (Jan., 1929.)

EVANS, R. M.; Inglewood, Ratcliffe Road, Leicester. (March, 1927.)

EUSTACE, C. H.; c/o P.O. Box 252, Shanghai, China. (Feb., 1927.)

EZRA, ALFRED, O.B.E., F.Z.S., M.B.O.U.; (*President*), Foxwarren Park, Cobham, Surrey. (1912.)

EZRA, DAVID, Sir, Kt., F.Z.S., M.B.O.U.; 3 Kyd Street, Calcutta, India. (June, 1912.)

FABIAN, CYRIL ERIC; 29 Meadowcroft Road, Palmers Green, N. 13. (March, 1930.)

FERGUSON, A. B.; 22 Duke Street, Kilmarnock. (April, 1931.)

FETHERSTONHAUGH, Mrs.; (April, 1930.)

FIELD, Captain H. E. B.; Olinda, Bridge Road, Worthing, Sussex. (Nov., 1930.)

FILLMER, H. R.; Oakfield, Hurst Road, Hassocks, Sussex. (*Orig. Mem.*)

FINN, FRANK, B.A., F.Z.S.; c/o Grindley & Co., 54 Parliament Street, S.W. 1. (*Hon. Mem.*)

FOOKS, F. G.; c/o Mon. J. Delacour, Chateau de Clères, Seine Inférieure, France. (Jan., 1926.)

FRAZER, ALFRED J.; Old Mill Gardens, Wannock, Polegate, Sussex. (March, 1930.)

FROST, WILFRED; c/o Zoological Society, Regent's Park, N.W. 8. (July, 1908.)

FULLER, Capt. BERNARD J.; Oakfield, Wokingham, Berks. (Sept., 1928.)

FURNER, A. C.; Oakdene, Whitaker Road, Derby. (Oct., 1929.)

GAMBLE, Miss KATHLEEN A.; 17 Park Hill, Ealing, W. 5. (March, 1930.)

GANGULI, S., C.M.Z.S.; Superintendent Zoological Gardens, Alipore, Calcutta, India. (June, 1931.)

GARCKE, Mrs. C.; Ditton House, Near Maidenhead. (June, 1916.)

GHIGI, il Prof. ALLESSANDRO; Via D'Azeglio, Bologna, Italy.

GIBBINS, WILLIAM B., F.Z.S.; Ettington, near Stratford-on-Avon. (June, 1895.)

GIFFORD, E. W.; 1650 Vista Street, Oakland, California, U.S.A. (Aug., 1927.)

GLADDING, WALTER, F.R.H.S., N.R.S.; Abbotsford Gardens and Aviaries, Cuckfield Road, Burgess Hill, Sussex. (Dec., 1926.)

GLENISTER, A. G., F.Z.S., M.B.O.U.; The Barn House, East Blatchington, Seaford. (June, 1928.)

GLOVER, PERCY H.; Broadlands, Fareham, Hants. (June, 1931.)

GODDARD, H. E.; Birchcroft, Fetcham, near Leatherhead. (Feb., 1899.)

GODDARD, Mrs.; Fernham House, Faringdon, Berks. (Feb., 1923.)

GOLDER, H. G.; Hon. Secretary and Treasurer Norwich Alliance All England C.B.d., 37 Crown Road, Norwich. (June, 1931.)

GOODBODY, Mrs.; 11 Chelsea Embankment, S.W. 3. (July, 1929.)

GOODHAND, H.; Ashton, Dudley Street, Grimsby. (June, 1929.)

GOODHEART, Commander LEANDER MCCORMICK, R.N.V.R. (Retd.), O.B.E., F.R.G.S.; Langley Park, Hyattsville, Maryland, U.S.A.

GOSSE, Mrs. JAMES; 9 Park Terrace, Park Side, South Australia. (July, 1923.)

GRAINGER, Capt. LIDDELL; Ayton Castle, Ayton, Berwickshire. (Aug., 1927.)

GRAY, HENRY, M.R.C.V.S.; 85 Earls Court Road, W. 8. (June, 1906.)

GREEN, H. BAREHAM; The Godlands, Maidstone, Kent. (June, 1930.)

GREEN, ROLAND, F.Z.S., 84 Elgin Road, Seven Kings, Essex.

GREENWOOD, HENRY R.; The Nook, Cullingworth, Nr. Bradford, Yorkshire. (Nov., 1928.)

GREGORY, Mrs.; Melville, Parkstone, Dorset. (Dec., 1901.)

GREY, The Viscount of Falloden, K.G., F.Z.S.; Falloden, Christon Bank, Northumberland. (1913.)
GROSSMITH, Mrs. J. L., F.Z.S.; 10 Lyndhurst Gardens, N.W. 3. (Jan., 1923.)
GROVE, Hon. Mrs. JULIAN. (March, 1917.)
GUBBAY, Mrs. MAURICE; 30 Hill Street, Berkeley Square, W. 1. (Feb., 1928.)
GUILFORD, Miss H.; 23 Lenton Avenue, The Park, Nottingham. (Mar., 1903.)
GUILLEMARD, Lady; 290 St. James Court, Buckingham Gate, S.W. 1. (Jan., 1928.)
GULBENKIAN, C. S.; 51 Avenue d'Jéna, Paris xvi^e^ Paris. (Dec., 1908.)
GURNEY, DANIEL; The Grange, North Runcton, King's Lynn. (July, 1927.)
GURNEY, Miss DIANA; North Runcton Hall, King's Lynn. (July, 1927.)
GURNEY, G. H., F.Z.S.; Keswick Hall, Norwich.

HAGUE, H., The Chancery, Elstree, Herts. (June, 1931.)
HALL, T. WALTER; 6 Gladstone Road, Sheffield. (Nov., 1926.)
HAMERTON, Col. A. E., C.M.G., D.S.O.; 1 Park Village West, Regent's Park, N.W. 1. (Dec., 1930.)
HAMMOND, Capt. E. F. E.; 52 Cheriton Square, Balham. (April, 1928.)
HAMPE, ALEX.; c/o Wm. Meyerink and Co., 66 Szechuen Road, Shanghai, China. (Jan., 1927.)
HANKEY, ALGERNON A., F.Z.S.; Badminton Club, Piccadilly, W. 1. (June, 1923.)
HANSELL, FRANK A. D.; The Croft, Muthill, Perthshire. (May, 1925.)
HARGREAVES, Miss MOLLY; Nazeing Park, Essex. (Nov., 1922.)
HARMAN, Miss KNOBEL, F.Z.S.; 27 Grosvenor Street, Grosvenor Square, W. 1. (Sept., 1928.)
HARVEY, P. T.; Farleigh, 170 King's Road, Westcliff-on-Sea, Essex. (Nov., 1926.)
HARWOOD, Miss K. E.; The Bungalow, 14 Park Lane, Salisbury. (Jan., 1928.)
HASINGER, L. C.; "Whip Poor Willie" Farm, Indiana, Penn., U.S.A. (April, 1928.)
HASTINGS, P. H.; Old Engine House, Milton, Portsmouth. (March, 1930.)
HAWORTH, JOHN T.; 21 Bridge Street, Congleton, Cheshire. (Jan., 1928.)
HERB, THOMAS; Croft House, Old Aylestone, Leicester. (April, 1914.)
HELLEN, G. H. A.; 6 Robartes Road, Bodmin, Cornwall. (Feb., 1928.)
HENRY, WILLIAM; 329 Webster Avenue, Chicago, Ill., U.S.A. (Aug., 1927.)
HEWLINS, Miss MARY R.; The Howe, Saint Ives, Huntingdonshire. (Jan., 1927.)
HEYDON, C.; 5 Corvedale Road, Craven Arms, Shropshire. (March, 1927.)
HEYWOOD, RICHARD; Pentney House, Naboro, Norfolk. (Oct., 1911.)
HIRST, ALBERT; 10 Talbot Avenue, Egerton, Huddesfield. (July, 1923.)
HIRST, ARNOLD; P.O., Box 262 DD, Sydney, N.S.W., Australia. (April, 1929.)
HOBOKEN, J. H. VAN; Rotterdamsche Ryweg, 193 Oberschie, Holland. (Oct., 1927.)
HOLLAS, Mrs. K. E.; Red Scar, Grimsargh, near Preston. (Oct., 1922.)
HOLLOND, Miss GLADYS M. B.; 5 Norfolk Crescent, Hyde Park, W. 2. (March, 1930.)

HOLMES, Mrs. CARL; The Node, Codicote, Hitchin, Herts. (June, 1929.)
HONE, Capt. T. N.; Highways, Bellingdon, Chesham, Bucks. (Nov., 1927.)
HOOD, HARRY S.; Keith Theatre Building, Philadelphia, Pa., U.S.A. (April, 1925.)
HOPKINSON, EMILIUS, C.M.G., M.A., M.B.Oxon., D.S.O., F.Z.S.; Wynstay, Balcombe, Sussex. (Oct., 1906.)
HOPSON, FRED C.; Porchester, Newbury. (March, 1897.)
HORNE, I. S.; 505 Atlanta Street, Altadena, California, U.S.A. (Jan., 1928.)
HORNE, DOUGLAS PERCY; Cornwalls, Feldon Lane, Boxmoor, Herts. (Sept., 1928.)
HORNER, Miss D.; Riccall, York. (Aug., 1931.)
HORSBRUGH, C. B.; Blessington House, Hillsborough, Co. Down.
HOUSDEN, JAMES B.; Brooklyn, 31 Cator Road, Sydenham, S.E. 26. (Orig. Mem.)
HUMPHREYS, WALTER; Whitman House, Shottery, Stratford-on-Avon. (May, 1929.)
HUMPHRIES, WALTER JOHN; The Elm, Goosetrey, Holmes Chapel, Manchester. (Feb., 1931.)
HUNTING, J. CARLTON; Gaybird Pheasantry, Great Missenden, Bucks. (June, 1925.)
HUTCHINSON, Miss ALICE; address unknown. (Aug., 1907.)

IMAI, SETSUJI; 10 Hatagaya, Yoyohata, Toyotama-Gun, Tokyo-Fu, Japan. (Jan., 1928.)
IMPARATI, Dr. Prof. EDOARDO; Ravenna, Italy. (Jan., 1932.)
IRVINE, W. J.; 36 Ann Street, Belfast. (June, 1926.)
IRVINE, Mrs. CHISTINE; Blakeway, Allport Road, Bromborough, Cheshire. (March, 1930.)
ISENBERG, A. H. 286 Atherton Road, Menlo Park, California, U.S.A. (Aug., 1926.)

JABOUILLE, M. P.; Gouvernement de la Cochinchine, Saigon, French Indo-China. (Feb., 1927.)
JACKSON, B.; 33 Church Street, Bingley, Yorks. (Jan., 1926.)
JACKSON, W.; P.O. Box 326, San Mateo, California, U.S.A. (June, 1928.)
JARVIS, Miss I. F.; The Old Manor, Salisbury. (Aug., 1930.)
JENNISON, GEORGE, M.A., F.Z.S.; Barwick Lodge, Disley, Cheshire. (April, 1918.)
JOHNSTON, ROBERT PERCY, Longthwaite Road, Wigton, Cumberland. (March, 1925.)
JONES, H.; 146 Victoria Street, Blackburn, Lancs. (Jan., 1932.)

KEATOR, BEVERLEY, R.F.D.; 12 Westport, Conn., U.S.A. (June, 1924.)
KEMP, ROBERT; 5 Rose Hill, Lostwithiel, Cornwall. (March, 1926.)
KERR, J. ERNEST; Harviestoun, Dollar, Scotland. (March, 1927.)
KEWLEY, Mrs. M. A.; Old Court House, Whitchurch, Aylesbury, Bucks. (Sept., 1910.)
KHALEK, J. A., B.Eng. (Sheff.); Engineer in the Egyptian State Railway Loco. Works, 9 Groundwell Road, Swindon. (Dec., 1931.)
KINGWELL, Miss FRANCES; Beechfield, S. Brent, S. Devon. (June, 1929.)

KIRK, LAURENCE; The Sawyers, Lt. Cornard, Sudbury, Suffolk. (March, 1927.)

KNOBEL, Miss E. MAUD, F.Z.S., M.B.O.U.; 86 Regents Park Road, N.W. 1. (Aug., 1916.) Hon. Mem. (*Hon. Secretary and Treasurer*).

KUNTZ, P.; 289 Edmonton Street, Winnipeg, Manitoba, Canada. (May, 1930.)

LAIDLAY, J. C.; Lindores, Fife, Scotland. (April, 1929.)

LAMBERT, PAUL; Nawton, Yorkshire. (Sept., 1929.)

LANCASTER, Mrs.; Syerscote, Streetly, Staffs. (Dec., 1923.)

LAUDER, P.; 646 Barker Road, The Peak, Hong-kong, China.

LAW, Dr. SATYA CHARAN, F.Z.S., M.B.O.U., M.A., B.L., Ph.D.; 50 Kailas Bose Street, Calcutta. (1919.)

LAWSON, N. F.; 29 Castle Street, Hereford. (Nov., 1930.)

LAX, J. M. S.; Southfield, Crook, Co. Durham. (Jan., 1930.)

LEACH, C. F.; Vale Lodge, Leatherhead, Surrey. (June, 1914.)

LECALLIER, Madame, F.Z.S.; La Villette, Saint-Pierre-lès Elbeuf (S. I.), France. (April, 1918.)

LEGENDRE, M.; 25 Rue La Condamine, 17E, Paris. (June, 1928.)

LEMP, EDWIN A.; Cragnold, Kirkwood, Missouri, U.S.A. (March, 1929.)

LESLIE, CLEMENT M.; 22 Meadowside, Dundee. (Jan., 1932.)

LEWIS, Lieut.-Col. F. E. C.; The Hundridge Game Farm, Great Missenden, Bucks. (March, 1929.)

LEWIS, ARTHUR, F.Z.S.; Brambleside, Ferndown, Dorset. (Jan., 1926.)

LEWIS, E. H.; Box 192, Avalon, Catalina Island, California, U.S.A.. (Sept., 1928.)

LEWIS, GEORGE; Morning Side, Stockton Lane, Rural, York. (March, 1927.)

LEWIS, J. SPEDAN, F.Z.S.; 54 Orchard Court, Portman Square, W. 1. (Sept., 1924.)

LIBRARY INTERNATIONAL INSTITUT D'AGRICOLTURE, Villa Umberto, 1. Rome 10.

LIGHTFOOT, J. G.; The Gables, Upton Heath, Chester. (May, 1927.)

LILFORD, The Lady; Lilford Hall, Oundle, Northants. (Jan., 1898.)

LINDSEY, Dr. H. O.; 527–8 Ricou-Brewster Building, Shreveport, La., U.S.A. (May, 1930.)

LLOYD, Mrs.; Greenmore Hill, Woodcote, nr. Reading. (Jan., 1928.)

LOCKEY, R.; Creighton House, Morpeth. (July, 1927.)

LOCKYER, ALFRED; Tredenham, St. Blazey, Cornwall. (Dec., 1905.)

LODGE, GEORGE, E., F.Z.S., Hawkhouse, Park Road, Camberley, Surrey. (May, 1923.)

LONDONDERRY, The Marchioness of, D.B.E.; Mount Stewart, Co. Down, Ireland. (Feb., 1930.)

LONGDON, Mrs. C. A.; Arreton, Epsom Road, Guildford. (Feb., 1909.)

LOSKY, R. F.; c/o Commision de Irrigacion, Pimentel, Peru. (Jan., 1930.)

LOVELACE, The Countess of; Wentworth House, Chelsea Embankment, S.W.3. (May, 1906.)

LOWE, Rev. J. R.; Watchfield Parsonage, Shrivenham, Berks.

LYNDE, Dr. ROY; Elendale, North Dakota, U.S.A. (June, 1931.)

LYON, Capt. the Hon. MICHAEL: Glamis Castle, Glamis, Forfarshire. (May, 1927.)

McCORQUODALE, Mrs.; Cound Hall, Shrewsbury. (Jan., 1920.)

McCULLAGH, CRAWFORD; Lismara, White Abby, Northern Ireland. (June, 1930.)

McCUTCHAN, WILLIAM A.; 18 Selby Lane, Menlo Park, California, U.S.A. (Oct., 1931.)

McGREDY, SAMUEL; Ashton, Portadown, Northern Ireland. (June, 1928.)

MACK, WILLIAM; 26 Wasley Street, Mt. Lawley, Western Australia. (Feb., 1931.)

MACKAY, K. STEWART; The Manor House, Esher, Surrey.

MACKIE, PHILIP C.; Tudor Cottage, Orville Gardens, Headingley, Leeds. (Jan., 1926.)

MACKLIN, C. H., M.R.C.S., L.R.C.P.; 23 Church Street, Ampthill, Beds. (May, 1923.)

McKECHNIE, Dr. W. D.; 751 Granville Street, Vancouver, B.C., Canada. (Sept., 1931.)

McMILLAN, ARNOLD; Ivy House, New Romney, Kent. (March, 1930.)

McMULLAN, Lady; Stoneleigh, Bangor, Co. Down, Ireland. (April, 1930.)

McLINTOCK, Miss M. H.; The Grove, Catton Grove Road, Norwich. (July, 1927.)

MACONECHY, Mrs. A. C.; 39 Palliser Road, Baron's Court, W. 14. (Sept., 1928.)

MACPHERSON, D.; Home Farm, Powick, Worcester. (Aug., 1931.)

MAIRAUX, E. (Ingénieur Agronome I.A.G.); 41 Rue de la Ruche, Bruxelles, Belgium. (July, 1929.)

MALLAM, D.; Oakfield, Station Road, Redhill, Surrey. (May, 1930.)

MALONE, Mrs. M. L'ESTRANGE; West Lodge, Malton, Yorks. (Jan., 1902.)

MALONE, Miss SHELAGH L'ESTRANGE; West Lodge, Malton, Yorks. (Dec., 1931.)

MANCHESTER PUBLIC LIBRARIES; Reference Library, Piccadilly, Manchester. (July, 1913.)

MARESI, POMPEO M.; 36 W. 44th Street, New York, N.Y., U.S.A. (June, 1924.)

MARSDEN, J. W., F.Z.S.; Greylands, Lower Heysham, Lancs. (March, 1914.)

MARSHALL, ARCHIBALD McLEAN, F.Z.S.; Chitcombe, Brede, Sussex. (Jan., 1906.)

MARTEN, L. H., O.B.E., F.Z.S.; Tilton, near Battle, Sussex. (June, 1930.)

MARTIN, A.; Keswick Hall, Norwich. (Oct., 1930.)

MARTIN, G. B.; Ravensdene, Grove Park, Kent. (April, 1930.)

MATSUNAGA, YASUMORI; Kashima-Machi, Fujigun, Shizuoka-ken, Japan. (March, 1928.)

MAXWELL, C. T.; 1 Shardcroft Avenue, Herne Hill, S.E. 24. (Dec., 1908.)

MAXWELL, P. H.; Ebberley Hill, St. Giles, near Torrington, N. Devon. (Oct., 1929.)

MAXWELL-JACKSON, Miss M.; Percy House, Scatton, Knaresborough, Yorks. (Jan., 1913.)

MAYER, F. W. SHAW; "Wulfruna," 88 Concord Road, Homebush, Sydney, Australia. (Aug., 1922.)

MAYNARD, C. GORDON; Springfield, Northaw, Potters Bar, Herts. (Aug., 1928.)

MEADE-WALDO, E. G. B., F.Z.S., M.B.O.U.; Stonewall Park, Chiddingstone, Kent. (Jan., 1895.)

METZGER, C. T.; 6312 So. Ashland Avenue, Chicago, Ill., U.S.A. (1923.)

MILLER, S. P.; Northend, Gloucester Road, Teddington.

MOODY, A. F.; Lilford, Barnwell, Peterborough. (July, 1926.)

MOORE, H.; Chapel Road, Tadworth, Surrey. (July, 1928.)

MOORE, ROBERT T.; Box 28a, Pasadena, California, U.S.A. (July, 1928.)

MORGAN, Miss C. G. LORENT, 12 Cheyne Gardens, S.W. 3.

MORGAN, Mrs. F. LETHABY; 12 Berkeley Square, Clifton, Bristol. (May, 1929.)

MORRISON, A.; The Oaks, Paddockhall Road, Haywards Heath, Sussex. (Jan., 1932.)

MORSE, Dr. CARLTON BRETT, U.S. Navy; U.S. Naval Training Station, Newport, Rhode Island, D.C., U.S.A. (June, 1930.)

MOSS, Mrs. W. E.; The Manor House, Sonning-on-Thames, Berks. (March, 1928.)

MOTTERSHEAD, GEORGE S.; Chester Zoological Gardens, Upton-by-Chester. (Aug., 1929.)

MOUNTAIN, Capt. WALTON; Groombridge Place, Kent. (Feb., 1923.)

MURAT, PRINCE PAUL, F.Z.S.; Chateau de Rocheplatte, par Aulnay-la-Rivière, Loiret, France. (July, 1923.)

MURRAY, Mrs. DEWAR; The Lodge Farm, Toddington, Bedfordshire. (May, 1929.)

NASH, Dr. IRA E.; 1707 Medical Art's Building, Dallas, Texas, U.S.A. (June, 1928.)

NELSON, RICHARD, 735 Holderness Road, Hull. (April, 1925.)

NEWILL, Dr. D. S.; Melcroft, Penna, Pennsylvania, U.S.A. (Oct., 1930.)

NEWMAN, T. H., F.Z.S., M.B.O.U.; Verulam, 46 Forty Avenue, Wembley Park, Middlesex. (May, 1900.)

NEWMARCH, C. T., F.Z.S.; Gamage's Ltd., Holborn, W.C. (Aug., 1915.)

NICOL, HAMISH, F.R.C.S., F.Z.S.; Hillside, Christchurch Road, Hampstead, N.W. 3. (Jan., 1926.)

NICHOLSON, ALFRED E.; Blenheim, Forthview Terrace, Blackhall, Midlothian. (Feb., 1925.)

NICHOLSON, JOHN R.; Edenvale, Weardale Place, Grange Estate, Stockton-on-Tees. (Feb., 1931.)

NORCROSS, HERBERT; Normanhurst, Mount Road, Middleton, Lancs. (March, 1930.)

NORRIS, H. M.; 407 Holloway Road, N. 7. (Oct., 1931.)

OBERHOLSER, HARRY C.; 2805 18th Street, N.W. Washington, D.C., U.S.A. (Oct., 1903.)

OGILVIE, Mrs. BRENDA; Bonaly Tower, Colinton, Midlothian. (May, 1927.)

ORMSBY, Miss E. M.; Belmont Bungalow, Forest Lane, Harrogate. (Nov., 1927.)

OSTREHAN, CLEMENT; Kington Rectory, Worcester. (Jan., 1928.)

OTAKI, J. T.; Nippon, 48 Pembroke Road, Seven Kings, Essex. (April, 1928.)

PACKER, GEORGE F.; 38 Croydon Avenue, Croydon, Sydney, Australia. (April, 1925.)

PAINTER, K. V.; 3240 Fairmont Boulevard, Shaker Heights, Cleveland, Ohio, U.S.A. (April, 1926.)

PALMER, G. E., F.Z.S.; 83 Park Street, Camden Town, N.W. 1. (March, 1926.)

PAM, Major ALBERT, F.Z.S.; Wormleybury, Broxbourne, Herts. (Jan., 1906.)

PARKER, WINDSOR D.; The Grange, Woolpit, Suffolk. (March, 1930.)

PASS, GERALD V. DE; The Kennels, Satwell, near Henley-on-Thames. (April, 1930.)

PATRICK, LEON, M.D.; Smith Grote Building, Orange, California U.S.A. (Dec., 1926.)

PATTON, J. V.; Hollister, California, U.S.A. (Oct., 1930.)

PEARSE, Mrs. A. A.; Channel View, Bembridge, Isle of Wight. (May, 1929.)

PEART, Miss; Edgarley, Broomfield Avenue, Palmers Green, N. 13. (March, 1927.)

PEMBLETON, THOMAS; Sudbury Aviaries, 120 Watford Road, Wembley, Middlesex. (March, 1930.)

PENROSE, FRANK G., M.D., F.Z.S., M.B.O.U.; Woodbury, 9 Grove Road, Eastcliff, Bournemouth. (Dec., 1903.)

PERREAU, Mrs. G. A.; (Sept., 1916.)

PETERSON, Mrs.; Applehill, Kelling, near Holt, Norfolk. (July, 1929.)

PHILLIPS, Dr. JOHN C.; Wenham, Mass., U.S.A. (March, 1910.)

PICKFORD, RANDOLPH JOHN; Etherley Lodge, Nr. Bishop Auckland. (Feb., 1903.)

PIERCE, JAMES H.; 1431 Webster Street, Palo Alto, California, U.S.A. (July, 1930.)

PIKE, L. G., F.Z.S.; King Barrow, Wareham, Dorset. (1912.)

PLATH, KARL; 2847 Giddings Street, Chicago, U.S.A. (July, 1924.)

POLTIMORE, Lady; Court Hall, North Molton. (Jan., 1926.)

PORTER, SYDNEY, F.Z.S.; The White Gates, Stenson Road, Derby. (April, 1920.)

PORT, Miss J.; Twisly, Catsfield, Battle, Sussex. (Oct., 1928.)

POTTER, BERNARD E., M.B., M.R.C.S., L.R.C.P., F.Z.S.; 17 Portland Place, W.

POTTER, W. H.; Whetherill, Fitzillian Avenue, Harold Wood, Essex. (July, 1926.)

PRINCETON UNIVERSITY LIBRARY; U.S.A.

PROCTER, Mrs.; Cullecoats, The Ridgeway, Asten Wood, Gerrard's Cross. (Sept., 1926.)

PURVIS, Mrs. C. J.; West Acres, Alnwick, Northumberland. (Oct., 1920.)

PYCRAFT, W. P., A.L.S., F.Z.S., M.B.O.U., etc.; British Museum (Nat. Hist.), Cromwell Road, S.W. 7. (Nov., 1904.) (*Hon. Mem.*)

PYMAN, Miss E. E.; West House, West Hartlepool. (June, 1919.)

QUINCEY, R. S. DE Q.; The Vern, Bodenham, Hereford. (April, 1913.)

RATTIGAN, Capt. G. E.; 6 Hyde Road, Paignton, S. Devon. (Aug., 1908.)

REEVE, Capt. J. S., F.Z.S.; Leadenham House, Lincoln. (March, 1908.)

REVENTLOW, AXEL; Zoological Garden, Kobenhavn F., Denmark. (Jan., 1928.)

RHEAM, G. W.; Yewhurst, Freshfield, Liverpool. (March, 1928.)

RICHARDS, H.; 11 Mount Pleasant, Redruth, Cornwall. (March, 1929.)

RIEVELEY, JOHN W.; St. Oswald's Gate, Fulford, York. (June, 1929.)

ROBARTS, Captain G.; Lillingstone-Dayrell House, Buckingham. (July, 1930.)

ROBERTS, H.; Bagatelle, Market Harborough. (Aug., 1927.)

ROBERTS, Miss IDA; Beaumaris, Montpelier Street, Hobart, Tasmania. (Jan., 1923.)

ROBINSON, Miss ELSIE; Oatlands, Camberley, Surrey. (Sept., 1929.)

ROBINSON, JOHN H.; 23 Cavendish Street, Ramsgate. (Sept., 1927.)

ROGERS, H. E., F.Z.S.; Zoological Park, Emswood Road, Mossley Hill, Liverpool. (June, 1919.)

ROGERS, Col. J. M., D.S.O., F.Z.S., M.B.O.U. (late Royal Dragoons); Riverhill, Sevenoaks. (April, 1907.)

ROGERS, Mrs.; Keston, Sea Road, Barton-on-Sea, Hants. (Feb., 1925.)

ROOPER, Mrs. F.; 11 Maze Hill, St. Leonard's-on-Sea. (Aug., 1924.)

ROTHSCHILD, JAMES DE; 46 Park Street, W. 1. (March, 1923.)

ROTHSCHILD, LIONEL DE; 18 Kensington Palace Gardens. (Nov., 1913.)

RUDKIN, FRANCIS H.; R.I., Box 31, Fillmore, California, U.S.A. (May, 1929.)

RUMSEY, LACY; 23 Rua de Serpa Pinto, Villa Nova de Gaya, Oporto, Portugal. (April, 1919.)

RUSSELL, Sir CLAUDE; The Foreign Office, Whitehall. (Jan., 1930.)

RYAN, B. J.; Executive Engineer, P.W.D., Jaipur State, Rajputana, India. (Aug., 1926.)

RYAN, G. E.; 31 Porchester Terrace, Hyde Park, W. (June, 1931.)

RYECROFT, Mrs.; Stratton Rise, Cirencester, Glos. (Oct., 1927.)

ST. QUINTIN, WILLIAM HERBERT, F.Z.S., M.B.O.U.; Scampston Hall, Malton, Yorks. (Orig. Mem.)

SALKELD, WILLIAM; Ravenswood, Kirkoswald, R.S.O., Cumberland. (June, 1922.)

SALTER, FRANK H.; 5 The Crescent, Scarborough. (April, 1930.)

SCHMIT-JENSEN, H. O.; Veterinary Research Officer, Experimental Station, Isle of Lindholm, c/o P.O. Box 42, Stege, Denmark. (Dec., 1927.)

SCHÜTZE, EDUARD; Eystrup, Weser, Germany. (Feb., 1927.)

SCHUYL, D. G.; Kralingscheweg 332, Rotterdam, Holland. (Jan., 1914.)

SCLATER, W. L., M.A., F.Z.S.; 10 Sloane Court, S.W.3. (Aug., 1904.)

SCOTT, Capt. B. HAMILTON; Drayton, Foxhall Road, Rushmere St. Andrew, Ipswich. (1912.)

SCOTT, WALTER S.; "Minden," 23 Eslee Road, North Blundellsands. (April, 1931.)

SCOTT-HOPKINS, Capt. C.; Low Hall, Kirby Moorside, Yorks. (July, 1928.)

SCRIBE, Monsieur RENÉ; 38 Coupure, Gand, Belgium. (Oct., 1925.)

SEPPINGS, Lieut.-Col. J. W. H., F.Z.S.; c/o Lloyd's Bank, Ltd., Cox & King's Branch (K. Section), 6 Pall Mall, London, S.W. 1. (Sept., 1907.)

SETH-SMITH, DAVID, F.Z.S., M.B.O.U.; Zoological Society, Regent's Park, N.W. 8. (Dec., 1894.) (*Editor.*)

SEYMOUR, Mrs. CHARLES ; Kilbees Farm, Winkfield, Windsor Forest. (Aug., 1929.)

SHAKESPEARE, WALTER : Sefton, St. George's Hill, Weybridge. (Aug., 1926.)

SHANNON, Mrs. W. J. ; Upton Grey House, Basingstoke. (1915.)

SHEARING, A. P.; The Aviaries, Foxwarren Park, Cobham, Surrey. (Dec., 1931.)

SHEFFLER, WILLIAM J. ; 4731 Angeles Vista Building, Los Angeles, California, U.S.A. (Oct., 1931.)

SHENSTONE, Mrs. ; Chantry House, Hurstpierpoint, Sussex. (April, 1925.)

SHERBROOK, WILLIAM ; The Old Vicarage, Tadworth, Surrey. (April, 1931.)

SHERRIFF, A., F.Z.S. ; Edge Hill, 8 Ranulf Road, N.W. 2. (March, 1923.)

SICH, HERBERT LEONARD ; Grayingham, Farncombe Road, Worthing, Sussex. (Feb., 1902.)

SILVERTHORNE, HENRY ; 212 Addison Road, Riverside, Ill., U.S.A. (Jan., 1931.)

SILVER, ALLEN, F.Z.S. ; 18 Baneswell Road, Newport, Mon.

SIMPSON, ARCHIBALD ; Stone Gappe, Bardsey, Yorks. (Feb., 1901.)

SIMPSON, H. W. ; 6 Barry Road, Stonebridge, Willesden, N.W. 10. (Nov., 1924.)

SISSONS, H. P. ; 8 Potter Street, Worksop, Notts. (April, 1927.)

SLADE, G. J. ; Shenley, Wilton Crescent, Southampton. (Feb., 1915.)

SLEIGH, A. H. ; The Red House, Woolverstone, Ipswich. (Jan., 1928.)

SMETZ-MONDEZ, Dr. J. G. ; La Hétraie, Genval, Belgium. (Aug., 1924.)

SMITH, A. GORDON ; c/o S. Smith & Sons (Motor Accessories), Ltd., Cricklewood, N.W. (March, 1931.)

SMITH, A. ST. ALBAN, F.Z.S. ; "Greenways," Kingwood, Henley-on-Thames. (Feb., 1929.)

SMITH, H. B. ; 3 Claremont Road, Redruth, Cornwall. (Oct., 1927.)

SMITH, PARIS ; 5 Forest Rise, Whipps Cross, E. 17. (Jan., 1925.)

SMITH, PAUL H. ; 11 Parkhill Road, Hampstead, N.W. 3. (June, 1927.)

SMITH, W. PROCTOR, F.Z.S. ; Moorlands, Broad Road Sale, Manchester. (Nov., 1917.)

SMITH, W. W. ; Cranmer, Dower Avenue, Wallington, Surrey. (April, 1920.)

SNELL, Mrs. NORRIS ; Redcote, Paget Road, Ipswich. (Feb., 1928.)

SOUTHOFF, GEORGE DE, C.M.Z.S. ; 9–11 Via S. Spirito, Florence, Italy. (1921.) (*Hon. Mem.*)

SOUTHPORT CORPORATION, CURATOR OF ; Hesketh Park, Southport. (Jan., 1904.)

SOWDEN, NORMAN ; Kirklands, Menston, near Leeds. (Feb., 1930.)

SPALDING, Mrs. KEITH ; Maryland Hotel, Pasadena, California, U.S.A. (July, 1929.)

SPENCER, HENRY ; Yew Court, Scalby, Yorkshire. (Sept., 1928.)

SPRAWSON, EVELYN ; M.C., M.R.C.S., F.Z.S., Cranford, Welcomes Road, Kenley, Surrey. (June, 1923.)

SPROSTON, Mrs. ; Elm House, Nantwich, Cheshire. (June, 1917.)

SPURWAY, N. B. ; Glenwood, Stoneygate, Leicester. (April, 1923.)

STANDEVEN, J. ; Heath Bank, Halifax. (Sept., 1930.)

STARK, J. ; Woods Cottage, Haddington, Scotland. (Jan., 1924.)

STEFANI, Herr HANS; 48 Kanalstrasse, Neuss-am-Rhein, Germany. (March, 1931.)

STERRETT, H. R.; Roseway, Hoopern Avenue, Pennsylvania, Exeter, S. Devon. (Feb., 1926.)

STOKES, Capt. H. S., F.Z.S., M.B.O.U., M.C.; Longdon, Stafford. (Oct., 1922.)

STOREY, Mrs. A.; Hawling Manor, Andoverford, Glos. (Nov., 1912.)

STROMBI, Miss DORA A.; 26 High Street, Brechin, Angus. (April, 1930.)

STRUBEN, Mrs. F.; 86 Regents Park Road, N.W. 1. (Jan., 1923.)

SUGGITT, ROBERT; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903.)

SUMMERSKILL, C. C.; 19 Alma Road, Winton, Bournemouth. (March, 1925.)

SUTCLIFFE, ALBERT, F.Z.S.; Beechfield, Grimsby. (Feb., 1906.)

SWAN, Miss MARGARET; 27 Cavendish Avenue, St. James's Park, Harrogate. (June, 1930.)

SWEETNAM, Rev. J. E.; The Vicarage, Taunton. (Feb., 1931.)

SYKES, JOHN; Home Park Poultry Farm, Musselburgh, Midlothian. (Jan., 1912.)

SYMES, IVER T. J.; Bridge House, Tadley, Hants. (July, 1930.)

TAKANO, T. Z.; Koyama, 28 Asagaya, Soginamimachi Toyotamagun, Tokyo-fu, Japan. (Jan., 1921.)

TAKA-TSUKASA, PRINCE NOBUSUKE, F.Z.S.; Kamimeguro, Meguro, Japan. (Feb., 1914.)

TALBOT-PONSONBY, C. G.; Glebe House, Lindfield, Hayward's Heath, Sussex. (May, 1927.)

TANNER, Dr. FRANK L.; Vanvert House, Guernsey. (Jan., 1914.)

TARONGA ZOOLOGICAL PARK TRUST; Mosman, Sydney, Australia. (Aug., 1913.)

TAVISTOCK, The Marquess of, F.Z.S.; The Place House, Peasmarsh, Rye, Sussex. (1912.)

TEAGUE, P. W.; The Knoll, Kilpeck, near Hereford. (June, 1930.)

TENNANT, Hon. STEPHEN; Wilsford Manor, Salisbury, (April, 1926.)

TESCHEMAKER, W. E., B.A.; Ringmore, Teignmouth, Devon. (May, 1904.)

THOM, ALFRED A.; Whitewell Lodge, Whitchurch, Salop. (June, 1913.)

THOMAS, F. E.; "Edendale," Creswick Road, Springfield Park, Acton, W. 3. (Oct., 1931.)

THOMASSET, BERNARD C., F.Z.S.; Seend, Near Melksham, Wilts. (July, 1896.)

THOMSON, Dr.; Bankstown, near Sydney, Australia. (Jan., 1926.)

THOMPSON, Mrs. A. C.; Glaisdale, Ely, Cambs. (Dec., 1924.)

THOMPSON, Capt. G. W.; Ardwell, Steel Cross, Crowborough. (March, 1930.)

THORNTON, JOHN ROBERT; 9 Moorhead Terrace, Shipley, Yorkshire. (July, 1930.)

THORPE, D. LOSH, M.B.O.U., F.Z.S.; The Aviaries, Loshville, Etterby Scaur, Carlisle. (Aug., 1930.)

TODD, HORATIO, J.P., M.P.S.I., F.C.S.; Bromleigh, Neill's Hill, Belfast. (Aug., 1924.)

TOMLINSON, MALCOLM R.; Shepherd's House, Inveresk, Midlothian. (April, 1913.)

TOWNSEND, S. M.; 3 Swift Street, Fulham, London, S.W. (*Orig. Mem.*)

TRANSVAAL MUSEUM; The Director, Transvaal Museum, Pretoria. (Jan., 1921.)

TRAVERS, Mrs. J.; Windmill Cottage, Mayfield, Sussex. (Dec., 1903.)
TURNER, A. L.; 476 Pitt Street, Sydney, N.S.W., Australia. (Oct., 1930.)
TURNER, H. B.; Malverleys, near Newbury. (April, 1928.)
TURNER, HERBERT J.; 2 Rydon Lane, Countess Wear, near Exeter. (Jan., 1925.)

UPPINGHAM SCHOOL; the school library, the Old School House, Uppingham. (Nov., 1920.)

VAHLE, W. RODMAN; 315 W. Madison Street, Chicago, Ill., U.S.A. (March, 1931.)
VALENTINE, ERNEST; 7 Highfield, Workington. (May, 1899.)
VENNER, Rev. P. K.; Gosfield Vicarage, Halstead, Essex. (April, 1923.)
VENNING, H. C.; Willett, Bicknaller, Taunton. (Jan, 1927.)
VIERHELLER, GEO. P.; St. Louis Zoological Park, St. Louis, Mo., U.S.A. (March, 1928.)
VILLIERS, Mrs. T. L.; Steuart House, Colpetty, Colombo, Ceylon. (Feb., 1927.)
VIVIAN, Hon. Mrs.; Villa les Domes, Rue de Lilacs, Monte Carlo, France. (Aug., 1928.)
VLASTO, Mrs.; Binfield Park, Bracknell, Berks. (March, 1927.)
VOIGT, WALTER; 13, Feodorastrasse, Jena, Germany. (Jan., 1926.)
VROOM, Mrs. DOUGLAS; 555 South Wilton Place, Los Angeles, California, U.S.A. (Jan., 1929.)

WALKER, Miss H. K. O.; Chesham, Bury, Lancs. (Feb., 1895.)
WALL, Mrs.; Meadowside, Marlborough, Wilts. (Nov., 1924.)
WATSON, A. D.; c/o Feather Hill Ranch, 1595 East Valley Road, Santa Barbara, California, U.S.A. (June, 1930.)
WATTS, C. H.; Kilrenny, 94 Blinco Grove, Cambridge. (Nov., 1931.)
WAUD, Capt. L. REGINALD, F.Z.S., M.B.O.U.; Bradley Court, Chieveley, near Newbury. (May, 1913.)
WAXMAN, A. E. WRIGHT DE BERRI; Maitai, Murray Road, Beecroft, N.S.W.
WEBB, C. S.; Beechcroft, Sellindge, near Ashford, Kent. (March, 1928.)
WEBB, PATRICK B.; Barney's Brae, Randalstown, Co. Antrim, N. Ireland. (Aug., 1929.)
WEBSTER, M. D.; Hazelgrove, Inverbervie by Montrose. (April, 1931.)
WESTON, DENYS, F.Z.S.; 19 Strand, Dawlish, S. Devon. (Feb., 1926.)
WESTMACOTT, Lady; 6 rue Bel Respiro, Monte Carlo, Principanti de Monaco. (Dec., 1928.)
WHIPHAM, Mrs. U. F., F.Z.S.; 34 Westbourne Park Road, W. 2; and St. Loyes, Heavitree, Exeter. (July, 1921.)
WHITE, JOHN YORK; Celandine, 138 Verdant Lane, Catford, S.E. 6. (Jan., 1925.)
WHITFIELD, DAVID; Sycamore Vale, Ivy Lane, Macclesfield. (Jan., 1931.)
WHITLEY, HERBERT, F.Z.S.; Primley Hill, Paignton, S. Devon. (Sept., 1923.)
WHITTINGHAM, W. NEVILLE; Stonefall Hall, near Harrogate. (Feb., 1928.)
WIGLEY, S. J.; Box 56, Palos Verdes Estates, California, U.S.A. (June, 1930.)

WILDEBOER, Dr. H. G.; Burnbrae, Holderness Road, Hull. (1924.)
WILKINS, A.; Rendcombe, Chesham, Bucks. (April, 1930.)
WILLCOCK, JOHN; Weston Coyney, Stoke-on-Trent. (April, 1931.)
WILLFORD, HENRY; Sans Souci, Havenstreet, Ryde, Isle of Wight. (Nov., 1907.)
WILLIAMS, SIDNEY, F.Z.S.; 19 Beechdale, Winchmore Hill, N. 21. (Oct., 1910.)
WILLIAMSON, T. F. M.; 339 McGee Avenue, Mill Valley, California, U.S.A.) (Aug., 1917.)
WILSON, AND., F.Z.S.; 233 Argyle Street, Glasgow. (April, 1927.)
WILSON, ERNEST; 21 High Road, Willesden Green, N.W. 10. (March, 1930.)
WILSON, Mrs. MAITLAND; Bagshot Heath, Camberley, Surrey.
WINTER, DWIGHT; Center and Negley Avenue, Pittsburgh, Pa., U.S.A. (1922.)
WINTON, Dr. R. M.; Citrus Exchange Building, Tampa, Florida, U.S.A. (July, 1928.)
WOLF, M. W.; 4 Hartfield Road, Wimbledon, S.W. 19. (Oct., 1931.)
WOOD, Dr. CASEY, F.Z.S.; McGill University Library, Montreal, Canada. (Sept., 1922.)
WOOD, Mrs. MURIEL; 8 Lambolle Road, N.W. 3. (July, 1927.)
WOODWARD, KENNETH M.; Chappaqua, New York, U.S.A. (March, 1915.)
WORKMAN, WILLIAM HUGHES, F.Z.S., M.B.O.U.; Lismore, Windsor Avenue, Belfast. (May, 1903.)
WORMALD, HUGH, F.Z.S.; Heathfield, East Dereham, Norfolk. (Dec., 1904.)
WRIGHT, R. N.; 24 Clinton Road, Redruth, Cornwall. (Feb., 1930.)

ZOOLOGICAL SOCIETY OF PHILADELPHIA; 34th Street, and Girard Avenue, Philadelphia, Penn., U.S.A. (Jan., 1920.)

THE AVICULTURAL SOCIETY OF VICTORIA

List of Affiliated Members

Aisbet, W. J.; Burwood Poultry Farm, Norwood Road, Burwood, Victoria.

Bain, J. A.; 84 Cameron Street, Launceston, Tasmania.

Bell, J. R.; 218 Latrobe Street, Melbourne, C.I., Victoria.

Bickerton, Hugh; 21 Stanley Street, Elsternwick, S. 4, Victoria.

Borbridge, H. M.; Yangarnook, Toolern Vale, Victoria.

Bowman, Dr. A. W.; Homebush Crescent, Hawthorn, E.3., Victoria.

Bray, F. I.; Chief Secretary's Office, Perth, Western Australia.

Clendinnen, Dr. L. J.; (*Hon. Secretary*); 105 Collins Street, Melbourne, C. 1, Victoria.

Cole, F. C.; Barkley Street, Mordialloc, S. 12, Victoria, Australia.

Craig, W.; 8 Elizabeth Street, Melbourne, C. 1, Victoria, Australia.

Cumming, W.; 65 William Street, Melbourne, C. 1.

Davies, Dr. F. L.; High Street, Malvern, S.E. 3, Melbourne.

Donald, Dr. B. P.; Wanacknabeal, Victoria, Australia.

Guest, Mrs. A. G.; St. Ninian's Road, Brighton, Victoria.

Hellman, J.; 137 Murrumbeena Road, Murrumbeena, Victoria.

Jacques, Alan; Balwyn Road, Balwyn, E. 8, Melbourne.

Langdon, W. F.; Hawthorn Road, Caulfield, S.E. 8, Melbourne.

Law, J. L. G.; 306 St. Kilda Street, Brighton, S. 5, Victoria.

Lory, F.; 393 Barker's Road, Kew, E. 4, Victoria, Australia.

Luxton, T.; 329 Glenferrie Road, Malvern, S.E. 4, Melbourne.

Muir, E. H.; Astor House, 108 Collins Street, Melbourne, C. 1, Victoria.

McPherson, W. E.; 43 Mount Albert Road, Canterbury, E. 7, Victoria, Australia.

Moore, —; 375 Upper Heidelberg Road, Ivanhoe, Victoria, Australia.

Nairn, Mr.; c/o Modern Art Co., Field Street, Clifton Hill, N. 8, Victoria.

Niall, K. M.; 125 William Street, Melbourne, C. 1, Victoria, Australia.

Philp, R.; Douglas Street, Malvern, S.E. 5, Victoria.

Picking, Douglas; Dromana, Victoria.

Pittock, C. E.; Geelong Slate Works, Ryrie Street, Geelong, Victoria.

Pleasance, N.; Hopetoun Road, Toorak, S.E. 2, Melbourne.

Pratt, J. C.; Lansell Road, Toorak, S.E. 2, Melbourne, Victoria.

Stobie, Graeme; 405 Collins Street, Melbourne, C. 1.

Tucker, E. R.; 22 Howitt Road, Caulfield, S.E. 7, Victoria.

Vincent, E.; 28 Normanby Avenue, Caulfield, S.E.7, Victoria.

Weppner, S.; 84 St. Georges Road, Elsternwick, S. 4, Victoria.

THE AVICULTURAL SOCIETY OF SOUTH AUSTRALIA (ADELAIDE)

List of Affiliated Members

Bennett, C. E.; Park Terrace, Parkside, South Australia.
Burfield, C. C.; 43 Lynton Avenue, Millswood Estate, South Australia.
Chamberlain, D.; 92 Park Terrace, Wayville, South Australia.
Dunstan, Dr.; Woodville Road, Woodville, Adelaide, South Australia.
Hamilton, Dr. (*President*); Wakefield Street, Adelaide, South Australia.
Harvey, S. (*Hon. Secretary*); St. Austell, Burnside Road, Kensington Gardens, Adelaide, South Australia.
Humble, C. W.; 86 Rundle Street, Adelaide, South Australia.
Kitchen, F. C.; P.O., Box 16B, Broken Hill, N.S.W., Australia.
Lewis, G.; c/o A. & E. Lewis, Pirie Street, Adelaide, South Australia.
Lienau, C. H. A.; Newbury, 23 Victoria Avenue, Unley Park, South Australia.
Minchin, R.; Zoological Gardens, Adelaide, South Australia.
Walter, C. Y.; Kensington Road, Rose Park, Adelaide, South Australia.

THE AVICULTURAL SOCIETY OF NEW ZEALAND

List of Affiliated Members

Allan, G. H.; 14 Bridgeman Street, St. Kilda, Dunedin, N.Z.

Anderson, Mrs. E.; Roseberry Poultry Farm, Birkenhead, Auckland, N.Z.

Auckland City Council; Mr. Griffin, Representative, Auckland War Memorial Museum, Auckland, N.Z.

Bedford, E.; 96 Clonburn Road, Remuera, Auckland, N.Z.

Birdling, F.; Cornwall Park Kiosk, Epsom, Auckland, N.Z.

Black, J.; P.O. Box 102, Dunedin, N.Z.

Bridge, A.; CR. Hill and Moore Streets, Paeroa, N.Z.

Bull, H. B. J.; 1 Erin Street, One Tree Hill, Auckland, N.Z.

Campbell, Mrs. J. P. (*President*); 15 Arney Road, Remuera, Auckland, N.Z.

Carter, E.; c/o Napier Bricks Ltd., Napier, H.B., N.Z.

Clay, E. V.; c/o Messrs. Turnbull & Jones, Wellesley Street, Auckland, N.Z.

Corbet, G. M. (*Vice-President*); c/o J. G. Ward & Co., P.O. Box 183; Invercargill, N.Z.

Crowther, W. J.; Remuera Road, Remuera, Auckland, N.Z.

Forster, R.; 401 Hastings Road, Hastings, H.B., N.Z.

Graveson, T.; 14 Oakland Road, Mt. Eden, Auckland, N.Z.

Henley, A. E.; 66 Victoria Street West, Auckland, N.Z.

Hutchinson, G. Roland (*Hon. Secretary and Treasurer*); 5 Keith Avenue, Remuera, Auckland, N.Z.

Kent, Miss T. R.; 88 Manchester Street, Christchurch, N.Z.

Kinley, W.; c/o Northcote Vehicular Ferry Office, Beaumont Street, Freeman's Bay, Auckland, N.Z.

Lund, G. (*Auditor*); Calliope Road, Devonport, Auckland, N.Z.

Mainland, A.; 29 Hollywood Avenue, Auckland, N.Z.

Mathews, W. N.; 152 Gt. South Road, Remuera, Auckland, N.Z.

McKay, D.; P.O. Box 13, Nelson, N.Z.

Pinfold, Mrs. C. H.; Cr. Victoria and Princes Streets, Hamilton, N.Z.

Potter, S. D.; 53 Sunglen Road, off Dominion Road, Auckland, N.Z.

Pratt, D.; Sharpe Road, Epsom, Auckland, N.Z.

Searle, G.; 43 Virginia Avenue, Eden Terrace, Auckland, N.Z.

Shearer, E.; 18 Allendale Road, Mt. Albert, Auckland, N.Z.

Spencer, Mrs. L. C.; 11 Dilworth Avenue, Remuera, Auckland, N.Z.

Strang, A. R.; Frankleigh Park, New Plymouth, N.Z.

Tattersfield, F.; "Puriri Puke," Allendale Road, Mt. Albert, Auckland, N.Z.

Verran, J., Hauraki Street, Birkenhead, Auckland, N.Z.

Wadham, P.; Chudleigh Estate, Waihou, N.Z.

Young, R.; Tahora Avenue, Remuera, Auckland, N.Z.

Rules of the Avicultural Society

As amended, November, 1930

1.—The name of the Society shall be THE AVICULTURAL SOCIETY, and its object shall be the study of Foreign and British Birds in freedom and in captivity. Poultry, Pigeons, and Canaries shall be outside the scope of the Society. The year of the Society, with that of each volume of the Society's Magazine, which shall be known as *The Avicultural Magazine*, shall commence with the month of January and end on the 31st of December following.

2.—The Avicultural Society shall consist of Ordinary and Honorary Members, and the latter shall be restricted in number to six, and be elected by the Council.

3.—The Officers of the Society shall be elected, annually if necessary, by members of the Council in the manner hereinafter provided, and shall consist of a President, one or more Vice-Presidents, a Secretary, an Editor, a Treasurer, an Auditor, a Scrutineer, and a Council of eighteen members. The Secretary, Editor, and Treasurer shall be *ex officio* Members of the Council.

4.—New Members shall be proposed in writing, and the name and address of every person thus proposed, with the name of the Member proposing him, shall be published in the next issue of the Magazine. Unless the candidate shall, within two weeks after the publication of his name in the Magazine, be objected to by at least two Members, he shall be deemed to be duly elected. If five members shall lodge with the Secretary objections to any candidate he shall not be elected, but the signatures to the signed objections must be verified by the Scrutineer. If two or more Members shall object to any candidate, the name of such candidate shall be brought before the Council at their next meeting, and the Council shall have power to elect or to disqualify him from election.

5.—Each Member shall pay an annual subscription of £1, to be due and payable in advance on the 1st of January in each year. New Members shall pay, in addition, an entrance fee of 10*s.* 0*d.*; and, on payment of their entrance fee and subscription, they shall be entitled to receive all the numbers of the Society's Magazine for the current year.

6.—Members intending to resign their membership at the end of the current year of the Society are expected to give notice to the Secretary before the 1st of December, so that their names may not be included in the "List of Members", which shall be published annually in the January number of the Magazine.

7.—The Magazine of the Society shall be issued on or about the first day of every month, and forwarded, post free, *to all the Members who shall have paid their subscriptions for the year ; but no Magazine shall be sent or delivered to any Member until the annual subscription shall have reached the hands of the Business Secretary or the Publishers.* Members whose subscriptions shall not have been paid as above by the first day in November in any year shall cease to be Members of the Society, but may be re-admitted, at the discretion of the Council, on payment of the annual subscription.

8.—The Secretary, Editor, and Treasurer shall be elected for a term of five years, and, should a vacancy occur, it may be temporarily filled up by the Executive Committee (see Rule 10). At the expiration of the term of five years in every case it shall be competent for the Council to nominate the same officer, or another Member, for a further time of five years, unless a second candidate be proposed by not less than twenty-five Members of at least two years' standing, as set forth below.

In the November number of the Magazine preceding the retirement from office of the Secretary, Editor, or Treasurer, the Council shall publish the names of those members whom they have nominated to fill the vacancies thus created ; and these members shall be deemed duly elected unless another candidate or candidates be proposed by not less than fifteen Members of at least two years' standing. Such proposal, duly seconded and containing the written consent of the nominee to serve, if elected, in the capacity for which he is proposed, must reach the Secretary on or before the 15th of November.

The Council shall also publish yearly in the November number of the Magazine the names of those members nominated by them for the posts of Auditor and Scrutineer respectively.

9.—The Members of the Council shall retire by rotation, two at the end of each year of the Society (unless a vacancy or vacancies shall occur otherwise) and two other Members of the Society shall be recommended by the Council to take the place of those retiring. The names of the two Members recommended shall be printed in the November number of *The Avicultural Magazine*. Should the Council's selection be objected to by fifteen or more Members, these shall have power to put forward two other candidates, whose names, together with the signatures of no less than fifteen Members proposing them, must reach the Hon. Secretary *by the 15th of November*. The names of the four candidates will then be printed on a voting paper and sent to each Member with the December number of the Magazine, and the result of the voting published in the January issue. Should no alternative candidates be put forward, in the manner and by the date above specified, the two candidates recommended by the Council shall be deemed to have been duly elected. In the event of an equality of votes the President shall have a casting vote.

If any Member of the Council does not attend a meeting for two years in succession the Council shall have power to elect another member in his place.

10.—Immediately after the election of the Council that body shall proceed to elect three from its Members (*ex officio* Members not being eligible). These three, together with the Secretary, Treasurer, and Editor, shall form a Committee known as the Executive Committee. Members of the Council shall be asked every year (whether there has been an election of that body or not) if they wish to stand for the Executive, and in any year when the number of candidates exceeds three there shall be an election of the Executive.

The duties of the Executive Committee shall be as follows :—

(i) To sanction all payments to be made on behalf of the Society.

(ii) In the event of the resignation of any of the officers during the Society's year, to fill temporarily the vacancy until the end of the year. In the case of the office being one which is held for more than one year (e.g. Secretary, Editor, or Treasurer) the appointment shall be confirmed by the Council at its next meeting.

(iii) To act for the Council in the decision of any other matter that may arise in connexion with the business of the Society.

The decision of any matter by the Executive to be settled by a simple majority (five to form a quorum). In the event of a tie on any question, such question shall be forthwith submitted by letter to the Council for their decision.

The Executive shall not have power

(i) To add to or alter the Rules;

(ii) To expel any Member;

(iii) To re-elect the Secretary, Editor, or Treasurer for a second term of office.

It shall not be lawful for the Treasurer to pay any account unless such account be duly initialled by another Member of the Executive.

It shall be lawful for the Secretary or Editor to pledge the Society's credit for a sum not exceeding £50.

Should a Member wish any matter to be brought before the *Council* direct such matter should be sent to the Secretary with a letter stating that it is to be brought before the Council at their next meeting, otherwise communications will in the first place be brought before the Executive.

A decision of a majority of the Council, or a majority of the Executive endorsed by the Council, shall be final and conclusive in all matters.

11.—The Editor shall have an absolute discretion as to what matter shall be published in the Magazine (subject to the control of the Executive Committee). The Secretary and Editor shall respectively refer all matters of doubt and difficulty to the Executive Committee.

12.—The Council (but not a committee of the Council) shall have power to alter and add to the Rules, from time to time, in any manner they may think fit. Five to form a quorum at any meeting of the Council.

13.—The Council shall have power to expel any Member from the Society at any time without assigning any reason.

14.—Neither the office of Scrutineer nor that of Auditor shall be held for two consecutive years by the same person.

15.—The Scrutineer shall not reveal to any person how any Member shall have voted.

The Society's Medal

RULES

The Medal may be awarded at the discretion of the Committee to any Member who shall succeed in breeding, in the United Kingdom, any species of bird which shall not be known to have been previously bred in captivity in Great Britain or Ireland. Any Member wishing to obtain the Medal must send a detailed account for publication in the Magazine within about eight weeks from the date of hatching of the young, and furnish such evidence of the facts as the Executive Committee may require. The Medal will be awarded only in cases where the young shall live to be old enough to feed themselves, and to be wholly independent of their parents. No medal can be given for the breeding of hybrids, or of local races or sub-species of species that have already been bred.

The account of the breeding must be reasonably full so as to afford instruction to our Members, and must appear in the AVICULTURAL MAGAZINE before it is published or notified elsewhere. It should describe the plumage of the young, and *be of value as a permanent record of the nesting and general habits of the species.* These points will have great weight when the question of awarding the Medal is under consideration.

In every case the decision of the Committee shall be final.

The Medal will be forwarded to each Member as soon after it shall have been awarded as possible.

The Medal is struck in bronze (but the Committee reserve the right to issue it in *silver* in very special cases) and measures 2½ inches in diameter. It bears on the obverse a representation of two birds with a nest containing eggs, and the words " The Avicultural Society—founded 1894 ". On the reverse is the following inscription : " Awarded to [*name of recipient*] for rearing the young of [*name of species*], a species not previously bred in captivity in the United Kingdom."

The Council may grant a special medal to any member who shall succeed in breeding any species of bird that has not previously been bred in captivity in Europe.