



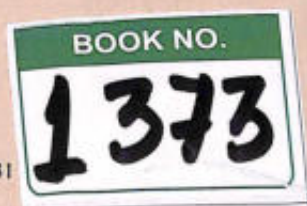
# THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF THE  
AVICULTURAL SOCIETY FOR  
THE STUDY OF BRITISH AND  
FOREIGN BIRDS IN FREEDOM  
AND IN CAPTIVITY

EDITED BY

DAVID SETH-SMITH, F.Z.S., M.B.O.U., C.F.A.O.U., etc.

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# THE AVICULTURAL MAGAZINE

THE JOURNAL OF THE  
AVICULTURAL SOCIETY

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## SCHALOW'S TOURACO

The subject of our coloured plate this month is one of the most beautiful of the genus *Turacus*. Particularly noticeable are the feathers of the front of the crest, which are longer than the others, and inclined to fall forward, to a greater extent even than is shown in the illustration; and each feather has a white tip. The species occurs in Mossamedes and Benguela, extending to the western shores of Lake Tanganyika. Further to the east occurs the very closely allied *T. livingstoni*, in which the feathers of the crest are said to be shorter and the tail greener, while a third, *T. reichenowi*, from the Nguru mountains, is said to have the back and wings bluer than the tail. The recognition of such minor differences is akin to the occupation of splitting hairs, and it is doubtful whether there is any real distinction between these so-called races. Neither *T. schalowi* nor its allied races are often to be seen in captivity, but like the other species of the genus they are amongst the most desirable of aviary birds. Their principal food is fruit and they build an open shallow nest like that of a Pigeon, laying two white eggs. The illustration is not quite as successful as it might be, in that the crest is made to appear too solid in the reproduction.—D. S-S.

## A VISIT TO A GERMAN AVIARY

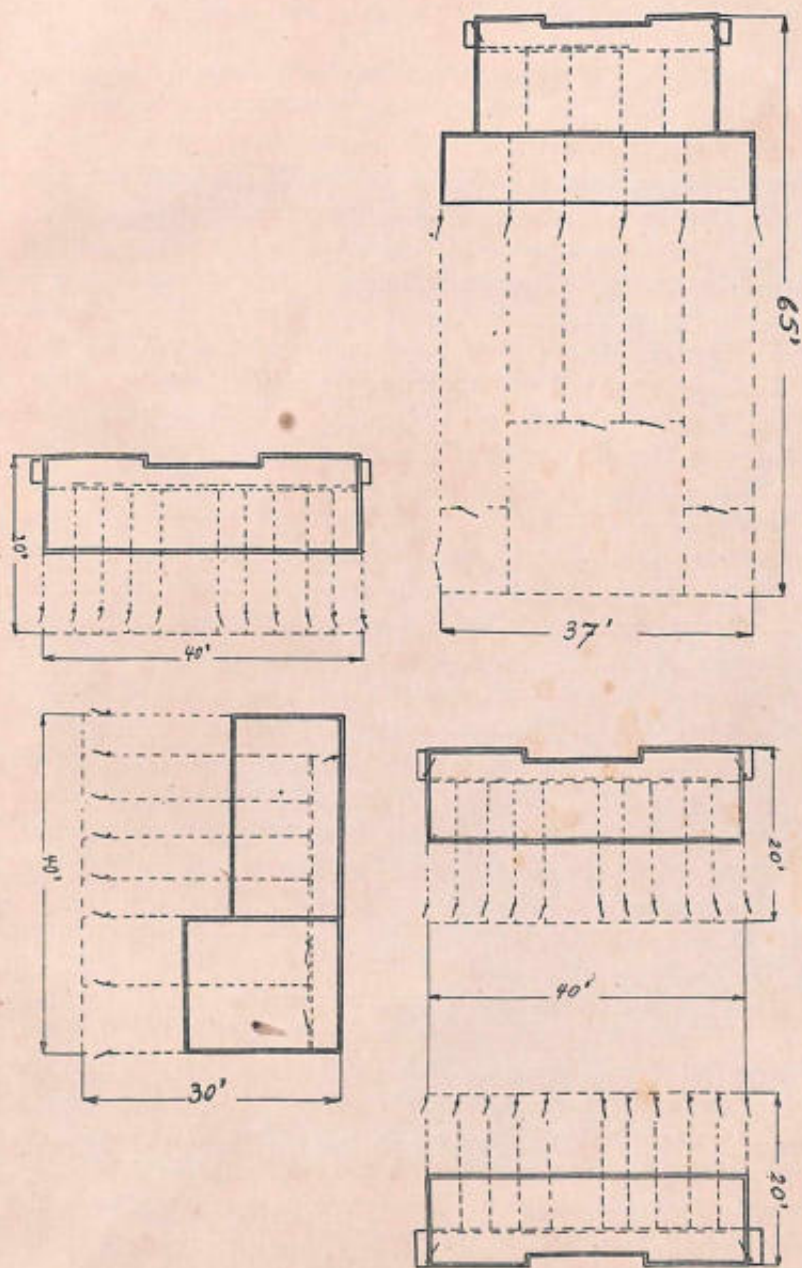
By E. F. CHAWNER

This autumn I carried out a long-desired visit to the Black Forest. While there I received a cordial invitation from Herr Stefani to spend some days at his house and inspect his aviaries.

Naturally I accepted his kind offer and set off the next day for Neuss am Rhein, which is a country town about two hours by rail from Cologne. Herr Stefani, junior, met me at the station and we plunged at once into avicultural talk, for both father and son are equally enthusiastic bird-lovers. We spent the evening looking at bird books and comparing notes on our respective aviaries and birdy experiences.

Herr Stefani's aviaries are in Holzheim, a short railway journey from Neuss. There he has a caretaker and a garden which he and his son cultivate and plant with their own hands. They planned and laid out the aviaries themselves and one or both go every day to feed and tend their birds.

The Pheasant aviary is 56 ft. long by 37 ft. wide by 8 ft. high, and is divided into five compartments, which, when I saw them contained Manchurian Crossoptilons (these are allowed to roam about loose during the day), young White Pheasants, Siamese Firebacks, pure-bred Amhersts, and a magnificent cock *Gallus varius*, very large and highly coloured, whose two hens had respectively laid clutches of seven and nine eggs. The first clutch had just hatched out under a hen seven delightfully healthy, lively chicks, and the second was due to hatch about a week later. Herr Stefani proposes to enter the cock for the Crystal Palace Show, where no doubt he will find many admirers. Another aviary 40 by 30 feet was divided into seven compartments and contained Monaul, Chinquis and Germain's Polyplectron, Horsfields, and a pure bred imported Amherst. Though the flights were rather small all the birds were in the best of health and coming well through the moult. They had good shelters and the flights were amply provided with growing shrubs and grass which the inmates evidently appreciated; the floors of the shelters are thickly covered with river sand from the Rhine which is renewed twice yearly. Since my visit Herr Stefani has obtained hens for the Monaul and Germain's and hopes next year to breed them.



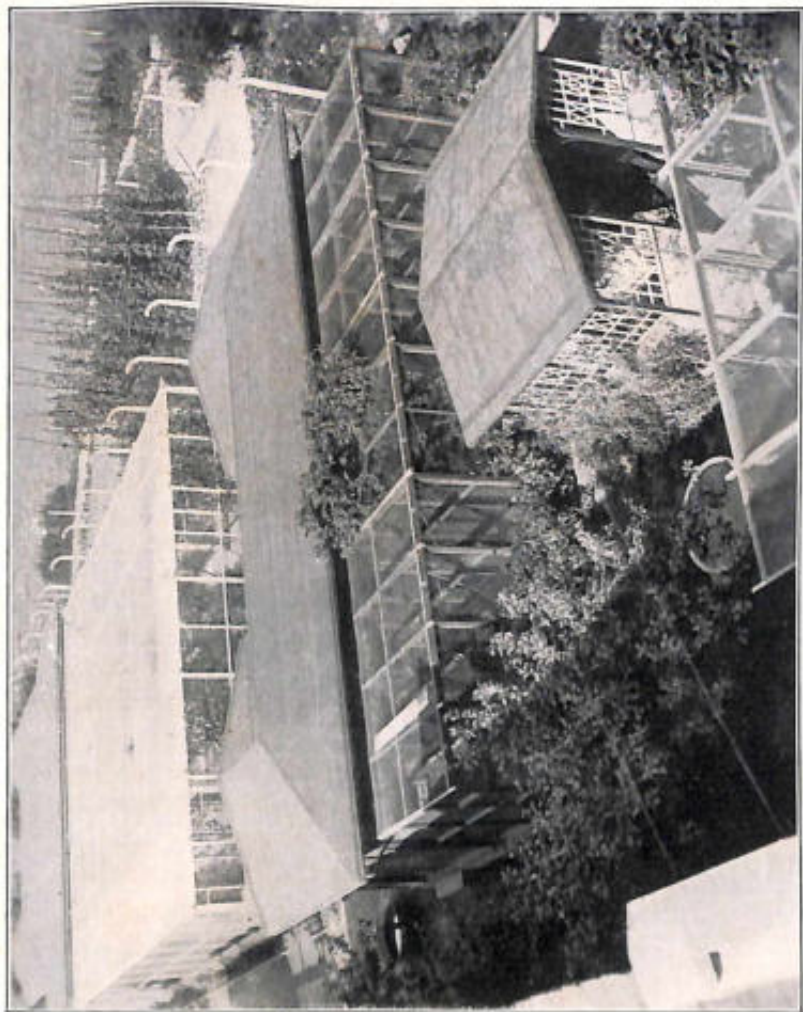
PLAN OF HERR STEPANI'S AVIARIES.

Besides these Pheasants Herr Stefani has a number of Parrakeets and small birds. For these there are three blocks 40 by 30 feet, divided into ten compartments, and another heated one 200 feet in length. When I saw them these contained Blossom-head Parrakeets with three well-grown young birds, numerous Budgerigars, Blue, Cobalt, Apple, Olive, and White—these last took 1st prize in 1926 at the Crystal Palace. Scaly-fronted Weavers, believed to be the only pair in Europe, Fire Finches, Crimson-eared Waxbills, Hooded Siskins, Bib Finches, White-throated Finches, Green Cardinals, Lazuline Buntings, Orange and Napoleon Bishops, St. Helena and Green Waxbills, Tricoloured and Common Parrot Finches, Bicheno's (which bred last year), Diamond Sparrows, Zebra, Long-tailed and Masked Finches, all with nestlings; Madagascar Weavers and a pair of the rare *Vidua splendens*, Jacarini Finches, White Canaries, Common and King Whydahs, Grosbeaks, Masked and Fischer's Love-birds, Chinese Quails with young, and a pair of Shamas. Also a new arrival, *Neorhynchus nasecus*, which is said to be a first importation. These aviaries have electric light and heat and running water. One tap when turned automatically empties all the water pans, and another fills them. The seed is stored in mouse-proof tins and every detail most efficiently thought out. Were it not so it would be impossible for two busy men to attend to all these birds and the garden without help. Every bird has to undergo a month's quarantine before it is allowed to mix with the others, a wise precaution which has amply justified itself.

It was a great pleasure to see so many beautiful and healthy birds, and I felt very grateful to their owners for allowing me to visit them and giving up so much time to showing me round.

We spent an afternoon in the Düsseldorf Zoo. It has very few birds, but I was struck with the number of carnivora which had been bred, particularly as the compartments are so small. The most striking exhibit was a herd of Oxen from Portuguese East Africa, with enormously long horns standing practically erect on their heads. The weight must be tremendous and one wonders what use they can be to the animals.

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A PART OF HERR STEFANI'S AVIARIES AS SEEN FROM AN AEROPLANE.

## COLONIZATION OF *PARADISEA APODA* ON LITTLE TOBAGO

By P. L. GUPPY

### HISTORICAL

Sir William Ingram, the great newspaper proprietor, who owned cocoa estates in Trinidad, conceived the idea of colonizing the Greater Bird of Paradise (*Paradisea apoda*), on the island of Little Tobago. To effect this purpose he was fortunate in securing the services of Mr. Wilfred Frost who, in September, 1909, released twenty-four males and twenty-four females (two females? were later added to this colony) on Little Tobago. A caretaker was left in charge and arrangements made by Mr. Frost for protection and care of the colony after he had accomplished his task.

Sir William Ingram died in 1924 and the island passed to his widow for life; she died the following year. On 28th May, 1928, a deed was drawn up by the heirs of Sir William Ingram conveying the island and the Paradise Birds to the Government of Trinidad and Tobago.

### DESCRIPTION OF LITTLE TOBAGO

The area of the island is about 250 acres, it is well covered with vegetation; in fact, there is considerable diversity of plant life. The island is hilly, the highest point being 470 feet. In parts the ground is steep and difficult of access; these conditions, with the deep valleys between the hills, afford excellent cover for the birds.

As indicated in the accompanying sketch-map, the island lies to windward of the main island; the channel separating the two islands is about  $2\frac{1}{2}$  miles wide. The only suitable landing place is on the western side facing the main island, where the water is usually fairly calm. Strong breezes blow on the eastern side which faces the Atlantic and produce turbulent seas nearly all the year round. There is a dry period, usually from January to June; the rains commence in the latter month, gradually, with showery weather, then fairly heavy rains set in towards the end of the year. There is always plenty of sunshine, however, between the showers; the atmosphere is seldom misty.

## VEGETATION

Palms, trees, shrubs and a variety of creepers, many producing berries and fruit, grow in profusion. Some trees reach a considerable height. Most conspicuous and beautiful is the Silver Thatch Palm (*Thrinax argentea*), which grows in thick groves in valleys and on hill-sides. Fairly tall trees are "Clammy Cherry", or "Manjack" (*Cordia colococca*), "Bay tree" (*Pimenta acris*), "Fiddlewood" (*Citharexylum spinosum*).

Cacti grow in profusion all round the rocky border of the Island, i.e. *Epiphyllum hookeri* and *Hylocereus lemairei*, which fruit abundantly.

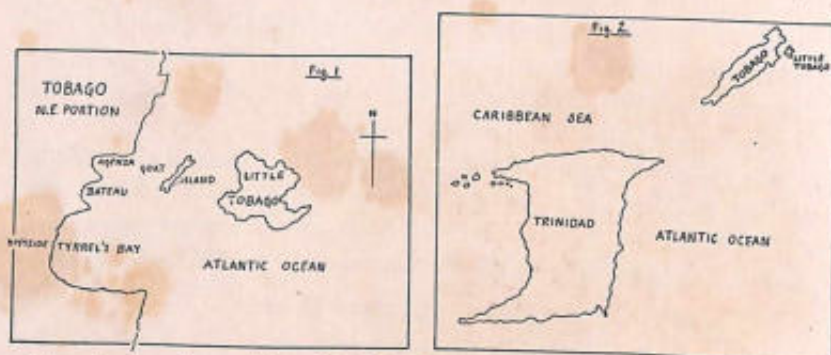


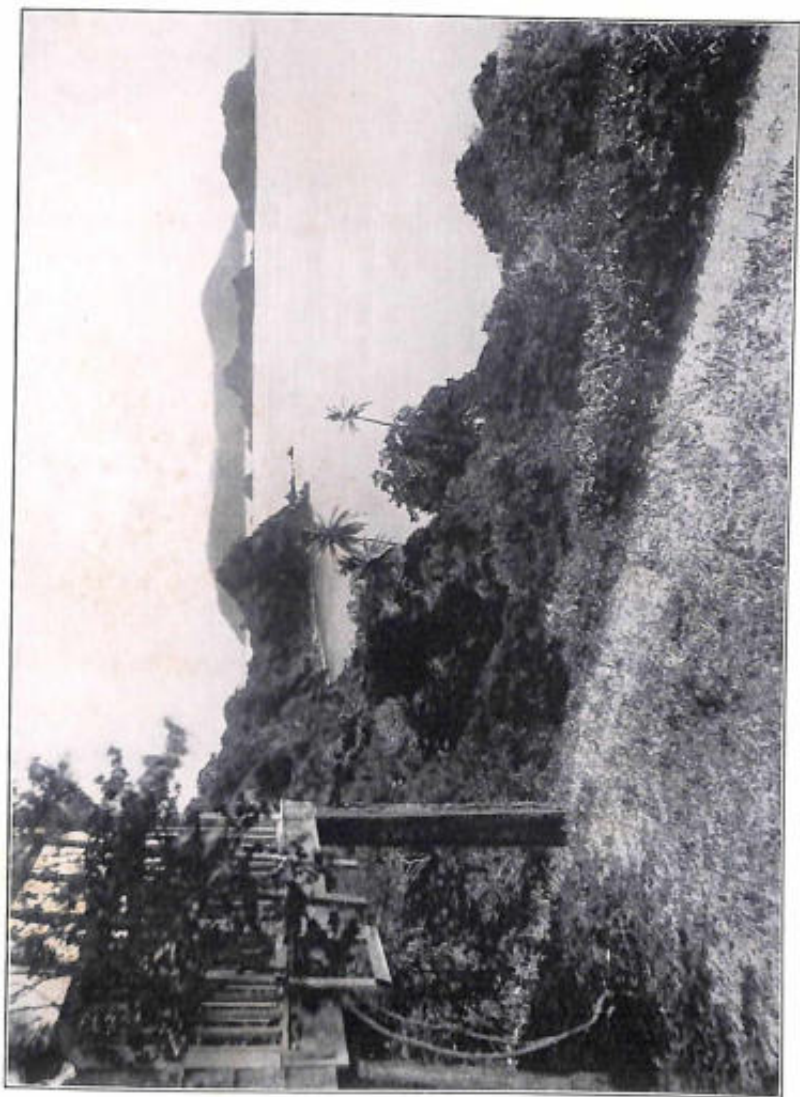
Figure 1 shows the position of Little Tobago at the north-eastern extremity of Tobago.

Figure 2 shows the position of Tobago 20 miles to the north-east of Trinidad.

The "Wild Plantain", or "Wild Banana" (*Heliconia bihai*), with boat-shaped flower sheaths, also *Bromeliaceae* that cling to trees and rocks provide natural containers for water. Bananas and Pawpaw (*Carica papaya*) were cultivated to ensure a constant supply of food for the birds; most of these had degenerated when last seen in 1929, but were being replanted. Besides fruit, berries, etc., there are numerous creatures that live under rotting leaves on ground, in decaying wood, and in crevices of bark on trees, such as Ants' eggs, Termites, Spiders, Scorpions, Cockroaches, Centipedes, Earthworms, and other similar forms of life. Snails were observed to be fairly plentiful.

## WILD BIRDS

The Paradise Birds have numerous wild birds on their island to share in these supplies of food that nature has provided there. The



*Photo: L. Tucker.*

**SPEYSIDE, WITH GOAT ISLAND AND LITTLE TOBAGO,**

most noticeable of these are : " The Yellow Tail " (*Ostinops decumanus*), " King of the Woods " (*Momotus swainsoni*), " Mocking Thrush " (*Mimus gilvus*), " Yellow-eyed Thrush " (*Merula gymnophthalmus*), " Wren " (*Troglodytes rufulus*), Doves and Pigeons ; Gulls, Terns, Cormorants and other sea birds plentiful, some nesting, others flying around, all busy and noisy. It is most interesting to note that the Domestic Fowl has developed into a secretive and wary bird. Cocks are frequently heard crowing, hens clucking, chicks calling, but it is difficult to get a fleeting glance at one of these. The slightest noise of footsteps and the familiar sounds cease. Pendant pear-shaped nests of *Ostinops decumanus* are seen hanging from ends of branches in conspicuous places. This bird is a pest, it should be driven off the island, no doubt it consumes the food the Paradise Birds require.

It is pleasing to be able to record that both on Little Tobago and the main island " wild " birds are remarkably free from fear of man, so that one is able to see them to advantage as they are not anxious to take cover.

#### NOTES ON THE HABITS OF *Paradisaea apoda*

Since these birds were released on the island in 1909 all efforts to locate nesting-places have failed, no eggs or nests have been seen. Some time in 1923-24 attempts were made to snare the birds ; all efforts to capture them however proved unsuccessful. Observations with a good glass were made from the caretaker's house, which commands a good view of a well-wooded spot in the vicinity ; at this spot there is a tall tree which was much frequented by a large full-plumaged male, accompanied by other Paradise Birds which always came to his calls. It was observed that whenever attempts were made to snare the birds on a " favourite " tree much frequented by a big male with his attendants (usually six to ten in number), this tree was either avoided or care was taken to ascertain before entering the tree that conditions were normal. In this way similar attempts at snaring were frustrated by the caution and sagacity of the old males. Visits to Little Tobago were made by the writer in June and August, 1929, and again in April, 1930. My visits in 1929 were in the " wet " season ; Paradise Birds were neither seen nor heard, but in April

this year four birds were seen ; they were very vociferous ; two of these appeared to be females ; the males were in full feather ; the latter were among the *Thrinax* palms, the females on a " Clammy Cherry " tree. Friends who have paid visits to the island recently state that they have seen between five and six males in good plumage on each occasion. The birds seem to prefer the elevated ground on the sheltered well-covered side of the island where the timber trees are of more luxuriant growth ; the vegetation on the eastern side being stunted and sparse is not frequented, except when the cacti are fruiting, and then they would be attracted to this exposed area.

The Paradise Birds can be heard some distance out to sea when they are calling in the mornings or late afternoons ; the writer has heard them half a mile out to sea when approaching the island ; fishermen passing the island in their boats sometimes hear the birds. Now that the Government of Trinidad and Tobago have taken control of the island, it will be interesting to watch developments, as fruit trees, timber trees, etc., are being planted and provisions made for ample water supply.

Regarding the reported appearance of a young female Paradise Bird on the main island some years ago, the writer is not able to confirm this ; his property " Agenza ", where it was seen, is the nearest point to Little Tobago. The writer and others who can be relied on in this connection have never seen one of these birds at any time on the main island. Conditions on the main island, which is 114 square miles, would be ideal for colonizing Paradise Birds.

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## DEATH OF AN AMERICAN WHITE OR WHOOPING CRANE

By A. F. MOODY

(By permission of the Lady Lilford)

To the writer is conceded the sad duty of recording that in the Lilford collection of birds there died on 19th August last a female Whooping Crane (*Grus americana*).



WHOOPING CRANE TAKEN AT THE NEST BY MR. PETER  
SCOTT, 1930.

This example was purchased fully adult in 1892 and was, therefore, at least 40 years of age.

In appearance this stately great white bird (pure white with black primaries and a small dark head patch), except for colour, more closely resembled the European Crane (*Grus communis*) than any other member of the genus *Grus*. That is, it equals that bird in size, resembles it in contour and habits, and possesses a wild musical call distinct yet not very dissimilar.

During the latter years of its existence, no companion of its own kind being available, this example consorted with a female Manchurian Crane (*Grus japonensis*). This attachment ripened to the extent that both birds annually shared the same nest and, although the American bird did not of recent years lay, it invariably took its turn at guarding and sitting upon the unfertile eggs of the Manchurian bird. I believe the Whooping Crane was so named from a fancied resemblance of its occasionally uttered loud piercing cry to the whoop or yell of the savage when rushing to battle. It was at one time abundant over the whole of Central North America. In recent years, however, although very little data is available, I understand that the species has become almost exterminated from wheat lands, marsh and prairie, until at the present time less than a score individuals represent the whole race. These I understand have retreated to certain more or less inaccessible ground where, in spite of some protection being afforded by man, they hold a precarious footing owing to the young being much harassed by their natural enemies, coyotes, eagles, etc.

The earliest mention I can find of this fine Crane appears to be in 1594 when, as referred to by more than one writer, Captains Amadas and Marlow, landing on the island of Wokokou in July; found great numbers of Crane, for the most part white, and describes the noise they made "as if an army of men had all shouted together".

During the early part of the last century too, they must have existed in immense numbers. An eye witness of the vast hoards then on migration down the Mississippi in December, 1811, writes:—"The clangour of these immense legions passing along high in mid-air seemed almost deafening; the confused cry of the vast army continued with the lengthening procession, and as the vocal call

continued nearly throughout the whole night without intermission, some idea may be formed of the immensity of the numbers now assembled in their annual journey to the regions of the South".

References to the species a century later are not pleasant reading, and include :—The late Mr. H. D. Astley, 1907, *AVICULTURE MAGAZINE*, Vol. V, p. 348 :—

"A pair still exist in the Zoological Gardens at Amsterdam but there are probably not many more in the world".

Dr. J. C. Phillips, Wenham, Mass., U.S.A., 1912, writes (*AVICULTURAL MAGAZINE*, 3rd Series, Vol. III, p. 223) :—

"Those interested in the Crane family will mourn the loss of our splendid Whooping Crane, gone probably for ever. The last published observation of this species that I know about was made by Ferry (*Auk*, vol. 27, p. 195), who noted an individual at Quill Lake, Saskatchewan, 14th July, 1909. E. H. Seton, in his book *Arctic Prairies*, on page 287 noted five Whoopers flying overhead in the Attrabaska River, 16th October, 1907. These are, perhaps, the last that will ever be seen in the wild."

The same contributor in this magazine two months later, page 288, modified the above by writing :—

"I have some further evidence of the existence of the American Whooping Crane which a short time ago I thought was either extinct or on the verge of extinction. Mr. Charles W. Ward writes me that he saw 'altogether about a dozen Cranes' along the Gulf Coast of Louisiana during February, 1912, and Mr. McIlhenny, of Avery Island, La., confirms this in a letter to me, in which he states there are still a few between Vermillion Bay and the Texas line."

Twice verbally I have had news of this fine species. Once in 1914 when a so-called sportsman described the great bravery on his part required in the dispatching of a wounded bird.

Again in 1927 when an ornithologist who had travelled 2,000 miles to visit their ground was able to pick up four with a glass at a distance of two miles. Rightly or wrongly, wrongly I hope, this gentleman came away with the impression that there were but nine left.

To aviculturists and naturalists alike the demise of the Lilford example, probably the last of its kind in Europe, suggests tragedy,

for undoubtedly such was the hardiness and adaptability of the species in confinement that had in earlier years a mate been procurable the species would most assuredly have bred and probably, like certain others of the group, have established the race in captivity. The passing of the wild bird from the American continent also strikes a sad note and reminds us that another page, if not, indeed, a chapter, of the great and fascinating book of Nature is all but closed.

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## TURKEYS

By Professor A. GHIGI and J. DELACOUR

Turkeys are the largest gallinaceous birds. They are natives of North and Central America and are very closely related to the Pheasants.

In spite of their size Turkeys have elegant figures for they are slender and long-legged. Their heads and necks are bare and provided with caruncles of very varying shapes, coloured red or yellow changing into blue or green, like little warts, and which, especially in the cocks, are like coral in the breeding season.

In the middle of the forehead is a long, erectile, conical protuberance, which when the cock displays falls on one side of the beak. In the middle of the breast there is always a tuft of very long thick hairs, like a brush. All their feathers, except the flights which are shaped like those of other gallinaceous birds, are truncated at the tip and metallic. The tail consists of eighteen nearly equal feathers. Their feet have scales as in Pheasants, and not as in Guinea-fowl, and the cocks have spurs which are not very important considering the size of the bird.

The differences between the sexes are evident though not as marked as in Pheasants. They comprise size, development of the caruncles and the pectoral brush as well as the metallic lustre of the plumage, which is much brighter on the cocks.

Turkeys are polygamous and sociable. When they were still common in the wild state a flock of a hundred or more might be seen, cocks and hens and their young. At the beginning of winter these birds migrated from North Virginia and Pennsylvania to Texas,

Louisiana, and Florida; even large rivers did not stop their journey. Now Wild Turkeys are very rare, but there are still a few in the mountains of Virginia and Pennsylvania, and the forests of Florida, in Texas and California, and, most commonly, on the high Mexican plateaux.

Wild Turkeys display like the domestic kinds, but they are exceedingly active and fly like Peafowl; like them, too, they perch on the tops of trees. The hen, about April, lays twelve to fifteen eggs in a well-secluded nest. One pairing is enough to ensure fertilization of all the eggs. Incubation lasts from twenty-seven to twenty-eight days. If their eggs are taken a second clutch is laid. They are yellowish white with reddish brown spots. The poults have tawny down with brown markings; they are like Peachicks in colour but not shape.

They are reared very much like Peachicks; but young Turkeys must not be soaked with rain or dew, nor run about in hot sun. It is a good plan to shut the mother or foster-mother up in a coop for two months until the young have developed their caruncles. But they absolutely must run free after the first fortnight. In England and at Clères young birds are reared thus without difficulty even in the wettest summers, like young Peafowl. Given absolute freedom in large woods they thrive extremely well. Their food is the same as is given to Peachicks—custard, chopped green stuff, biscuit, bread soaked in water, maize flour and silkworm pupæ.

THE WILD TURKEY (*Meleagris americana*) belongs to the genus which bears the distinguishing marks enumerated above. It is like the domestic bronzed bird, but its plumage has a brighter metallic lustre, it is smaller, slighter, and in both sexes the caruncles are much less developed. The feathers of the rump are edged with chestnut. It inhabits the eastern parts of North America from Pennsylvania to Florida, where is a slightly different race, *M. a osceola*.

The Wild Turkey has been imported several times to Europe and flocks are living at Clères in France and at the Zoological Park at Whipsnade in Bedfordshire.

THE MEXICAN TURKEY (*M. gallopavo*) of W. America and Mexico has white edged feathers of the rump. This is the ancestor of the



VULTURINE GUINEAFOWL  
*Acryllium vulturinum*

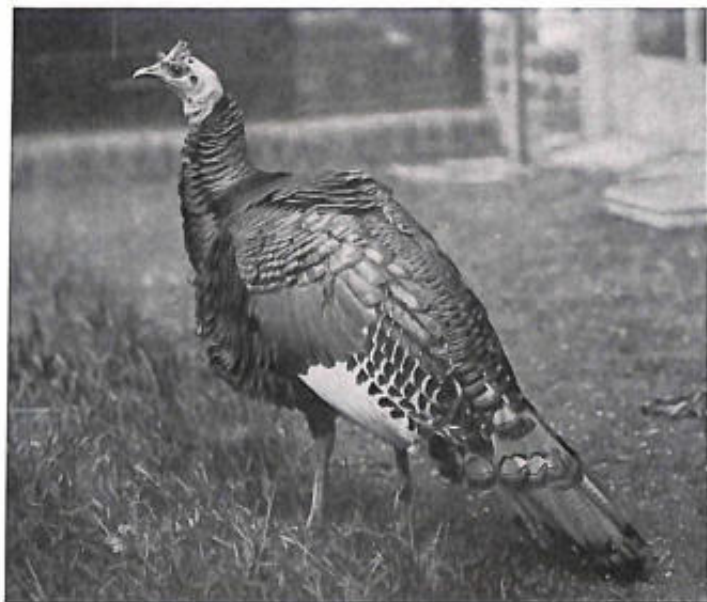


Photo D. Seth-Smith

OCELLATED TURKEY  
*Meleagris ocellata*

farmyard Turkey which was domesticated as far back as the time of the Aztecs. Domestic Turkeys still retain the white edges to the feathers of the rump. It may be remembered that the Turkey was the only domestic animal of the civilized people of old Mexico.

THE OCELLATED TURKEY (*M. ocellata*) forms the second and last branch of the family. It lives in the dry forests of the Mexican States: Chiapas, Campêche, Yucatan, Peten in Guatemala, and British Honduras. It is a magnificent bird, rivalling the Peacocks and Monaul Pheasant; its plumage is like silk with the colours of gold, sapphire, and rubies; its rectrices and coverts have terminal eyes. Its bare head is blue and the warts and frontal protuberance are yellow; legs red.

One of us saw in 1912 a living pair of these birds at Hagenbeck's in Stellingen and two hens which flourished in the Berlin Zoological Gardens. About the same time a pair lived in the London Zoological Gardens, where the cock survived until quite recently.

We have never seen it in N. American zoos. It is said to be very difficult to preserve them alive when captured, as they become frightened and kill themselves. But this could be provided against with proper care and packing just as with the wilder Pheasants.

The Ocellated Turkey is bronze green; its feathers edged with tan colour and black subterminal line; its wings are black and white, with the great coverts copper coloured and the lesser bronze green. Its tail feathers, rectrices, and coverts are brown with black stripes and a large terminal eye in bronze green and coppery yellow.

It is uncertain if this splendid species has ever been reared in confinement, but hybrids between it and the wild Turkey have been obtained in Europe. Once acclimatized it would seem to be hardy and strong, but to require heat and careful treatment at first.

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## GUINEA-FOWL

By Professor A. GHIGI

Guinea-fowl are distinct from Pheasants, and belong to the family *Numididae*, a name derived from *Numida*, the genus to which the common Guinea-fowl belongs.

Guinea-fowl are large strong birds, with long spurless legs even

among the cocks, with the exception of two species. Their wings reach to the root of the tail and its feathers, except among the Vulturines, are very short; the tail-coverts are about as long as the rectrices. But the characteristics which are the peculiar mark of this family lie in their heads, the scales on the posterior of the tarsus and in the colour of their plumage, which is exactly alike in both sexes.

Their heads and necks are usually bald save for a few scattered hair-like feathers. Regarding the scales on the tarsi, the Guinea-fowl have them pentagonal, more or less reduced and forming a distinct line; while with Pheasants a row of large transversal scales covers the posterior part. This characteristic is less noticeable in the genera *Phasidus* and *Agelastes*.

The plumage of adult Guinea-fowl is almost uniformly speckled with little white or blue pearl-shaped dots; exceptions are the *Phasida*, which are almost black, and the *Agelastes*, which have pale pencillings on a darker ground, and the young of other species which are striped with brown and yellow.

Guinea-fowl are found in Africa and Madagascar.

They are, according to genus, birds of the plain or of the forest and always roost in trees. They like to flock together sometimes in great numbers, and at times wander from their original habitat and become vagrants, but in the breeding season they separate into pairs, and the cock very often takes a share in rearing the young. The hen lays a large number of eggs; a clutch usually numbers twelve to eighteen eggs; if they are taken she lays a second, third, and even a fourth time, so that one can obtain forty or more eggs from a single pair in a season.

Incubation lasts from twenty-three to twenty-seven days according to the species; the eggs are rather small, reddish or buff in colour, almost uniform and much shorter than those of Pheasants, obtuse at the end where the air chamber is situated and pointed at the other. The shell is very hard and very difficult to break.

Newly hatched young birds are closely covered with down without a trace of flight feathers; their orange beaks and legs are thick and strong. They are more easily reared than Pheasants, but must be protected from dew and the mid-day sun until they are a month old.

Pheasant coops can be used; a Turkey hen is the best foster-mother as the chicks will stay with her until the spring after they were hatched, whereas a hen would leave them within fifty days. It is not necessary to give them fresh ants' eggs, but the chicks must be able to wander from their mother in search of insects and green food. The custard usually given to Pheasants suits them well, but a large proportion of chicory should be mixed with it.

Though Guinea-fowl are easily reared, it is very hard to induce adult imported birds to breed. They hardly ever lay in an aviary, but require large enclosures in which they can be kept by pinioning or clipping the six primaries of one wing. The equatorial species feel the cold very much and must be shut up for the winter in a heated place. If this precaution is observed, Guinea-fowl are strong birds and less subject to illness than Pheasants. With the exception of the Vulturine it is rare for them to be attacked by diphtheria or influenza. As they feed on surface insects and do not dig deeply, they do not often swallow earthworms and even in infected places are usually immune from red-worm. They may, however, be attacked by poultry cholera and avian fever.

With Elliot we may distinguish two sub-families of Guinea-fowl, the *Agelastinae* and the *Numidinae*.

The *Agelastinae* are not pearl spotted. They have transversal scales at the back of the tarsus, and the scales are only partly imbricated; the cocks have spurs. These birds are the link between Francolins and true Guinea-fowl. Only two species are known; the Black Guinea-fowl (*Phasidus niger*) and the Turkey-like Guinea-fowl (*Agelastes meleagris*). Their habits are very little known, and no living importation has been brought to our notice.

THE BLACK GUINEA-FOWL has head and neck bare except for a very short crest running from the base of the beak to the occiput. Its tail is composed of fourteen rectrices. The crest is black, all the rest of its plumage is brown with very narrow stripes which are rather deep yellowish brown; it is the size of a small Guinea-fowl. This bird inhabits forests in W. Africa from Cape Lopez to the Loango territory.

THE TURKEY-LIKE GUINEA-FOWL has a red featherless head and neck, except that the hinder part of the latter is milk-white. Its

anterior plumage is white, and the rest black finely pencilled with white. This bird, whose habits are unknown, is found from Liberia to Gaboon.

#### THE TRUE GUINEA-FOWL

The *Numidinae* or true Guinea-fowl are spotted with white or blue. The hinder portion of their legs is covered with more or less pentagonal scales. There are no true spurs, but the male and female Vulturines have more or less developed and numerous tubercles. The Guinea-fowl are divided into three genera—the Vulturine (*Acryllium*), the Crested (*Guttera*), and the Helmeted (*Numida*).

THE VULTURINE GUINEA-FOWL (*Acryllium vulturinum*) is a fine bird, as handsome as the best Pheasant. It is taller and larger than the other kinds, and has a long thin neck and very small bare head, which wears a collarette of very short feathers like a velvet band from one ear to the other. The breast feathers are very long and lancet shaped, black with white pencilling in the middle and edged with blue. The two middle rectrices are much longer than the laterals. All the upper parts are powdered with little white spots encircled with black. The breast is black in the middle with two large patches of cobalt-blue on the sides. The flanks are blue with white spots bordered with lilac, and the outer edges of the secondaries are of the same colour. The head and neck are grey, the eyes red.

The young are like those of the common Guinea-fowl, only their heads are spotted, not striped, with black. When feathered they are clearly striped black and white on the neck and breast, and with black and tawny yellow on the back.

Vulturines inhabit the driest and most arid Acacia woods from Somaliland to Zanzibar and Kilimanjaro.

These birds are very often imported into Europe because of their great beauty and elegance; but they stand cold and damp very badly. We have for some years been receiving them and kept them at liberty at the experimental station of Aviculture at Rovigo, giving them shelter in winter. This year for the first time two hens, which we had kept two years, laid, and we have thirteen chicks, unfortunately not hatched until the end of August. Although they are very vigorous we have small hope that they will survive the winter.

THE CRESTED GUINEA-FOWL (*Guttera*) have a thick straight top-knot of long black feathers of which the hindmost usually cover the occiput as well. These feathers spring from a small adipose cushion in the middle of the forehead. The head and neck are bare otherwise, and the skin is of a different colour and prolonged at the base by a fold which makes two appendages in front. Sometimes there are very small tufts at the base of the upper mandible, but these are well developed only in *G. plumifera*.

The size and shape are very much the same as the Common Guinea-fowl; the plumage is black, uniformly sprinkled with blue pearl-shaped spots. The outer edges of the five largest secondaries are white.

The Crested Guinea-fowl belong to tropical Africa down to the Transvaal. They are birds of the thick damp forests. They utter curious sounds at evening which recall a military tattoo, and may be imitated by "tatti tatti tatti tatarara tatarara tatarara", said several times over with varying rapidity. The specific differences are not marked; they lie chiefly in the tufts, the shape of the topknot, the colour of the bare skin of the head and neck, the absence or presence of the black collar. Perhaps one might very justly look on all the Crested Guinea-fowl, except *G. plumifera*, as forms of one species.

*Guttera cristata*, W. Africa from Sierra Leone to Togo, has a blue head and neck, red throat, and a black collar.

*G. seth-smithi*, from Lakes Abert and Albert-Edward, has darker blue spots.

*G. pucherani*, from Jubaland and bordering regions, has no black collar; its cheeks, throat, and back of the head are red. The variety *granti* from Ugogo has a black collar, and the contiguous variety *suaelica* has less red on the cheeks.

*G. barbata* from Makonda has no red on the bare skin of head and neck, and its black collar descends to the middle of its breast.

*G. lividicollis* from Zambesia is dirty white on the back of the neck and ears, and the very deep black collar is shot with deep chestnut as are likewise the little circles round the blue spots.

*G. edouardi* from Natal is like the above but has a red throat like *G. cristata*.

*G. sclateri* from the Cameroons is coloured like *G. cristata* but its crest is very short in front.

*Guttera plumifera* may be a species and not merely a variety, as it has two blue tufts at the base of the beak and its crest is shaped quite differently, like a kind of short brush in front and very long at the back. It has no black collar and every neck feather is terminated with a large pearl-shaped spot. This species is distributed in W. Africa from the Cameroons to Loango.

The Crested Guinea-fowl are very rarely imported and only in small numbers. They need protection during winter.

The varieties we know certainly to have been imported are: *G. cristata*, *pucherani*, *seth-smithi*, *barbata*, and *lividicollis*. *G. pucherani* laid once in England; in Italy, with me, a hen *barbata* paired with a cock *lividicollis* has laid regularly for the last three years. Each clutch consists of eight to twelve eggs. Incubation lasts twenty-three days. The chicks have a large blue spot on the head and are very pretty. They assume adult plumage and are as large as their parents at five months old.

THE HELMETED GUINEA-FOWLS (*Numida*) are distinguished by a protuberance of the frontal bones of the head, covered with a horny case, and two cartilaginous wattles at the base of the upper jaw. The nostrils are covered with a fold of flesh; the cheeks and more or less of the neck and nape are also caruncled, differently coloured and scantily feathered, the barbs so reduced as to be transformed into hair. The legs are covered in front by transverse scales, but at the back only with little pentagonal scales. The tail is made up of sixteen feathers, short and round at the tips; the middle feathers are scarcely longer than the laterals. The tail-coverts are nearly as long as the rectrices. The plumage is black or dark grey, speckled with pearly white dots; in some species the spots on the flights are joined and form transverse stripes.

There is little difference between the sexes; the cock is usually slightly larger, and his helmet and tufts are more developed. His display is peculiar; he runs backwards and forwards, opening and raising his wings; the hen only utters the very worrying call which may be rendered by the syllables *coquah*, *coquah*, *coquah*.

Helmeted Guinea-fowls are birds of the open plains and prefer to live in large flocks; but they are also found on mountains. They

lay numerous eggs; incubation lasts twenty-five days. The eggs are red, short, very oval, and have very tough shells. The tawny, black, and yellow spotted chicks are very lively and active in the pursuit of insects.

THE DOMESTIC GUINEA-FOWL has been evolved from a species (*Numida galeata*) which in the wild state inhabits W. Africa from Senegal to the Niger and Cameroons, and is also found in the islands of Cape Verde, Annobon, and St. Thomas. A form (*N. g. sabyi*) is found in Morocco. These Guinea-fowl are distinguished by the wine-coloured unspotted feathers of their collars.

They are smaller than the domesticated variety and their helmets and wattles are not so pronounced; the first is the colour of wood, and the second red; their legs are black. These wild Guinea-fowl are sometimes imported alive into Europe; a hen paired with a domestic cock has bred at liberty in Italy.

THE COMMON HELMETED GUINEA-FOWL (*Numida meleagris*) has the helmet small pale waxy brown, as is all the top of the head. The wattles are light blue, as well as the bare skin of the cheeks. The neck is covered with transversely black and white striped feathers, and a little black collarette the nape. The secondaries have a dull lilac stripe on the outer edge.

It is a native of the high plateau of E. Africa, Abyssinia, Kenya, and Yemen in Arabia. There are several races, of which *N. p. somaliensis* is the most characteristic. It has very often been brought to Europe, and has bred there.

THE MITRED GUINEA-FOWL (*Numida mitrata*) has long, narrow wattles. Its helmet is large, wide at the base, and reddish; the forehead, nape, and the points of the wattles are red; all the other bare parts, which are the same shape as those of *N. galeata*, are brilliant blue-green, very distinctive. The neck at the base is striped black and white.

The Mitred Guinea-fowl inhabits E. Africa from the Zambesi to Mombasa, and as far as Lake Tanganyika in the interior; and is also found in Madagascar and the Comoro Islands. It is often imported, but is a shy breeder; however, at Rovigo in Italy young have been obtained for several years, and also at Clères.

The whole of equatorial and meridional Africa is inhabited by Guinea-fowl which ornithologists consider to be sub-species of the Mitred Guinea-fowl.

We need not do more than mention the Crowned, whose very high helmet covers all the cranial skull cap ; this is a large form ; it is found in Africa, south of Natal, and the Transvaal.

REICHENOW'S GUINEA-FOWL (*Numidia reichenowi*) has a helmet which is higher than wide, and quite straight. The wattles are oval and red all over. In head and plumage it is the same as *mitrata*. This race inhabits the region round about Kilimanjaro as far as Lakes Victoria Nyanza and Tanganyika. The two last-mentioned races have sometimes been imported into Europe.

We have obtained many fertile hybrids between *galeata* and *meleagris*, as well as between *galeata* and *mitrata* ; from this we may deduce that the Helmeted Guinea-fowl really constitute one good species, with several sub-species and geographical races.

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## THE BREEDING OF THE CROWNED PIGEON

In our American contemporary *Aviculture* for November, 1930, Mr. A. A. Prestwich states that *Goura coronata* has never been bred in Great Britain. This is quite a mistake. There are two records of young being "hatched" in the London Zoological Gardens in 1874 and one in 1875, and it is recorded as having been "bred" in 1885, 1886, and 1887. Since my term of office at the Gardens commenced this species has bred twice, once unsuccessfully (1913) and with complete success in 1914. As this success was by some oversight never recorded in the AVICULTURAL MAGAZINE, I am reproducing a photograph of the young bird with its parents, taken on the 1st of September, 1914, and printed in the *Field* of 19th September, 1914. According to my notes made at the time and published with the photograph, the single egg was laid in a nest formed of sticks on a wooden platform in the Western Aviary. Both parents took turns in sitting and the egg hatched on 25th July, the period of incubation being judged to have



Photo: D. Seab. Smith.

CROWNED PIGEON (*Goura coronata*) AND YOUNG BIRD REARED IN THE LONDON ZOOLOGICAL GARDENS IN 1914. PHOTOGRAPH TAKEN A FEW DAYS AFTER THE LATTER LEFT THE NEST.

been twenty-eight days. The young bird left the nest when between four and five weeks old, when it resembled its parents in all but size, as the photograph shows. It flew well from the day it left the nest.

D. SETH-SMITH.

## AVICULTURAL NOTES

By THE EDITOR

The *Emu* for October, 1930, is a particularly interesting number. Mr. H. G. Barnard and G. H. Barker supply an article on the genus *Platycucos*, which is illustrated by a coloured plate of the Pale-headed Rosella (*P. adscitus*). They tell us that these birds, in company with others of the genus, have developed a liking for fruit and grain, in consequence of which the farmer takes heavy toll of them to protect his crops. "In the South some farmers have used poisoned grain with great effect, and have carted away barrow-loads of dead birds as a result."

Mr. Michael Sharland has been most successful in his endeavour to photograph the Lyre Bird and has obtained some really first-rate results illustrating the display of this wonderful bird, notwithstanding the fact that in the subdued light amongst the dense foliage it was necessary to give as much as seven seconds exposure. The photographs show that in display the tail is not held in the position that is generally shown in illustrations, that is, in the form of a lyre, but "spread fan-wise over its back until at times it concealed the head and part of the body. The handsomely marked lyrate feathers of the side of the tail were projected horizontally from the base, the finer ones in the centre, glistening with a silvery white, forming the shape of the fan."

It is known that young of the Pennant Parrakeet are generally green in their first plumage, but that occasionally this green stage is omitted and the red plumage assumed from the first. In this connection Mr. C. Sullivan writes: "Do races of the Green Rosella differ in

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the mode of acquiring the adult plumage? At Daylesford, in Central Victoria, the green immature form is fairly common. In South Gippsland Hills the green bird is exceedingly numerous. At Buchan, in Eastern Victoria, the green form is rare. In the Dorriggo district, out of many hundreds seen not one was in green plumage, the immature birds here showing a green and black mantle with wing of blue and scarlet. The green bird was not seen in the Nandewao Mountains, 40 miles south-east of Moree . . . It is possible that the proportion of green-plumaged birds may vary in the one district from year to year."

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It would appear that the male Satin Bower-bird, which normally is green for the first six or seven years of its life, occasionally misses out this green stage, for Mr. Sullivan mentions a friend of his who had once seen "the rich blue-black plumage in a young bird that was taken from the nest and was not yet fully feathered. The bird lived in captivity for some years, during which time it retained the adult plumage".

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The *Natural History Magazine* (published by the Trustees of the British Museum) for October, 1930, contains an article by Viscount Grey of Falloden on the habits and breeding of Mandarin and Carolina Ducks. Lord Grey adopts the name of Wood Duck for the Carolina, and it would be as well if this name were universally adopted, for it is that by which it is known in its own country and is quite appropriate. Moreover, there is no other species bearing the same name except the Maned Goose of Australia, and in this case the name can hardly be called well-chosen.

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For ten years no Mandarins or Wood Ducks have been pinioned at Falloden so that almost the whole of the stock is full-winged. The birds nest in the trees, either in natural holes or in herring-barrels which have been fastened in suitable places; sometimes the two species will lay in the same nest, but it is always the Wood Duck that incubates and hatches the eggs. And so the sight of a Wood Duck with a mixed

brood is not uncommon. The young Mandarins are, however, considerably hardier than the Wood Ducks, more intelligent and grow quicker. Consequently, the Mandarin Duck is more than holding its own and has spread over the neighbourhood.

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Although Lord Grey's Ducks are full-winged they have become very tame and at feeding-time come and settle upon the head and arms of their owner as the excellent photographs which accompany the article show.

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In the November number of *Aviculture* Dr. Leon Patrick records the successful breeding in his aviaries in California, of the Derbyan Parrakeet.

Two young were reared successfully in a pen of 12 ft. by 12 ft., but we are not told of the type of nesting-box used. The young birds resembled their parents but lacked the violet colour on the head. "Both the young were born with both upper and lower mandible an orange-red, just a shade lighter than the upper mandible of the father bird. But now both mandibles are seemingly changing to black".

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In the same number Mr. A. H. Isenberg records the breeding of the Malay Glossy Starling, which, in this country, is usually termed the Glossy Calorius, and is scientifically known as *Lamprocorax panayensis strigatus*. The birds nested several times during the summer in a log nest and although they hatched two young each time only one survived.

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## CORRESPONDENCE

### FEATHER-PLUCKING

SIR,—With reference to the correspondence on the above subject in the AVICULTURAL MAGAZINE, October issue, and in response to Lord Tavistock's request, I have gone through very carefully all the correspondence relative to feather-plucking in Parrots received by me in

my capacity as adviser to *Cage Birds* during the period from the summer of 1924 until the present date, inclusive. During this period I have been consulted on 683 cases, analysis of which are given in the following table :

Meat and other animal foods definitely included in the diet, 517 cases.

Doubtful, i.e. cases in which Parrots already addicted to the vice were purchased and the owners were unable to say how the birds were fed before coming into their possession, 118 cases.

No meat given but egg and milk-sop offered occasionally and birds fed on mixtures containing a very large proportion of hemp. Otherwise fed on a rational diet of fruit, green foods, nuts, etc., 41 cases.

Birds fed on dry seed only, the exact composition of which is uncertain, 7 cases.

My own personal experience goes to prove that Parrots fed on a well-balanced mixture such as I have so frequently recommended in *Cage Birds*, with plenty of green foods, fruit (apple, pear or grapes), raw carrot, radish, onion, celery, swede, turnip, etc., a turf of grass now and again, roots of dandelion and plantain with plenty of soil adhering thereto, sprays of hawthorn, berries and all, and other freshly cut soft greenwood, dry toast and dry biscuit, monkey nuts, beechmast, green peas and pea pods in season, ripening corn, etc., a charcoal biscuit now and again and a bit of cuttlefish to chew, with a good spraying once or twice weekly with borax and warm water never develop this vice, and during a period of some twenty-five years in which I have kept Parrots and Parrakeets of numerous varieties I have never yet possessed a bird which developed this bad habit. I feel confident that if all Parrots were fed as above and the diet varied as much as possible on these lines feather-plucking would be practically unknown.

Like Lord Tavistock, I am also convinced that hemp in any quantity is bad for Parrots and also for Love-birds, and I believe it is certainly the cause of the commencement of feather-plucking in some cases at least. Two years ago I carried out an experiment in the effects of hemp on Peach-faced Love-birds. I had at that time about a dozen Peach-faces all in perfect health and condition. These birds were all

caged separately in pairs, and to four of these pairs I supplied a mixture made up of two parts Spanish Canary, one part hemp and one part white millet. After about eight weeks of this regime nearly all the hemp-fed birds commenced plucking themselves and in six months time all four pairs were practically naked, whilst the non-hemp fed two pairs kept in beautiful glossy plumage natural to this species. On my discontinuing the hemp and feeding on a staple of Spanish Canary with a little millet added feather-plucking gradually ceased, and in a few weeks' time all the birds with one exception were once again almost fully clothed. The one exception remained in a practically nude state for several months, and then gradually recovered until once more fully clothed and in it's right mind. Whilst my own personal experience and also the results of my work for *Cage Birds* go to prove fairly conclusively that meat has a most baneful effect on Parrots, I am quite prepared to believe or be convinced that it may in certain isolated cases and over a very limited period prove beneficial. I should imagine, however, that the only birds which *might* possibly benefit would be individuals which had been fed over a very long period on nothing but dry hard seeds alone. It would be certainly odd if strong butcher's meat upon which even carnivorous birds such as Hawks are unable to thrive, and to the unrestrained consumption of which so many human disorders are directly due, should none the less prove beneficial to non-carniverous birds such as Parrots.

G. E. RATTIGAN.

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SIR,—A case of feather-plucking which occurred in the aviaries belonging to Mr. Spedan Lewis may be worth recording, as it runs counter to any that I have so far come across.

We bought a fine Bouquet's Amazon in the winter of 1929; it had an injured wing, but was otherwise in perfect condition and plumage and a very quiet bird. We kept it in a cage for about three months and then, thinking it would enjoy comparative freedom, turned it into a large flight aviary with other Parrots, chiefly Amazons. It lived at peace with them and seemed quite happy, but after moulting it suddenly began to pluck itself furiously, and at the end of three weeks it literally had not a single feather on its body. It looked like some

## A CATASTROPHE

SIR,—It is a curious fact, although one, of course, familiar to all aviculturists, that some species of birds from tropical regions are perfectly hardy, while others from the same region are as sensitive to cold as one would expect. The Asiatic King Parrakeets, for example, endure without harm our most severe winters, while the majority, though not all, of the Lories, require a fair amount of heat, anyhow in their aviary shelters. A most sad catastrophe which recently happened in my bird-room shows that just as tropical birds vary in their ability to stand extreme cold, so do they also vary in their ability to stand extreme heat. A few days ago I obtained from Mr. Goodfellow's collection an exceptionally fine cock Green Broadbill as a mate for a hen I have had nearly a year; also a unique specimen of the insectivorous Red-and-black Broadbill, new, of course, to aviculture and a most quaint bird upon which I hoped to make many interesting observations. All went well until one ill-omened day when the repair of the electric cable necessitated the cutting off of the normal heating apparatus and the substitution of petrol heaters. In the evening the electric heating was resumed but, owing to a misunderstanding between my two aviary attendants, neither visited the bird-room to remove the petrol heaters. The result was that early next morning I found the birdroom up to a fearful temperature (it cannot have been far short of  $115^{\circ}$ ), and both poor Broadbills dead in their cages! Strange to say, however, none of the other inmates of the furnace—a Rajah Sunbird, a pair of Fairy Bluebirds, a Racket-tailed Parrot, a Layard's Parrakeet, three Blue-winged Grass Parrakeets, and a Rosenberg's Lorikeet were so much as panting!

It is almost superfluous to add that had the aviary attendants' mistake occurred on any other day of the 365 no damage would have been done as the heating apparatus in ordinary use can run for long periods without attention.

TAVISTOCK.

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## SUN CONURES

SIR,—During the summer a pair of Sun Conures (*Aratinga solstitialis*) occupied an aviary next to my Princess of Wales and Crimson-wing Hybrid. The latter is a lively bird and has a display in character somewhat intermediate between that of the parent species, i.e. he elongates his neck, maintaining a rigid attitude for a few moments while the pupil of his eye contracts and his plumage is drawn tight; then he makes a brief, rapid advance and resumes the more or less rigid attitude, uttering during the course of the performance various shrill cries. The display of Conures is, of course, utterly different; they ruffle their feathers, flap their wings, and engage in various grotesque squirmings.

The Sun Conures, to my disappointment and rather to my surprise, proved very delicate birds, adversely affected by any lowering of the temperature, although in excellent plumage and spirits. The accidental going out of the heater in their shelter one quite mild night resulted in both developing a severe chill which proved fatal to the hen. The cock on recovery was perforce condemned to a solitary existence in a cage in the birdroom and being very bored and lonely at once welcomed the arrival of a Bouquet's Amazon, to whom he proceeded to make advances when she was placed in a cage next his own. Strange to say, however, he conducted his courtship, not after the orthodox fashion of his race, but with all the calls and gestures of his late neighbour the hybrid! This appeared to me exceedingly strange, for not only have I never heard of a bird substituting the display gestures of another species for that of its own, but the Conure had been living in Conure society, i.e. with his own mate, as long as he had been in proximity to the stranger. One might imagine that he had taken to heart the Hybrid's scathing criticism of his amorous antics—"Call *that* a display! Why any decent-minded hen would think you had the stomach-ache! *This* is how it should be done!"

TAVISTOCK.

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White-and-Blue Kingfisher  
*Halcyon saurophagus* Gould.  
Plate presented by Alfred Ezra.

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THE WHITE-AND-BLUE KINGFISHER  
(*HALCYON SAUROPHAGUS*)

By A. EZRA

In May, 1929, Mr. Shaw Mayer brought home a wonderful collection of birds from Papua. I have never seen birds landed in such perfect condition, every bird being fit to show on any show bench. Among the birds he had three perfectly beautiful White-and-Blue Kingfishers which he got out of two nests and hand-reared. They were all perfectly tame, and would sit on my hand and allow me to stroke them. I took all three home and put them in a large aviary where they did very well till last autumn (1930) when they suddenly died within a few days of one another, I am afraid from the cold. I was very sorry to lose them, and really cannot make out why they should be more delicate than two or three other Kingfishers from Indo-China which I have had for over three years and are still going strong. I fed them on fresh fish cut up into narrow strips, and whenever I could get small fish in the river they were given as a treat. They would eat meat, but I think they much preferred fish. The coloured drawing by Mr. Roland Green reproduces faithfully the colouring of the bird.

## NOTES FROM A LANCASHIRE AVIARY

By JOSEPH APPLEBY

Some months ago there was a debate on "Possessions, or No Possessions", broadcast by the B.B.C. It was most interesting, both points of view having much in their favour. Personally, I took the side of the man with possessions. My wife took the other side, hence another debate of a more intimate character, and I still hold my possessions.

Now, birds are a possession demanding close personal attention, and if one is not overburdened with this world's riches and so cannot afford a paid attendant they are apt to restrict one's movements about the face of the earth or else are sacrificed by being left to the tender mercies of some well-meaning but unsuitable person not having the aviary sense, to use Lord Tavistock's phrase.

That such a sense is born, not made, I have evidence, and as I have no one to entrust my birds to my absences from home are short and the type of bird kept such as can readily be replaced at a small cost.

As probably my position is similar to that of many of the members of the Avicultural Society, there is a growing demand for information upon the maintenance of this class of bird.

In the first instance, having made up one's mind that the Finch or Seed-eater is the class of bird we intend to keep, the kind of aviary is to be decided upon. Presuming that foreign Finches are kept in quantity and one wishes to give them as good a time as one can in England anywhere north of the Trent, two-thirds shelter and one-third flight is the proportion I would allow, the shelter to be made to close completely and be heated at any time of the year. A detail that is seldom emphasized in regard to the flight is the height: this, in my opinion, should not be more than 8 feet. If higher the birds keep at the top and are difficult to see against the sky and are also difficult to drive in at night when necessary. An opening high up near the roof of shelter is very useful for this purpose, but I prefer the main entrance to be of ample proportions nearer the ground, say, 3 feet up. All food and water to be given in the shelter; no vermin are then attracted.

In my last notes, Vol. VIII, No. 1, I mentioned that I hoped to correct my mistake in not allowing more indoor accommodation. This has now been done by converting a room 15 by 10 feet into a bird-room, and if any reader happens to have a copy of the Magazine for October, 1924, he will find therein a description of my aviary. Last February I converted what had been my photographic dark room into a bird-room, very little alteration being necessary; the principal one was enlarging one window and glazing it with Vita glass and removing the old wooden shelter that was falling into decay and was of no further use. In this portion of the aviary, which I call the *warm aviary*, are lodged all the birds that are inclined to feel our cold, damp winters—Gouldian, Masked Grass, Bicheno, Cordon Bleu, Lavender, Pectoral and Bengalee Finches, Golden-breasted, Senegal and Orange-checked Waxbills, Silverbills, Fire Finches, and Combassous. Though I have had Fire Finches, Senegal and Orange-checked Waxbills in the other or cold aviary, I thought they would be happier in the warm aviary, the temperature of which I maintain as near 60° F. as possible, the room having a radiator on the central heating system of my house and being thoroughly ventilated. This room acts as a sanatorium for birds out of sorts, they being put in separate cages and fed and doctored according to their complaints. So far it has come quite up to my expectations and I think has saved me many birds. So much for the housing of small birds. Feeding is the next and most important problem. I can only give my own methods and mixtures, evolved after some considerable experience, as suitable for various classes of birds, from Weavers, Whydahs, and Canaries to Cordon Bleus and Golden-breasted Waxbills, including Peking Robins and Java Sparrows. All birds have the following mixture, of which I buy 112 lb. at a time: 50 per cent white millet, 25 per cent Indian millet, 20 per cent small canary seed, and 1 per cent of each of the following seeds: red millet, hemp, teazle, maw, and niger. In the cold aviary, where are the larger and hardier birds, is a hopper of the largest canary seed I can buy, and about an ounce of Spratt's cod-liver oil cage birds' food is mixed fresh each day and placed in a shrimp pot for them, and I may say is completely cleared up before the next day.

The warm aviary birds have the mixture as above but no hopper of canary and no soft food (they won't take it), but they are provided with spray millet and in the season as much grass seed as I can find. I have tried them with all kinds of so-called live food, but to no purpose, perhaps because they get a liberal supply of mealworms; even Gouldians will take them readily, which points to the fact that most seed-eaters will take live food at times. The trials and tribulations of an aviculturalist who keeps these small birds are many and varied, but they are soon forgotten when one sees fifty or sixty bright-coloured, active, and vociferous little birds enjoying life in the warm sunshine of our summer days. The critical times seem to be three in number: when first imported, the first month in England, and nesting-time, particularly if the latter falls in our cold weather period. All authorities agree that freshly imported birds should be caged for a month at least; even then one may suffer severe losses due to many causes, such as change of diet, water, or chill caught in transit from shop to aviary, or even to fright. If birds could tell us where the trouble was! I find diagnosing a complaint very difficult and correct treatment worse: far better to try to avoid illness. This, I am sure, can best be achieved by providing warm sleeping quarters for newcomers. If in poor condition, as they usually are, a drop or two of Parrish's chemical food in their drinking water will help tone them up. Later on, when their feathers are coming to normal, a drop of tincture of iodine in the water gives a final tonic. Indicative of the fact that they like the flavour of Parrish's, I have a cage in the warm bird-room always ready, clean sand, seed, and water plus Parrish's: this I have been in the habit of leaving open. I notice that several birds go to drink there in preference to the large bathing-place of running water. The drinker is usually nearly empty each morning.

Pneumonia, enteritis, or diarrhoea are the chief troubles I have to deal with, and I can only say that those I save are few once attacked, for on symptoms showing it is nearly always too late to begin doctoring. Those birds that over-eat (fortunately few) one only discovers when they drop dead in apparently perfect condition. Constipation may be cured by castor oil or a crystal or two of sulphate of soda in the drinker.

Moulting is best treated by giving Parrish's, cod-liver oil food, and warmth; that is, of course, if the moult is excessive or difficult in the cold periods. This usually happens in our winter or spring with Southern Hemisphere birds, so take care that new birds during their first moult have warmth and nourishment. As regards nesting times, the harder you can keep the birds the better the results, but I have found it useless to try to harden semi-tropical birds in this part of England. They may stand cold but they cannot stand damp. The alternative is a room large enough for wing exercise, kept scrupulously clean, well ventilated, yet warm. My Zebra Finches are and have been for years in the cold aviary. They stand the cold and damp and are a very robust little flock of sixteen at present. Grass Finches and Gouldians I have to close up for the winter in October: some of the others might stand the hardening treatment, but I doubt it. I cannot claim any success in breeding the above-mentioned Australian Finches, in two seasons having lost breeding hens through cold.

To sum up, warm sleeping quarters, plenty of light and air, clean, sound seed, plenty of fresh water, running if possible, and scrupulous cleanliness are essential to good results in aviculture.

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## ODDMENTS

By Capt. JOHN S. REEVE

For some weeks, or even months, I have been intending to send a few odd notes to the Magazine, and Mr. Workman's article in the October issue has brought me to the scratch! I would urge with all the insistence that I possess that a fresh attempt be made to carry out his suggestion in the latter half of his first paragraph. An index published *at least every 10 years of articles on particular species* indeed "would be worth untold gold"; many species that we keep are not to be found in any book one possesses apart from the fact that if they were no advice would be found as to keeping them in confinement, and the index as described above is the one thing that would often help us, and for some months past I have intended to write and advocate it. Twenty-seven years may have impressed this fact on our readers.

Mr. Editor, and I suggest you tell us in your next issue how much it would cost us to have an index for the first thirty years and thereafter every ten years; from your note I gather we are thirty-five years old, so that we should get another index five years hence: if all members will agree to pay I will certainly pay my share.

I had the same misfortune this year with my Californian Quail, the hen dying during incubation, but her husband did not prove such a good father as Mr. Workman's! She laid in a Parrakeet nest-box which had been left on the floor and, not knowing the eggs had been incubated, I gave them to my keeper to put under a Partridge and I believe they all went off pop! Last year the same pair hatched eleven young which I fed for some time on the food my keeper was rearing some small Pheasants with and live ants' eggs: when about half-grown five died within ten days; I had also been giving them latterly Indian millet; I knocked off the Pheasant food (egg, biscuit, etc.), continuing the ants' eggs as long as I could, and they got on to seed entirely, and the deaths ceased and three fine young cocks and three hens went away to India.

In the same aviary a horrible scandal occurred, a cock Blue Budgerigar making love to a hen White Java Sparrow, following her everywhere she went, kissing her, and never leaving her; she did not seem to resent it unless he became a bit too familiar, when she would give him an occasional peck! The Javas bred in 1929 but not in 1930, nor did the Budgerigars, and presumably Mr. Budgerigar's love craze broke up two happy homes.

I have very little success to report for last season. Golden-breasted Waxbills built in a birch faggot and laid four eggs, which began to hatch on 6th October. On the 26th two young flew, and these are to-day (9th December) showing a pinky mark on the beak and just a touch of yellow below the throat, the bills having been black and the general coloration greyish brown, wings darker; they have been out of doors everyday, and nothing but millet (both kinds), canary, and soft food have been available.

Record of one pair of Fischer's Lovebirds as follows: 15th February, two young left nest strong on wing. By 10th June five more young had left nest. 21st August, one young one left the nest. 16th

November, three more young left nest ; these eleven young were all hatched in same nesting-box in which she is now sitting on five more eggs ! She shows no resentment at examining eggs or young in the nest. Finally, a note *re* Professor Ghigi's and J. Delacour's article in the August number, p. 201, last paragraph : " The Dusky Pheasant " —is this what is known among game preservers and keepers as the " Melanistic Mutant " ? If so, my keeper got some eggs from his brother this spring as I was anxious to investigate these birds, and as a result quite twenty cocks and six or more hens were reared and four cocks and unfortunately four hens were shot ; these latter answer to description in above article as regards coloration, but as regards size these birds are all certainly smaller if anything than " the Common Pheasant " ; I have not eaten them yet, but have been told that their flesh is easily distinguishable, being so *very* good. Now, as regards the cocks, mine certainly do not answer to description given, being metallic green on back shading to purplish on breast and flanks (no red marks on flanks) ; centre of breast and belly is at present dusky grey.

No one seems to know their origin ; can anyone tell me this or give further notes about them ? They are certainly very handsome.

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## FURTHER NOTES ON THE ANTIPODES ISLAND PARRAKEET (*CYANORHAMPHUS UNICOLOR*)

By THE MARQUESS OF TAVISTOCK

Having now had the opportunity of studying the behaviour of this rare and curious bird, further notes on its habits may be not without interest.

For some weeks after arrival the Parrakeet was kept in a flight cage in the bird-room where, on account of the presence of new additions from tropical lands, the temperature was kept rather high. When dealing with a species almost new to aviculture and known to be unlike most of its relatives in its mode of life, one is always rather in the dark as to what the best kind of treatment may be. Antipodes

Island, from all accounts, possesses a most ungenial climate, but at the same time I was uncertain about the wisdom of turning out in late autumn a bird which had recently passed through the tropics. For a time the Antipodes Island did well enough, but there came a day when I did not like the look of her though she showed no very definite illness. She seemed mopy and off her food, and thinking that the bird-room was too stuffy for her I decided to take the risk of moving her into one of the Finches' aviaries which had a heated shelter and an outdoor flight. In a couple of days she was a different bird, and all need for anxiety vanished and in time she was promoted to one of the movable aviaries where at present she is having no heat at all, has finished her moult, and is in show condition.

On turning her out I discovered certain interesting peculiarities due no doubt to her entirely terrestrial existence in her native haunts. Unlike any other psittacine bird I have kept, she cannot climb wire netting with beak and feet—she can only fly up and cling to it without moving. She is also quite incapable of perching on twigs. Thick perches she can manage and uses freely, but with the rather clumsy action of a domestic Pigeon whom Nature intended to negotiate rock ledges only. She is a very lively bird—in fact the most active and restless Parrakeet I have ever kept, constantly on the move, flying up and down the aviary and running along the perches and about the ground for long periods at a stretch. Some of her calls are very like those of the Norfolk Island—a soft, plaintive murmur and a kind of nasal bleat, but in addition she has a rather louder call of seven syllables, "Kitty-te-kee-te-kittuck" also uttered with a nasal and "tinny" intonation. Her plumage has the appearance of being very thick and she is supremely indifferent to the beastliest weather; in fact a cold fog accompanied by frost exhilarates her more than anything else! She is not exactly tame but is very fearless and inquisitive, approaching readily to within a couple of feet or less. She has plenty of sense and learned her way about the aviary and in and out of the small entrance hole leading to the shelter without the least trouble or delay. She goes into the shelter at night of her own accord, roosting on a ledge, or on a perch if one is provided thick enough for her comfort. She still obstinately refuses to vary her diet

of sunflower seed and grass, although I am not altogether sure that the former suits her inside as well as I should like. I credit her with belonging to the female sex, partly because of the shape of her head and partly because she has never at any time performed anything approaching to a display.

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## THE BREEDING OF THE BLUE-HEADED WAXBILL (*URÆGINTHUS CYANOCEPHALUS*)

By A. DECoux

In May, 1927, Mr. Chapman received a consignment of birds from Tanganyika Territory containing Blue-headed Waxbills among other rarities. They had never been brought over to Europe. All these Waxbills did not remain in England, and I was fortunate enough to find two pairs at a bird-dealer's in Paris in October. They were in very good condition and I brought them home hoping to breed from them some day! Unfortunately the cocks died during the winter without any noticeable cause; they had not appeared to be ill a single day. The body of the second cock that died was sent to a veterinary surgeon, who did not find anything wrong with it. They may have been frightened during the night and have killed themselves against the wire bars of their cage. They were living then in a large cage in my bird-room. The remaining hens spent the following year in a large indoor aviary with other small birds. In April, 1929, I let them fly in an outdoor aviary containing Grass Finches and Waxbills, among which were two pairs of Senegal Cordon Bleus. One of these died egg-bound in May and I did not replace her. The widower very soon began to court one of his Blue-headed companions: with a stem of grass in his bill he sang and displayed before her. The nest was made in a deal box in the shelter of the aviary; it was built with fine hay and feathers, like all the nests of the Cordon Bleus. When I examined it about a fortnight later it contained nine eggs: it was evident that both hens had laid in it. They incubated these, with the cock, sitting by turns. Only four eggs hatched out, so one may infer that the cock paired with one hen only. However, the two hens fed the

youngsters, which left the nest when about three weeks old. Like all the young Waxbills they were fed on millet, flowering grass, and small insects, chiefly the small red meadow ants and their cocoons, and also very small gentles. When they left the nest the little birds resembled young Cordon Bleus with more greenish blue on the forehead and on the breast. The bill was dark bluish-grey with a black tip and a dark blue wart at each corner; with young Cordon Bleus the warts are light blue and the bill is black. The young began to feed themselves when ten days old.

The parents built another nest in the same box and reared three other young, which left the nest in August. A third brood was hatched in late September, but the young died when a few days old on account of the bad weather or perhaps for want of proper food.

At the end of the autumn the young of the first brood were in colour. The hens were not distinguishable from their mother. As to the male birds they were very much like the cock Blue-headed Waxbill, but when examining them carefully one could notice a *purple* patch on the ears, where the Cordon Bleu has a crimson one. They spent the whole winter in an outdoor aviary without any artificial heat. I hoped they would breed last year, but though a few nests were made no eggs were laid. I have three cocks and four hens. . . .

The same year (1929) hybrids between the Blue-headed and the Blue-breasted Waxbills were bred in Germany. Unluckily no description of these was ever published. . . . They were fertile when mated *inter se*. (*Die Gefiederte Welt*, 1930, p. 606.)

On his way to Madagascar M. Delacour bought a lot of living birds in Dar-es-Salaam and sent them to Clères. A few of them came into my possession: there were two cock Blue-headed Waxbills, a few Paradise Whydahs of the Eastern race, a pair of Melba Finches, and two *Pseudonigrita emini*, a lovely species which had never been imported before, but which unluckily did not live long with me. I kept these birds in a bird-room till the end of May and then paired the cock Blue-headed Waxbills with the hens. But the month of June was so bad over here that one of the cocks died within a few days after I had let them fly in the outdoor aviary. The other cock paired with one of the hens and building operations began about the middle of July,

the cock taking the materials to the hen, who deposited them in the deal box in which the hybrids had been reared the year before. The Cordon Bleus had been taken out of the aviary, so one of the hens had no mate. However, both hens laid in the nest, which contained seven eggs when I looked into it. Only three hatched out, and three young were reared with insects and small seeds. When quite young they were covered with grey down; the small black phosphorescent spots in the inside of the bills were not disposed as with the young *U. bengalus* or *U. c. angolensis*; the skin at the corner of the bill was very dark, instead of being sky-blue.

About the middle of August I saw them sitting close together on a privet twig. The weather was very bad then. A few days later when I looked for them among the shrubs of the aviary I found only two, the other having totally disappeared. At this age they were not very different from the hybrids of the preceding year; the bill was almost all black and they had more blue on the top of the head.

It took them a long time to assume the adult plumage, and the cock was not in full colours before the middle of October. Now he is quite indistinguishable from his father. The other young one is a hen.

To my knowledge this species had not been previously bred in France, but I believe it had successfully mated in Germany in 1929, though I cannot be positive about it.

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## THE BLUE THRUSH IN SICILY

By SYDNEY PORTER

Though not confined to the fair isle of Sicily this lovely bird is one of the best known and most eagerly sought after species which inhabits the land which is dominated by the towering volcano of Etna.

It is not common, neither does it thrust itself upon one's notice, but most visitors to the island manage at one time or another, unless they are of the type who oscillate between the meal and the bridge tables all day, to see the beautiful blue form of this sweet songster.

This charming bird has always intrigued me, and for a long time I have tried to obtain examples but without success. They seem seldom if ever advertised for sale in the bird papers, and dealers seem

hardly ever to get them, though I believe they are sometimes to be obtained in Germany, where they are sent from Southern Europe. So I was delighted to find when arriving in Sicily at the beginning of last year that the bird was comparatively numerous in the mountainous districts around Etna. But though quite a few people seemed to possess examples, hardly anyone seemed willing to part with their pets.

I was introduced to a gentleman who lived in Taormina and possessed five of these birds which he had reared from the nest, but he was not willing to part with any. There was another bird owned by the proprietor of a small hotel in the main street. It was a very poor bedraggled creature and 500 lira was asked for it which was out of all reason.

I went around in search of others, but owing to my Italian being limited to about three words we never got beyond the initial stages.

Usually the birds were kept in cages far too small for them, which were never cleaned out and often kept in the semi-darkness of the one-roomed Sicilian house. The one at the hotel mentioned previously was kept, on wet days and at night, over the kitchen range, and when I found out that the cage had only a wire bottom I was very glad that I had taken no meals there!

One day I met an old and very eccentric German count who had a collection of birds, mainly Canaries. These, too, were kept in a very dirty state. He informed me that he knew about every bird in the world, but when I questioned him about the names of certain birds he told me that he never bothered about such trivial things, it was only the songs he learned to know and not the names!

However, he had two very beautiful Blue Thrushes, and when I told him how anxious I was to obtain one, he at once offered to sell me the younger bird at a very reasonable price. The older bird was the brightest coloured specimen I have ever seen. The head was a brilliant sky blue, the rest of the body a very rich smoky blue, and the breast feathers delicately pencilled with light grey. He explained to me that this bird was brought to him over seven years ago almost dying, and with care it had developed into the lovely creature that I now saw. The bird was ridiculously tame and upon

seeing a stranger it would at once burst into a torrent of song. The other bird, which I purchased, though not so brilliant as the older bird, was exceptionally large and in a very different condition from the ones which the peasants usually have.

Another of my birds came from an aged couple. I first saw the bird hanging outside their tiny shop, the only commodities seeming to be a few oranges and lemons and a basket of beans. Our first conversation was a failure, I knew no Sicilian and they spoke no English, but another day with the aid of a little boy who spoke quite good English and who acted as interpreter, the bird was secured.

The parting with their treasure was quite touching. I called late one evening to take my bird away and found the old couple like Darby and Joan sitting in the dim light of a burning rush, over the smouldering embers of charcoal in their old copper brazier with their pet hung close by their side.

I was given many words of advice, but I never knew what they were, and just before the parting they both took the cage and, pressing their aged faces against it, whispered soft words of farewell and kissed the bird in turn. I was almost sorry to take the bird away, but I knew that it would have a better home and, with me, a bird's feelings always come first.

The first bird that I saw in Taormina I endeavoured to buy, but as the price asked was extortionate I did not become the purchaser. But as the weeks went on and as I saw the poor creature gradually wilting and fading away through being fed on unsuitable food (I believe that it was fed on raw meat and that only when the owner remembered to feed it), so I couldn't resist buying it and eventually the poor thing became mine. But I was afraid that I had left it too long, for when I carried it down to my house by the sea, its feet were so bad that it couldn't stand, but with care it revived and in time became one of my best birds, in fact it became so tame that it would fly on to my hand, then on to my shoulder and nestle up against my neck. I had to feed it by hand for the first few days as it was in such an emaciated condition.

The "Merle Bleue", as it is known to the natives, is essentially a bird of the high rugged mountains of Southern Europe. It appears scarcer in Central Europe than the Common Rock Thrush. This

latter bird is only found in Sicily as a rare passing migrant, but the Blue Thrush is a resident all the year round. I have often seen the bird on the precipitous but fertile hillsides near the sea and very lovely it looks when seen from above. The plumage appears an intense blue in the brilliant sunshine, though when the bird is seen against the light it appears quite black.

It will even visit gardens on the mountain sides, and a lady of my acquaintance told me that it sometimes sang its rich, full melody from the window ledges of her house overlooking the sea. Once when sitting at the foot of a high cliff by the sea one of these lovely birds came and perched on a rock within a few feet, and most beautiful it looked, the sunshine intensifying the blue against the white rock, but as soon as it became aware of my presence it was off in a flash.

The few times I have heard the full sweet song sung in its real and romantic setting have been red-letter days in my life; sometimes when wandering in the mountains just behind the coast or coming down from a tiny hill village perched in a seemingly impossible position on the topmost point of some mountain peak, and when the sun had sunk behind the snow-capped peak of Etna and everywhere seemed bathed in a soft subdued golden light. Everything was still and silent; all Nature seemed to be resting after the burning heat of the day and taking a breath before settling down for the night.

The stillness in those rarified regions is remarkable. Odd sounds float up from the valleys below, the sound of an age-old Sicilian air played on the pipes by some fair Sicilian shepherd youth as he drives his flocks homeward, or perhaps the distant tingling of the goat-bells. Over all seems to brood the "peace that passeth understanding", when suddenly there bursts forth from some rocky ledge the rich pure cadence of the song of this lovely bird. The still clear air rings with it as volume after volume is poured out as the bird sings its evensong. I once heard the sound of distant church bells mingling with the sweet flow of the feathered songster, forming a wonderful combination of sound which I shall never forget.

The Blue Rock Thrush is not classed as a true Thrush: why, I do not know, for in every way it appears to be one, except perhaps in some ways in its demeanour. It seldom, if ever, is seen perched on

trees but always on some rocky boulder or among the loose stones on the rugged mountains. The nest, which is exactly like those built by other Thrushes, is placed in a crevice or niche in the face of the rocks and it is very difficult to detect as the birds are extremely wary, but it is eagerly sought after by the peasant boys, who take the young and rear them, selling them to the people in the towns. Nearly every Blue Thrush which one sees in captivity in Sicily has been procured in this way. The nest usually contains from three to five blue eggs. The young are hatched in late April and May.

On a rocky and precipitous headland near where I stayed lived several Blue Thrushes, but these birds were so wild and vigilant that one seldom caught sight of them; but if one wandered there in the evenings and sat quietly until dusk came, as I often did, one was almost sure to hear the evensong of these birds usually perched far out of sight on some rocky ledge on the face of the cliffs above the sea, and occasionally one would catch sight of one of the birds themselves as they flew towards their roosting-place in the twilight.

No bird is more elusive or more intolerant of observation than the Blue Thrush, and the second it notices that it is being watched it will slip quickly and silently out of sight.

Both the bird and its songs seem to belong to the great wild mountain ranges, beetling cliffs and great solitary places of sunny and romantic Sicily where the great silent valleys seem to intensify its rich full song and the brilliant sunlight the exquisite blue of its plumage. I often think that the birds lose a deal of their charm when taken out of their proper setting.

I once watched one of these Thrushes for nearly a whole morning. It was singing its song on a rugged promontory in the sea. There was rather a heavy tide running at the time and the bird was perched within a few feet of the spray of the waves; in fact I could only hear the song very intermittently owing to the roar. At intervals the bird would make a search of the crevices in the rocks only a few feet from the water line, so evidently the birds which frequent the sea coast must to some extent feed upon small crustacea.

In captivity the Blue Thrush makes a most delightful pet; in fact, if I were restricted to a single bird for a pet I would choose a Blue

Thrush. Most specimens are unusually tame and intelligent, but in some ways they have their drawbacks, for they are terribly pugnacious and cannot be kept with safety with any other bird either of their own size or smaller. When two of the same species are put together a deadly combat is at once commenced.

The birds are very long lived, and I think specimens have been known to reach the age of twenty years.

They are easy birds to cater for, a large cage, a good soft food, and a bath, also several stones for the birds to perch on—if these are not given their feet soon go wrong. Given these conditions I know of no bird that will bring more joy to its owner with its rich sweet song, lovely plumage, and charming ways.

[In the third volume of the *AVICULTURAL MAGAZINE* (1897) the late Mr. Hubert Astley gave a very charming black and white sketch of the Blue Thrush, which he knew well both wild in Italy and in captivity. He successfully reared a brood of five from a wild nest in Italy, and was so delighted with the species that he concluded his account by saying, "I shall never be without a Blue Thrush, if I can help it, as long as I live."—ED.]

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## REMINISCENCES

By JAMES B. HOUSDEN

It is now forty-two years since I moved with my aviaries and birds from North London to my present address in Sydenham.

Some time afterwards the late Dr. A. G. Butler called on me and we had a long conversation about starting a magazine relating to foreign and British birds.

I remember our present Editor, Mr. D. Seth-Smith, was the first one I wrote to, and I have always thought it was a mistake for his name not to be on the list of original members; for he took the greatest interest in our starting the "*Journal of the Avicultural Society*". [But was just too late to join with the first issue.—D. S-S.]

Our Committee was formed in 1894, and the first number of our Magazine was issued in November of that year. It was edited by

Dr. C. S. Simpson and Mr. H. R. Fillmer. We commenced with a membership roll of 50.

About the same time, when I was on another committee, a large bazaar was to be held to raise funds for a new church in the neighbourhood. One item in the programme I objected to, and was asked if I would fill the programme in the event of this item being withdrawn. I suggested that, if they gave me a large room, I would arrange the first foreign bird show ever held in connection with a bazaar. My suggestion was approved, the show held, and it proved a great success.

The following appeared in a local newspaper: "A NEW DEPARTURE IN BAZAARS—A FOREIGN BIRD SHOW. . . . The great feature of the bazaar was an exhibition of live foreign birds from a private collection, which is one of the best in the United Kingdom, kept by Mr. J. B. Housden, Brooklyn, Cator Road, Sydenham. All the proceeds went to the Bazaar Fund, which benefited largely by the show. On the first day alone some 400 visitors paid to view the exhibits, which were in a large well-lighted hall. The hall was tastefully decorated with flags and some very fine paintings of birds, some large cases of bright plumaged birds, and a fountain (with goldfish) throwing up its silvery spray in the middle of the hall; besides this a large quantity of palms and flowering plants were placed between the cages and in different parts of the hall, forming quite a tropical promenade; in fact it was one of the prettiest sights we ever remember seeing. The birds, some 400 in number, were contained in a large number of cages and large aviaries, all labelled with their names and the names of the countries they inhabit.

"In one aviary were seventeen Rosella Parrakeets in gorgeous plumage, quite a living picture; in another four Golden Pheasants not less beautiful; in several other aviaries, seven very beautiful Blue-bearded Jays from South America; twenty Weaver and Whydah birds in full plumage, some with very long tails; Gouldian Finches; a fine collection of foreign Pigeons and Doves, some as large as domestic Fowls, others not much larger than Sparrows; Scarlet Tanagers, and other bright birds from South America. A special attraction was a pair of Indian Racket-tailed Drongos, which are extremely valuable birds; and last, but not least, were several Macaws on stands that

guarded the entrance to the show. Some of the peculiar nests of the Weaver birds were also to be seen."

Some time afterwards I sent my birds to a local flower show as an additional attraction. A large number of people paid to see the birds, in addition to other charges. I have always been struck by the attraction that live foreign birds have for all classes, from Royalty downwards.

In August, 1896, two ladies called on me one afternoon, asking for the loan of some cases of birds in connection with a bazaar in aid of the Re-Endowment Fund of Guy's Hospital: this bazaar was to be opened by H.R.H. The Duchess of Albany.

I suggested instead of stuffed birds we should send live ones and they were very pleased with the idea. This bazaar was held in some beautiful grounds some miles from here. I had a large tent which I decorated inside and out, with a large banner outside, "Foreign Bird Show."

Our tent was crowded all the afternoon. I had the pleasure of explaining all the birds on view to the opener of the bazaar, who spent some considerable time in the tent.

Our Foreign Bird Show was a great success in every way; next to raising funds for the bazaar, my aim and object was to make new members for the Avicultural Society. Several ladies wrote to me asking for information about our Foreign Bird Society.

I have sent my birds to bazaars in connection with Dr. Barnardo's Homes and other Institutes.

On two occasions I lent my birds to the Salvation Army at their large exhibitions at the Royal Agricultural Hall, London; I had a very fine collection of Parrots there, and as soon as the exhibition opened visitors wanted to purchase many of the birds, but these were not for sale.

Several years afterwards, at the second exhibition, I arranged with the late Mr. J. D. Hamlyn and another dealer to supply me with similar birds to those at the exhibition. During the four weeks about eighty Parrots and other foreign birds were sold; the profit from these I sent to Mrs. Booth's social work.

This exhibition was their triennial exhibition (held July and August,

1899). I sent a number of Macaws and Cockatoos on stands. These we found could not go inside the panteachnicon vans, so it was suggested they should go on the top, and the vans covered with bills advertising the exhibition. As they provided the vans, I had no objection providing my name was not used. It was quite a unique advertisement in the long ride from South to North London.

One other exhibition I should like to mention, "The Orient," in London Agricultural Hall, 4th June to 11th July, 1908. One of the oldest members of our Society (and still a member) very kindly sent me the two following reports: "BIRDS AT THE ORIENT IN LONDON. Mr. Housden, a well-known aviculturist, has kindly lent a large number of birds from his aviaries at Sydenham in order to add to the attractions of the interesting exhibition at the Agricultural Hall. On a raised platform cages and aviaries contained examples of various Cockatoos, Parrots, and Parrakeets, all in excellent plumage and very tame. Indeed, some of them are so fearless that they are allowed their liberty; a Blue-fronted Amazon is often to be seen perched on the outside of its cage, the door of which stands open, and the bird takes short flights round the hall, as does also one of the Parrakeets. . . . In the 'Indian Village' cages full of exotic Finches and Weaver Birds attract general attention. Many palms and other fine trees and plants are here, and attached to some are the nests of the Weaver Birds. Even the Birds of Prey are represented, for in one large aviary are two Caracaras, Eagle-like birds from South America, which live in amity with a Brown Buzzard; and close by is a fine Eagle-owl which answers to the name of 'Bob' and is a great favourite with its owner.

"In the large aviary, a structure of considerable dimensions, are shown Silver and Amherst Pheasants, foreign Pigeons, Quails of various species, and South American Rails, all in good plumage and quite as much at home as they would be in their own runs. . . ."—*Queen*, 4th July, 1902.

The other article is from the *Field* newspaper, same date. As this is similar to the above I am putting in its place another report sent at the same time by a popular writer whom, I believe, at the time was not a member of our Society:—

"BIRDS AT THE ORIENT. Last week I paid a visit to the Missionary

Exhibition (London Missionary Society) at the Agricultural Hall in order to see a collection of birds belonging to Mr. Housden, a well known member of the Avicultural Society. They are certainly well worth a visit. The Parrots—using that term in a wide sense—were in excellent feather, and their owner gave me a practical demonstration of their tameness. Undisturbed by the noise and multitude of people passing to and fro, they allowed me to handle them and to fondle them as if they had known me for weeks. . . One Sulphur-crested Cockatoo had been in Mr. Housden's possession for thirty years. Besides these were Slender Bills, Leadbeaters, Rosy, some fine Yellow Budgerigars, Giant Kingfishers, and a host of other birds. In a very large aviary adjoining a Kafir kraal I saw Mr. Housden is a firm believer in the value of green stuff for his Pheasants, for there was a plentiful supply. Mr. Housden gives popular 'bird talks' . . . and no doubt one effect of his exhibition at the Agricultural Hall will be an addition to the ranks of aviculturists."

There was no charge to see the birds (the only time). Another gentleman and the writer arranged the "Indian Village and Kafir Kraal", and the birds took the whole of the central floor space of the hall.

Much more could be written of these long "forty years"; perhaps some of our younger members may have the opportunity of doing two things: helping some good cause and interesting the visitors in foreign birds, and so add to our members' roll by the loan of foreign birds.

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## FLIGHTLESS OR OSTRICH-LIKE BIRDS

By J. DELACOUR

The Ratites are a special race of birds which unlike all others (Carinates) have flat sternums without a keel. They are usually larger than other birds, their legs are very strong, and their wings more or less reduced and useless for flight. Their skeletons are massive, their feathers soft and decomposed.

Their chicks seem mostly to belong to a more ancient period when



*Photo D. Seth-Smith*

OSTRICH  
*Struthio camelus*

flightless birds were far more numerous and more widely distributed than they are to-day, when only five families exist: Ostriches in Africa, Arabia, and Asia Minor; Rheas in South America; Emus in Australia; Cassowaries in the Moluccas, Papua, and North Australia; and Kiwis in New Zealand.

All the Ratites are terrestrial in their habits, but their ways of living differ according as they inhabit deserts, steppes, or forests. We will consider this with each group.

In confinement they require all the space possible and are to be treated as mammals rather than birds. Rheas and Emus are hardy and may be looked upon as field birds and allowed semi-freedom. Ostriches in Europe require shelter during winter although they soon adapt themselves to our climate; but their strength and savagery oblige them to be kept in enclosures. It is the same with the Cassowaries, which are extremely irritable and usually dangerous.

The Kiwis, owing to their nocturnal habits and their peculiar conformation, must have special treatment.

Both Rheas and Emus breed freely with us. With them, as with the Cassowaries and Kiwis, only the cock incubates. The best way to rear the young in Europe is to allow him to hatch and then to remove the chicks immediately and keep them in a small room or well ventilated hut provided with a heated foster-mother. All the care the chicks require beyond keeping warm is feeding them on chopped greenstuff and crumbled biscuit with phosphate of lime added. Sometimes at first the young are slow in feeding and must be brought to it by hand-feeding; as soon as they have been prevailed on to taste they will feed readily. Should there be older chicks they will teach the younger ones to feed. They can be allowed out, if the weather is suitable, when they are three or four days old, and at a month they may be given full liberty provided they are shut in at night, which can easily be managed by feeding them in their shelter. From then onwards they will not require artificial heat, and at four months old they can sleep out of doors.

The eggs may also be hatched in incubators. Should the cock be allowed to rear the chicks the hens must be taken away to prevent them from attacking the young, and if the weather is bad the brood

must be shut in at night, which is difficult. Often, too, the cock tires out his chicks and sometimes kills them by making them walk too far. In any case the results are far inferior to those obtained by rearing the young in the manner above described.

Both the male and female Ostrich sit on their eggs, but it is better, generally speaking, to hatch them in an incubator. Young birds have been reared in France and Germany, but in tropical and sub-tropical countries—South Africa, Tunisia, Madagascar, and California—they are more at home and thrive. There a breeding pair are turned into an enclosure and the young when hatched are treated in the same way as the preceding species. The only difference is that they require rather more nourishing food and more protection, particularly against damp.

Ostrich breeding on a commercial basis, though not paying at present, chiefly on account of the change in the fashion, has been very important, particularly in South Africa, and several text-books have been written about it; but this is not the place to enlarge upon the subject.

#### THE OSTRICH

Ostriches (*Struthio*) are birds of the desert and barren places of Asia Minor and Africa. They emphatically belong to dry localities. There is only one species, *Struthio camelus*. Everyone is familiar with this enormous bird, bare-necked and bare-thighed, its body adorned with curled plumage grey in the hens, black in the cocks, with large white feathers in wings and tail. They only possess two toes on each foot and only the cock has a voice, a hoarse bellow in the breeding season. At that time he indulges in a curious dance, crouching with wings held away from the body and brought forward while he alternately strikes his back on the right and the left with his swelled-out neck.

The Ostrich in confinement eats every sort of greenstuff, maize, barley, biscuit, etc. The hen lays readily, often from 40 to 60 eggs per annum, but in our climate they are usually infertile. Incubation lasts about 45 days. At this time the cock bird often turns savage and dangerous.

There are five races of Ostrich, the chief difference lying in size and the colour of the neck and thighs of the cock.

THE OSTRICH (*S. camelus*) is a native of N. Africa, from south of Atlas to the Soudan and Nigeria; the cock's neck and thighs are red, and the crown of the head bare. The eggs are white or very pale.

THE SYRIAN OSTRICH (*S. c. syriacus*), from the Syrian and Arabian deserts, is rare, and was discovered only a dozen or so years ago. It is very like the preceding, but smaller, and the eggs are even paler. The last three Ostriches lay eggs with the shell pitted with tiny holes.

THE SOUTHERN OSTRICH (*S. c. australis*) inhabits South Africa and is now practically extinct in the wild state, but is bred in quantities for its feathers. Its neck and thighs are grey, and the top of its head is feathered.

THE MASAI OSTRICH (*S. c. massaicus*), of East Africa, has the top of its head feathered.

#### THE RHEAS

Rheas inhabit South America, where they are found from Peru and Brazil to Patagonia. They frequent the wide grassy plains.

They are considerably smaller than Ostriches and their necks and thighs are completely feathered; they have three toes and no tail, but their wings are very wide and adorned with long wide supple but weak feathers. When they run they often spread them in a peculiar way. The hen is dumb, but the cock in spring utters dull bellows; he then displays by ruffling up his head feathers and spreading his wings forward on either side of his breast.

Rheas feed entirely on green herbs and browse like sheep; they are very useful on the prairies, which they rid of many noxious weeds. To this, in captivity, a little powdered biscuit, bran, or potato or mangel wurzel may be added in winter. All the Rheas are hardy and have no need of protection. They breed freely in Europe. Although it is a good plan to pair off a cock and hen in an enclosure one can, given a sufficiently large park or meadow, keep a flock of both sexes together, for the combats in spring between the cocks are unimportant if there is sufficient room, the only objection being that there will be more infertile eggs. Rheas do not pair and the hens are fertilized by

any or every cock. She lays near the nest, a simple depression in the ground, prepared for her by one of them, the cock then collects the eggs, which when newly laid are a fine orange yellow, but afterwards turn white, and begins to sit as a rule on five or six, though he may take eight, while the hen goes and lays near another cock. Incubation is undertaken by the cock bird entirely and lasts about forty days.

We said further back how best to rear the chicks. Their food should consist during the first fortnight of chopped white clover and spinach mixed with powdered biscuit. Later dandelion and beet are excellent and the proportion of biscuit should gradually be increased, but bran or cooked potato are just as good and phosphate of lime must never be omitted.

Rheas are inoffensive to all other animals and it is seldom that a cock turns spiteful to the young ones. Their flesh is good to eat as well as their eggs.

There are two species.

THE COMMON RHEA (*Rhea americana*) is a large bird; his thighs are entirely naked. He has a large head and beak, a long neck, and stands high. There are three forms.

THE GREAT-BILLED RHEA (*R. a. americana*) from the north-east of Brazil, is blackish-grey brown, with the sides of the head, lower part of the neck, and under-parts dull white; the interscapular region is dark brown, together with a patch on the breast. This Rhea is rarely imported and would doubtless prove delicate as it comes from the tropics.

THE INTERMEDIATE RHEA (*R. a. intermedia*), from South Brazil and Weugai, is somewhat smaller, ashy grey with yellowish white neck, and the interscapular region grey. It is hardly ever imported.

THE GREY RHEA (*R. a. albescens*), from the Argentine, is the species which has so well become acclimatized in Europe. It is large, ashy grey, with a considerable part of the neck black as well as the pectoral patch.

THE WHITE RHEA is only an albino variety of the above fixed by selection; it is snowy white with more or less decided black marks round the neck; blue eyes, and the beak and feet yellow. The young ones are white with grey spots.

White Rheas are no more delicate than the grey when adult, but the young are less robust and the proportion of infertile eggs is higher. It is far more ornamental.

DARWIN'S RHEA (*R. darwini*) is a very distinct species, a little smaller and shorter-legged, with rounder head and shorter beak; the upper part of the thighs is decked with small feathers. It is light grey all over and all the large feathers have white tips, which gives it a fine, fleecy appearance. This species comes from South-East Argentine, Chile, Peru, and Bolivia. Although it lives in cold regions it is not nearly as hardy as the Grey Rhea in confinement. Heat upsets it and it dislikes dry grass. It should be treated like the preceding but kept on much finer turf with bran and sulphate of lime, or on bare earth.

This Rhea is rare in confinement and has only been bred twice in Europe by M. Blaaw in Holland a long time ago, and at Woburn in 1930.

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## AVICULTURAL NOTES

By THE EDITOR

### *Lammergeyers Breeding in Captivity.*

At a recent meeting of the British Ornithologists' Club, Mr. H. M. Wallis produced a copy of the Bulgarian *British Review* in which there was an account of the breeding of the Lammergeyer in the royal aviaries at Sofia. The late King Ferdinand is well known as a keen ornithologist and aviculturist and he installed the aviaries several years ago. Lammergeyers, it appears, have bred there successfully for the past sixteen years, and the present King Boris is as keenly interested in birds, both wild and captive, as was his father. So far as I know there are no other records of such an event.

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### *Another Budgerigar Society.*

We are favoured with a copy of the first number of *The British Budgerigar Breeders' Society Official Journal*, in which we read that this new Society "has been formed to cater for the requirements and

to further the interests of *breeders*, and anyone connected with the commercial side of the fancy is excluded from membership. It is intended, when the Society becomes firmly established, to hold lectures and demonstrations, etc., to promote classes at shows in which entry is limited to birds bred by the exhibitor, and also to hold an annual breeders' show on our account, in which the whole of the entries will be from our own members and every bird shown bred in their own aviaries". The President of the new Society is Mr. F. C. Hedges and the Secretary Mr. J. D. Mander.

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#### *A General Index.*

Captain Reeve is very anxious to have a General Index to the past volumes of the AVICULTURAL MAGAZINE, and rightly says that such an index would be invaluable. Many of us greatly desire this and probably to no one would it be more useful than to the Editor, for he constantly has to look up references in back volumes and often wastes much time in searching for something which a General Index would have revealed at once; but such an index would be very expensive, and before undertaking its production it would be necessary to have some idea as to the approximate number of the members who would be willing to subscribe for it. With regard to the cost of such an index I may mention that if produced on the lines of our yearly index the cost for the whole of the thirty-six volumes would work out at something in the neighbourhood of £600. But thanks to an offer by Dr. Hopkinson to compile a more simple index, it may be possible to produce one. At any rate, the Council has the matter under consideration.

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#### *Weavers at Liberty.*

In our Journal for December, 1929, Mr. Gordon Maynard told of an experiment in liberating the Orange Weaver in his garden which proved entirely successful, and I believe that several of our members tried the same experiment in 1930. It would be interesting to hear their results. We tried it in the London Zoological Gardens, but without success. About fifty well acclimatized birds were let out by degrees, after some weeks' detention in a large cage on an island of

the Three-Island Pond. At first they appeared to stay fairly well and many nests were built before the cocks came into colour. They were regularly fed in their special cage, to which they regularly returned for food. They seem to have commenced to disperse when the cocks were coming into colour about the end of July and beginning of August, and by the beginning of September almost all had gone. In October I converted their cage into a trap by means of a wire funnel, and immediately captured five Weavers, apparently all that remained.

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*Superabundance of Sparrows.*

The failure with the Weavers may have been partly due to the quantities of Sparrows that frequent the Zoological Gardens. These had learnt how to obtain access to the Weavers' cage, and when this was converted into a trap it proved very useful in helping to reduce the Sparrow population. The keeper in charge counted his captures in dozens and long ago told me that he had captured thirty-two dozen. By now his bag must have reached about 500, and yet there seem to be as many Sparrows about as ever.

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*Two Attractive Catalogues.*

The Keston Foreign Bird Farm, in which Messrs. Boosey and Brooksbank have made the breeding and rearing of foreign birds a paying proposition, have issued a catalogue which will be found useful by those who wish to acquire rare and acclimatized birds from the lovely Turquoise, that a few years ago was thought to have disappeared for ever, to the familiar Zebra-finch. Another catalogue that will be found useful by Pheasant-keepers is issued by the Hundridge Game Farm of Great Missenden, who specialize in fancy as well as utility Pheasants.

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## CORRESPONDENCE

### BOUQUET'S AND IMPERIAL AMAZONS

SIR,—In reply to Miss Chawner's query, I am afraid my "capable management" has not been very successful with the Bouquet's Amazon.

After a few days I put it in an aviary. It seemed very restless

and anxious to get to the Imperial Amazons which it could hear calling, and sure enough it soon began to pluck itself. We caged it again and for some weeks it was quite all right; then again it started to pluck itself and seemed so restless and miserable that I tried it in another aviary. Here it has been rather more contented but still occasionally plucks itself, attacking not the upper part of the breast, as is usual, but the quills, especially of the tail, and the wing-butts. I feed it on plain seed with a little sunflower, plenty of pea-nuts, and apple, but I do not think it ever touches anything but the pea-nuts, sunflower, and fruit. As Miss Chawner says, it is fond of eating bark, but it will not touch butter, etc. I am sure this bird's trouble is purely psychological: it is miserable at being shut up and is even more tantalized by the partial liberty of an aviary than by the more inexorable confinement of a cage. In the spring I propose to allow it complete freedom to climb about in the trees, for it will never be able to fly owing to the damage of the shot. Through the kindness of Mr. Sydney Porter in lending me his bird I now have what appears to be a true pair of Imperial Amazons. In Mr. Porter's opinion, his specimen is a hen, although if the female Imperial is larger than the male it differs from all ordinary Amazons and also from the Guilding's. Mr. Porter's Parrot has done exceedingly well with me, and were it not for her sadly damaged wing would be a truly magnificent specimen. She has the most lovely chocolate-purple tail, that of my own bird being much greener. She is very lively and does not appear at all unduly sensitive to cold, sitting for long periods in the open flight uttering all manner of loud cries. My bird, which is able to fly, is a good deal smaller and has a smaller head. When he was first introduced to his partner he behaved in a curious way, showing neither pleasure nor anger but merely fear, as though he had been confronted by some strange and unknown animal. As, however, she never attempted to molest him, he soon became reassured, and now they are on the best of terms and preen each other's feathers. Were he more contented I might even harbour wild hopes of breeding them, but he seems to find the 24 feet aviary too cramped, and at present I cannot afford to build them the larger quarters they deserve.

TAVISTOCK.

## THE WHOOPING CRANE

SIR,—The note on the death of the Whooping Crane at Lilford fills me with regret at a lost opportunity. For several years subsequent to 1892 there was a fine male at Woburn Abbey, and the pair would doubtless have bred had they only been put together. There was a second male at Woburn at a latter date, but he had a badly damaged wing and would not have proved fertile.

TAVISTOCK.

## GUINEA-FOWL

SIR,—In last month's number of the Magazine Professor Ghigi, in his article on "Guinea-fowl", mentions *Guttera pucherani* as having "laid once in England"; but this species was fully reared here in 1911, and an account appeared of its breeding in the Magazine for November of that year. *Numida ptilorhyncha* was bred here in 1928 (see AVICULTURAL MAGAZINE, Vol. VII, No. 1), and eight young ones were fully reared. The Vulturine Guinea-fowl has laid on several occasions, but the young have always been hatched so late in the season that they have never reached maturity before the autumn damp and fogs set in, and they have always died off when about six weeks old. As Professor Ghigi says, Guinea-fowl require large enclosures if they are to breed, and they prefer long rank grass or hay amongst which to nest in preference to a thickly planted bushy place. All those bred here have laid in the open amongst very long grass, although there was plenty of other shelter in the shape of small bushes available. I should certainly not expect Guinea-fowl to breed in aviaries.

G. H. GURNEY.

## BLACK RAILS

SIR,—To complete the story of my Black Rails, two more young appeared on 1st October. One was weak and tried to warm itself in the autumn sun: sitting on the edge of the pond it tumbled in and was drowned; the other one is still alive. I gave the three of the first nest away. The four of the second nest have the iris red and the beaks are turning green. The legs are still black.

H. L. SICH.

and anxious to get to the Imperial Amazons which it could hear calling, and sure enough it soon began to pluck itself. We caged it again and for some weeks it was quite all right; then again it started to pluck itself and seemed so restless and miserable that I tried it in another aviary. Here it has been rather more contented but still occasionally plucks itself, attacking not the upper part of the breast, as is usual, but the quills, especially of the tail, and the wing-butts. I feed it on plain seed with a little sunflower, plenty of pea-nuts, and apple, but I do not think it ever touches anything but the pea-nuts, sunflower, and fruit. As Miss Chawner says, it is fond of eating bark, but it will not touch butter, etc. I am sure this bird's trouble is purely psychological: it is miserable at being shut up and is even more tantalized by the partial liberty of an aviary than by the more inexorable confinement of a cage. In the spring I propose to allow it complete freedom to climb about in the trees, for it will never be able to fly owing to the damage of the shot. Through the kindness of Mr. Sydney Porter in lending me his bird I now have what appears to be a true pair of Imperial Amazons. In Mr. Porter's opinion, his specimen is a hen, although if the female Imperial is larger than the male it differs from all ordinary Amazons and also from the Guilding's. Mr. Porter's Parrot has done exceedingly well with me, and were it not for her sadly damaged wing would be a truly magnificent specimen. She has the most lovely chocolate-purple tail, that of my own bird being much greener. She is very lively and does not appear at all unduly sensitive to cold, sitting for long periods in the open flight uttering all manner of loud cries. My bird, which is able to fly, is a good deal smaller and has a smaller head. When he was first introduced to his partner he behaved in a curious way, showing neither pleasure nor anger but merely fear, as though he had been confronted by some strange and unknown animal. As, however, she never attempted to molest him, he soon became reassured, and now they are on the best of terms and preen each other's feathers. Were he more contented I might even harbour wild hopes of breeding them, but he seems to find the 24 feet aviary too cramped, and at present I cannot afford to build them the larger quarters they deserve.

TAVISTOCK.

## THE WHOOPING CRANE

SIR,—The note on the death of the Whooping Crane at Lilford fills me with regret at a lost opportunity. For several years subsequent to 1892 there was a fine male at Woburn Abbey, and the pair would doubtless have bred had they only been put together. There was a second male at Woburn at a latter date, but he had a badly damaged wing and would not have proved fertile.

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H. L. SICH.

## THE RECENTLY LIBERATED MANDARINS

SIR,—Some notes on these may be of interest. In early autumn of last year, when all had got their new quills and could fly, but the drakes were just coming into colour, I saw fourteen ducks and three drakes in the dell at Hyde Park, all full-winged, and in St. James's Park three unpinioned ducks and one drake; in Regent's Park I saw a single full-winged pair. Later, in the Zoo, I counted two dozen birds, some of which were full-winged, and no doubt at least a dozen were, as there certainly were only a few pairs of pinioned birds; with a lot moving about it is difficult to say exactly how many are pinioned. In Greenwich Park I saw a flock of eight, two or three of which flapped their wings and showed pinioning; the lot came many yards from the water and were nervous of me, but none flew, so I cannot say if any here were unpinioned; the distance and light did not give me a chance to make sure. Lastly, after Christmas, I saw two lovely unpinioned pairs feeding close to the fence in St. James's Park. In all I must have seen at least three dozen unpinioned birds last year.

F. FINN.

## NESTING OF THE WHITE-CHEEKED FINCH-LARK

SIR,—My hen White-cheeked Finch-lark, after failing to hatch its two eggs in 1927, let the next two summers pass without attempting to nest. Last summer it nested four times, only succeeding in rearing the single young bird of the first nest. The single egg in each of the next two nests got broken. Seeing it laying for the fourth time I fenced in the spot with wire-netting. All went well until the chick was five days old. That morning the cock was brooding the empty nest with the chick struggling on the ground about 1 inch away. I put it into the nest again. The next morning the same thing happened, but the brooding bird was the young from the first nest which had been helping to feed it up to now. On the third morning it was in the nest and alive. In the evening the hen was brooding it outside the nest, but by then it was dead.

The hen certainly showed more sense than the cock. I can only imagine that he threw it out because he did not like it fidgiting about underneath him.

After that one need not feel any surprise at seeing a bird brooding a young Cuckoo surrounded by its own dying young, as that has one left but my Finch-lark had nothing.

H. L. SICH.

#### MAIMED SOUTH AMERICAN PARROTS

SIR.—The natives (?) of South America would appear to have some method of treating a bird's wing which permanently inhibits the growth of primary feathers on one side, producing the effect of pinioning without the removal of any joint. Nearly a third of the Queen of Bavaria Conures imported have been treated in this way, and I have seen other South American Parrots similarly deprived of flight. The practice, as applied to Parrots, is a great nuisance and is one to look out for, since dealers, needless to say, make a habit of selling these maimed individuals at the price of perfect specimens. If, however, the operation could be performed on waterfowl, cranes, etc., and were less painful than pinioning, it would be an advantage to be able to copy it.

I have been trying to apply the fat and butter cure suggested by the Editor to half a dozen feather-plucking Cockatoos, Parrots, and Parrakeets, but not one of them will look at fat or butter up to the present! No doubt there are many normal birds in my collection that would eat it readily!

TAVISTOCK.

#### WHITE ZEBRA FINCHES

SIR.—I read with very great interest in the December number of the AVICULTURAL MAGAZINE, 1930, the breeding results of the Keston Foreign Bird Farm, and would like to add my congratulations to those that Messrs. Boosey and Brooksbank must have already received.

It may be of interest to aviculturists to know that White Zebra Finches have already been bred in Australia. In Sydney last March I was offered a few pairs by a dealer, who, as far as I can remember, had bred them himself. He had first succeeded in getting the strain

two or three seasons back, and now has a few regular breeding birds. I did not see the birds myself, but he assured me they were pure Zebra Finches, bred from birds trapped in Australia. He said they were pure white, with the usual red beak and yellow legs. Unfortunately I did not secure any, and very much regret it now.

I shall look forward to hearing further news of the Keston Bird Farm.

W. NEVILLE WHITTINGHAM.

#### AN ALBINO ROSELLA AND A YOUNG TURQUOISINE

SIR,—When in Australia in 1930 I saw, among many other interesting birds, an Albino Rosella, and am rather anxious to know if similar specimens have occurred before. The bird was taken from its nest in the wild state by a Mr. Foglia (an Adelaide dealer). With the exception of two crimson patches, one on the crown and the other, not so bright, on the breast, it was dark yellow all over, shading in parts to light orange. It was quite tame, having been hand-reared, and when I saw it (in late February), would be from six weeks to two months old and in very good condition. I did my best to persuade Mr. Foglia to sell it but nothing would induce him to part with it.

Mr. Foglia was also experimenting with a young weakling Turquoise Grass Parrakeet, bred by Mr. Simon Harvey, of Adelaide, and ejected from its nest-box by the parent birds when a week old. Mr. Harvey found it on the ground one morning in a very poor state and took it to Mr. Foglia, who tried hand-feeding with scalded semolina; however, it lost weight—it was weighed by means of matches—so he then tried cooked semolina, and it held its own for a time and then again started losing. He next gave it cooked semolina and bread and milk which proved very successful, and to this he later added sugar with very good results, the bird gaining strength and growing in the normal manner. It eventually turned out to be a cock.

Mr. Harvey had extraordinarily successful breeding results with his Grass Parrakeets (Turquoisines and Elegants) when I was over there, and succeeded in getting the very rare Queen Alexandra Parrakeet to sit, but I left before they had time to hatch out any eggs.

W. NEVILLE WHITTINGHAM.



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## THE RACKET-TAILED PARROT

IN the AVICULTURAL MAGAZINE for September, 1903, appeared a coloured plate, by the late Herbert Goodchild, of the first example of this rare Parrot that had been seen in this country. The plate is an excellent example of the great skill as an artist and lithographer of one whose untimely death was a great loss to bird portraiture, but it represents either an immature male or a female example of the species, and it was thought desirable to now figure the adult male since a very perfect example is living in the London Zoological Gardens. This bird was presented in October, 1929, by Mr. A. St. Alban Smith, who had obtained it in Singapore, though its native country is the island of Celebes. On arrival it was in the juvenile plumage as figured in the plate above referred to, but it soon moulted and assumed the adult dress as shown in the plate accompanying this notice.

The Racket-tail has always had the reputation of being a particularly delicate species, but though it appears to be susceptible to cold it presents no great difficulty in the matter of feeding, its principal diet being canary and sunflower seed, fruit, and green food.

This is a really very beautiful Parrot about the size of a Rosella, elegant in shape, and of extremely delicate colouring; its carriage is very upright, and so far as one can judge in the noisy atmosphere of the Parrot House, it has a very pleasing voice. It seems to be of a naturally tame disposition.

Another specimen presented by Mr. St. Alban Smith in September, 1930, was thought at first to belong to the same species, but now that it is growing its tail-feathers, one sees that the lateral ones are banded with black, showing it to differ from *platurus*. I am inclined to think that it is *Prioniturus flavicans*, which also occurs in Celebes.

D. S-S.

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## SABINA

By THE DUCHESS OF BEDFORD

"Sabina" is a Coscoroba Swan, and as far as I am concerned an almost entirely self-constituted pet.

She began life in a small paddock more than twenty years ago, where she had little human society, and remained there till after the War. Owing to her belonging to a seldom-imported species, and having become an orphan, she was brought up to the garden. None of the companions with which we provided her could be induced to live more than a few months. Her practice in the garden was to rush after all intruders with raised wings and ferocious aspect, not stopping short at attacking their legs.

It was the rule to retreat somewhat hurriedly before her, but as this seemed undignified in one's own garden, I made a stand and gave "Sabina" to understand that in my case at least such behaviour could not be tolerated.

As with some human beings an attack in the rear was an amusing diversion, but face to face with the enemy "Sabina" assumed a dignified attitude and at first strutted away at a respectful distance, hurling imprecations at me for my unseemly conduct.

Apparently she decided that I was a curiosity worthy of further investigation, for she took to following me on to the stone terrace in front of the house, and finally watched me through the French windows. She has never consented to eat anything that I have offered her, so that her regard for me is entirely devoid of any taint of "cupboard love". Gradually she allowed me to stroke her and then to lift and

carry her. We are now on kissing terms, i.e. when I ask her to kiss me she does so.

Her garden pond is some distance from the house, and there we have provided her with a mate who has lived longer than most previous importations, and has been with us more than a year, but she never goes to him until she regards my return as hopeless. Most of the day is spent on the terrace waiting for me, or sitting outside the window of the room I am occupying. She follows me from window to window as I go from one room to another, her great desire being to be allowed to come inside and sit with me. When this permission is granted she amuses herself with a basket of scraps of crumpled newspaper and a suspended strap and piece of string, making a contented crooning noise the whole time. When tired of play she stands on one leg or sits down and goes to sleep, but fiercely resents anyone else coming into the room.

She always announces my return in my motor to the world at large by throwing back her head and uttering loud "Cos-cor-obas" when she recognizes my own particular motor horn. I am told that when I went to Scotland for eight weeks in the autumn, she never came near the house after the second day after my departure, and yet she was back at my window within an hour of my return, though the pond she had been frequenting in my absence is not within sight of the house.

With a young Pekinese spaniel, friendship has been established in much the same way as with myself. At first she ran after him, then finding it never resulted in personal injury, he turned the tables and ran after her. Now they have established a mutual if slightly strained friendship, and are on sniffing and playing terms.

Owing to her habit of raising her wings and rushing ferociously at intruders exactly like the male Mute Swan, she was for many years thought to be a male even by so great an authority as Mr. F. E. Blaauw, but "Sabina" has laid two eggs or at least has sat upon two infertile eggs which were said to have been indisputably laid by her.

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NESTING OF SPOTTED MUNIAS OR  
NUTMEG FINCHES

By GODFREY DAVIS, I.C.S., F.Z.S.

We are asked to write, not only about our successes, but also about our failures, and some people even say that we can learn as much or even more from our failures than from our successes. We may in truth learn more of what we should not do but it is a negative sort of knowledge and does not much appeal to me. Still, as I have failed to breed successfully from a pair of Spotted Munias and a pair of Green Avadavats kept in conditions similar to those under which I have bred successfully St. Helena Waxbills, two broods in fact, of three and five, I thought I would put on paper the little of use which I have learned.

In July of 1929 a Waghri, that is to say a member of a criminal tribe which catches birds, brought me a pair of Spotted Munias otherwise known, I believe, as Spice Birds or Nutmeg Finches. Why they should be called Spice Birds or Nutmeg Finches I do not know. Their spotted waistcoats of black and white suggest a name. There is no difference between the sexes in plumage, so far as I can see. They may be described as little, thick-set birds, of rufous-brown with dark slate-coloured bill and feet and spotted waistcoats of black and white and the male, like some others of different species, thinks he is no end of a fellow and can sing. He stands upon his perch and puffs out his waistcoat and opens his bill and a strange burring noise proceeds from his interior. That is his song and his little wife, being properly brought up, leans forward on her perch and listens. "Darling," one can almost hear her say, "you are in lovely voice to-day," and this praise spurs him on to greater effort and he puffs his chest out more and he opens his beak a little wider and tries even harder. He has then a curious resemblance to a clockwork toy. Still, he is a cheery little soul and he soon got to know me, and he then started to sing to me. He had then an audience of two. I put him and his wife into one of those French triple breeding-cages which I have described, and hung on to one end a little wicker cage and gave them dry grass and feathers to make their nest. He picked up a piece of grass and dropped it and bowed before his wife and sang almost inaudibly.

She picked up a piece of grass and stood very uprightly and proudly upon the perch, but this was merely to show she was not to be taken for granted, and with these little birds, as with others, the lifting of grass by the hen is a sign that she will accept the advances of the male.

But they did not get on very fast with the nest. They went into the little wicker cage readily enough but they tried to build a nest round a perch and failed. After a time, however, they seemed to understand that it was better to take the grass inside and they built a nest of the usual domed pattern, and about October when the cold weather was to start the hen laid six eggs. They were large for the size of the bird, larger in proportion than the egg of the Bengalee, and very pointed. They varied in tint from white to cream, much the colour of the eggs of the Common Fowl. The hen sat in an exemplary fashion for about a week, when she started to get restless and kept rearranging the grass in the nest. I should have taken warning, but I did not know what she wished to say, and she finally abandoned the eggs. I then saw that the grass had withered and fallen apart and light came in through interstices, and she did not feel safe. After that I had a khaki-coloured cloth covering made for the nesting-cage, but it was too late. I opened the eggs and found embryos in five. The following January she appeared to be sitting and she sat hard for a fortnight, but when nothing happened and I removed the nest I found only one egg and that was addled. These little birds, apparently so willing to pair and build in captivity, had not reared young.

During the ensuing hot weather and rains I am afraid the little birds were neglected. I do not mean that they did not have seed and water, but no effort was made to bring them into breeding condition and they were put into a small wicker cage.

Last October, however, they were put again into a large cage—as I had bred so many Zebra Finches and Bengalees I wanted to breed no more—and this time they built a far finer nest. Whistler, in his *Handbook of Indian Birds*, describes the nest of the Spotted Munia as a bulky structure. It is composed, he says, of coarse blades and stems of grass, rice and barley straw, and leaves of bajera and jawar. The egg cavity is lined with fine grasses and roots. I gave the birds

only fine grass, and the hen did not seem happy. She laid one egg on the floor of the cage, then she laid one in the nest, which the cock, I think, ate, and altogether matters were not progressing satisfactorily. I was then growing for my St. Helena Waxbills some seed called here Cheena, which appears to me like a yellow millet. I did not grow it to harvest or ripen but to feed half-ripe to the birds. I plucked the stalks of this millet, leafy and about a foot long, and gave it to the Munias. This seemed to them far more satisfactory, and they started in to build a proper nest. An amazing quantity of this leafy grass was taken in, and as fast as it withered and I gave more this was carried in too, till finally the nesting-cage could hold no more and I gave feathers and fine grass for lining. These also were accepted and then the hen started to sit. The nest was so compactly made that I could not see if there were any eggs at all. After a few days the hen appeared to leave the nest more than a sitting bird should and I removed the nest and found four eggs. I tested them in water and all floated and so I thought all were infertile, but one dropped on the ground and I saw it was not infertile. So much then for my meddling interference. I had lost one young Spotted Munia. I restored the nest and eggs, humbly and without much hope, but after about ten days a faint chirping proceeded from the nest and the cock was constantly feeding on the half-ripe cheena in the cage. But this attempt to replenish the earth with little Spotted Munias was also doomed to failure.

My supply of half-ripe cheena failed because the little grey squirrels found it was good to eat, and all day were moving among the stalks. I found the Munias would feed like other small Finches on soaked seed, but having started on half-ripe cheena they doubtless thought they should go on. The result was that they ceased to feed the young, and instead of a healthy clamour there was silence. I removed the nest and found one young, a sturdy little beast with the crop empty, and that was the end of that.

The Munias have just now finished another of their bulky nests, and they go in and out, but so far as I can see there are no eggs. They will probably lay again as the weather gets warmer, for now it is cold and chilly. When I removed the nest the last time and removed the

mortal remains of their only chick I opened the two eggs that were in the nest. There was a fully developed young in each ; it may have been the water test to which I had subjected them to test their fertility : it may have been the cold, dry weather which had prevented the hatching ; but whatever the cause, the young had died in the shell. I have an idea that Spotted Munias, unlike the Silverbill which haunt dry, sandy fields and are extremely abundant in these parts, prefer warm, damp climates. I have only seen them wild once and that was a small flock feeding on the half-ripe grass seeds in long grass in the Rains in Poona. Their large bills suggest to me that in all probability they feed on rice, and paddy is very readily taken by them, and rather than call them Spice Birds or Nutmeg Finches I would call them Rice Birds. Avadavats are, however, called Rice Birds in the bird market in Bombay.

If I were asked, then, what I had learned from my failure to breed Spotted Munias I should say that (1) they must be given plenty of leafy stalks to build their nest, and (2) they must be given half-ripened growing seeds to get them into condition and to feed their young ; (3) dry, cold wintry weather will probably lead to dead young in shell.

I must leave to another article the story of my Green Avadavats and how I got eggs, but found that what the Green Avadavats really like are white ants.

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## NESTING OF THE CUBAN TREE QUAIL (*ORTYX CUBANENSIS*)

By W. H. WORKMAN

In the month of July, 1929, Mr. Newmarch, of Gamages, wrote to me that he had a pair of these little game birds for sale, and as I had never seen them advertised before I asked him to send them over. I had no big aviary at that time so I put them in with a pair of Californian Quails and a number of Budgerigars. They are delightful little birds, and the male is very easily distinguished from the female. The plumage is much brighter and the facial markings are white in the male and yellow in the female.

They lived quite well without any heat through the winter, and

about the end of May I transferred them to my new waders' aviary which was just finished and contained plenty of cover in the form of patches of grass left long.

When planting my aviaries I had taken Capt. Stokes's excellent advice to include a few giant knotweeds (*Polygonum sacchaliense*) so as to give a tropical effect. I was amply rewarded; at the base of one of these beautiful plants the little Cuban hen found a hollow which she carefully lined with dried grass, then closed the growing long grass over herself and in due course laid ten eggs. She had so carefully covered up the nest that when sitting she was quite invisible to everyone, however closely they looked. She sat for about three weeks, but I cannot give exact dates because of the impossibility of seeing her on the nest, but one thing I do know was that she steadily sat through the most appalling August weather I ever remember. It rained day after day, and I fully expected to find her dead on the nest or "curse the job and chuck it". She did neither but stuck to her guns, and on the 18th August she walked off with ten young birds smaller even than young Californians. The father bird now joined her and together they took their little family through the grass right into the dry and sand-covered aviary house where we found eight of them. The other two were found dead just at the entrance, probably too weak to make the house along with their parents.

At this point I took our good Editor's advice on rearing young Quails, so we caught up the whole family and put them in an aviary by themselves, where they were fed exactly in the same way as I described in my article on the Californian Quails.

Mealworms they were not so fond of, but gentles were readily taken from the first and as they grew older their love for this live food increased till it only took a few minutes to clean up a dish of grubs.

They are now fully grown and practically in adult plumage, but they are very wild, not nearly as tame as my brood of Californians, but so are their parents. In fact I seldom see them in the large aviary. It is strange how they have changed: when the young were just hatched the old birds were very tame and wouldn't fly, but let me get quite close to them, their love for their little family quite overcame their fear of man.

When grown up these birds seem to do quite well on a varied seed mixture, such as canary, white and Indian millet, dari, wheat, and a little hemp. I also give them green food, such as groundsel and chickweed. I forgot to say that from the day the young were hatched and for several weeks they had a fresh supply daily of chopped grass and lettuce.

A good description of these birds will be found in Oglivie-Grant's *Game Birds*, an invaluable book to the aviculturalist. I have noted a curious little habit—when excited or frightened they spread out their tails horizontally in the shape of a fan. I have never noticed any of my other Quails doing this.

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## EMUS, CASSOWARIES, AND KIWIS

By J. DELACOUR

THE EMU (*Dromicellus novahollandiæ*) is a native of Australia, where it lives in open country. There are several slightly distinct races, a smaller one in Tasmania is extinct and another species, also small but dark, now also extinct, inhabited Kangaroo Island and was brought alive to France as a present to the Empress Josephine.

Emus are rather taller and much larger than the Rheas; their beaks are shorter and wider; rudimentary wings reduced to little flaps. Bodies covered with bifid feathers, light brown with black marks, rather narrow, long, and harsh textured. The head and upper neck are covered with black feathers parted down the middle. The light blue face is bare in front and there is an indistinct white collar at the place where the feathers begin.

The sexes are alike but can easily be distinguished by their voices; the cock emits a hoarse short note, while the hen utters a kind of cluck like the sound of a tom-tom.

Emus are hardy with us and should have the same treatment as Rheas, but their bad disposition generally obliges them to be kept in pairs; they are not often dangerous to human beings but frequently attack mammals and large birds which are put with them. They have

the bad habit of laying during winter. Again it is the cock who undertakes incubation, which lasts about two months, during which time he never leaves the nest and can even do without food or water while sitting. It is, however, better to put them within reach. The eggs, rather smaller than those of Rheas, are handsome bronzed green turning to black later. The young can be reared like Rheas.

#### CASSOWARIES (*Casuaris*)

Cassowaries are known by their short, narrow, and compressed beaks, slightly curved; their bare heads and necks which are covered with very brilliant wattles in different colours, and their foreheads covered with a horny helmet; rudimentary wings, armed with six great round pointed quills representing the flights. Their legs are shorter than the Emus' but thicker; they also have three toes, the middle one being armed with a very long and sharp claw, a dangerous weapon. Their bodies are covered with bifid black feathers, filiform and harsh. The sexes are alike. The young have yellowish-brown plumage with the helmet and wattles barely indicated. The eggs which usually number five or six are very granulated and greenish blue. The male incubates.

Unlike the preceding genera Cassowaries inhabit forests. They not only eat grass, fruit, and all kinds of vegetable substances, but insects and small worms. In confinement they will take grass, fruits, bread, potato, boiled rice and maize, and beetroot; it is advisable to give them a little meat as well. They will kill and swallow nestlings and small birds or mammals which come their way.

Cassowaries have most unpleasant characters; they are spiteful and dangerous, not only to human beings and animals, but among themselves as well. Except in the breeding season it is not possible to keep the cock and hen together, often it is impossible even then, which is the great obstacle to breeding them in confinement, and it has only rarely been accomplished. This spitefulness is the reason why they are rarely to be seen in spite of their beauty except in zoological gardens, although individuals have been known to become gentle and even affectionate to their keeper.

In confinement they must be given a large enclosure with a good

shelter which need not be very big. Heat is not required after the first winter, but they must be brought in at night during winter.

Cassowaries inhabit Papua; that is to say, New Guinea and the neighbouring islands, north Australia, Ceram, New Britain and the Aru Islands.

There are several species, and many races of Cassowaries which have been studied and described by Lord Rothschild. They sometimes differ in size, but always in the shape of the helmet and the colour and shape of the wattles.

THE HELMETED CASSOWARY (*Casuarus casuaris*) has two large long-shaped wattles coming together on the neck. Its helmet is narrow and prolonged at the back. The helmet and beak are black; its cheeks, sides, and back of the head are light blue-green; its chin, throat and sides of the neck purple-blue; the back of the neck orange, and the two wattles pink with violet wash.

This type of the genus inhabits Ceram, but there are six others distinguished by the extent and colour of the wattles and neck as well as by size and shape of the helmet. *C. c. johnsonii* from north Australia has two very large wattles; *C. c. beccarini* from the island of Aru; *C. c. altijugus* with very high helmet from the Bay of Jeelvink (N.G.); *C. c. sclateri* from the south-east and south-west coasts of New Guinea; *C. c. violicollis* known by two long violet plaques on the sides of the neck, from Aru.

THE TWO-WATTLED CASSOWARY (*C. bicarunculatus*) is distinguished by the distance between the two wattles on its neck, between which is a smooth blue expanse. The type inhabits the islands of Wammer and Aru. There are still three other forms: *C. c. salvadorii* from Jeelvink Bay; *C. c. chimera* also from New Guinea; and *C. c. intensus* from south-west of the island, which has almost the whole neck light blue.

THE ONE-WATTLED CASSOWARY (*C. uniappendiculatus*) is very different from the above; its helmet has at the back a concave depression which reaches nearly to the top; it has only one small rounded median wattle which is rosy grey, but two large bright blue tufts on its cheeks; the back of its head and upper neck are light blue with a yellow spot on the nape; the rest of its neck is golden yellow with a long plaque reaching to the base on either side.

The type inhabits the islands of Mysol and Salawatty. Another variant in the shape and height of the helmet as well as the shade and distribution of the blue and yellow portions of the neck, *C. u. rothschildi* from west New Guinea; *C. u. occipitalis* from Jobi Island; *C. u. aurantiacus* from north-east New Guinea; *C. u. suffusus* and *C. u. rufotinctus* from New Guinea but doubtful distribution.

There are several other species:—

*C. mitratus* resembling the former but having the front and sides of the neck red.

*C. doggetti* distinguished from *C. uniappendiculatus* by its green-blue head and the two plaques at the base of the neck which are red bordered with yellow.

*C. philipi* with blackish purple throat and red lateral plaques on the neck.

*C. hagenbecki* with the neck and head yellow, black cheeks and green round the eyes; two yellow and one central wattles.

*C. jamrachi* with one wattle and black head and neck washed with light green near the helmet and bright red marks at the back of the neck and purplish-red lateral plaques.

*C. roseigularis*, with yellow occiput, back and sides of neck, cheeks, and throat pale pink, the parotic region and base of the helmet green; no wattles.

These six species described from living examples imported from New Guinea, are from unknown localities.

*C. papuanus* from the Barau Peninsula (N. G.) has its helmet depressed at the back; its cheeks and back of head are white, neck, throat and front of neck blue, back orange passing into deep rose on the sides; one wattle scarcely indicated.

Two slightly different races, *C. p. edwardsi* and *C. p. goodfellowi*, inhabit the Bay of Jeelvink and Jobi Island.

*C. forsteri* from north-east New Guinea, without wattles, with sides and back of head black, face and front of neck pale blue, upper and back of neck deep blue, the base whitish, a large pink spot under the ear and the two lateral plaques bright red surrounded by blue.

*C. claudii* from south-west New Guinea resembles *C. papuanus*, but the back of its head is black and it has no wattle.



Photo D. Seth-Smith

MANTELL'S KIWI  
*Apteryx Mantelli*

*C. keyseri* from Mt. Rawlinson (north-east New Guinea), without wattles, with blue head and neck, black at back, lateral plaques dark red edged with blue, front of neck and throat pink.

*C. loria* from Mt. Owen Stanley (N. G.), nape pale blue, back of neck pale green passing into blue at the base, with throat, cheeks, and front of neck pink and red, with short lateral plaques, surrounded with purple and blue.

*C. picticollis* from south-west New Guinea with dark blue neck and head washed with pale green on the nape and towards the base, with the middle of the lateral plaques and a spot on the middle of the neck in front deep red. The form *C. p. hecki* from the north-east of the island has swollen cheeks, less red at the sides, and no red spot on the neck, and the back of the neck darker.

*C. bennetti* from New Britain is smaller than the others, and has entirely dark greenish blue head and neck, with traces of purple red at the base of the back of the neck.

All, or nearly all, these different forms of Cassowaries have been imported alive from New Guinea.

## KIWIS

THE KIWIS (*Apteryx*) are a special family related to the Cassowaries and other Ratites, but highly specialized. They are of medium size varying from that of a hen to a Goose; their wings and tails are rudimentary, their beaks are long and slender and slightly curved, with the nostrils at the tip. Their legs are short but very powerful, furnished with three long and sharp clawed toes, and a thumb which does not reach the ground. These serve them as weapons of defence as well as instruments for turning up the ground. Their feathers are long, lanceolate and narrow with decomposed barbs and the head is ornamented with long plumes. Their bodies appear quite round, which, joined to their long beaks and short legs, give them a very peculiar appearance.

Kiwis are nocturnal; they sleep away the day in holes under roots or some such shelter, rolled into a ball.

At night they run about seeking for the worms and larvæ in the moist

earth on which they feed ; they dig for this purpose a sort of tunnel, turning their beaks round in the earth. They also eat berries and ants.

These birds lay enormous white very thin-shelled eggs. The hen digs the hole which serves as a nest and the cock incubates nearly always two eggs. The young birds resemble their parents, but their feathers are softer. The sexes are very much alike, but the hen is decidedly larger than the cock, and her head and neck are often browner and not so grey. She can also be recognized by her cry, which is hoarse, while the cock whistles ; they both utter a kind of cluck.

Kiwis are easily kept in pens, but their great rarity on account of destruction by hunters and above all by weasels and stoats introduced into their country leaves no hope of seeing them in the future. They would do well in a damp garden or enclosure where they could roam at night, and they would need a shelter or a big heap of straw in which they could hide during the day. They would feed on minced meat, cooked potatoes and, if possible, earthworms. They are hardy, do not mind cold, are long lived and become very tame. They have laid and incubated in the Zoological Gardens in London, but did not hatch the eggs.

Kiwis are confined to New Zealand, where they live in the mountains, passing the day in wooded gorges, only coming out at night to feed. Sometimes they come down to the sea shore.

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## THE FOREIGN BIRDS AT THE CRYSTAL PALACE

By A. A. PRESTWICH

The Grand National Show at the Crystal Palace on the 5th, 6th, and 7th February was, as usual, a great success. There was a record number of entries—375 in the 34 classes, compared to 252 last year. The largest entry—57—came from Dr. G. Elphick, and Mr. Whitley's team—47 entries—made a very welcome reappearance after two years' absence. The "Chapman" Foreign Bird Trophy, for the best foreign bird exhibit, was awarded to Mr. Whitley's Red Bird of Paradise. The three "National" Foreign Bird Trophies, for the best bird in

each of the three sections represented by Parrot-like, Seed-eater, and Insectivorous or Nectar-feeding Birds, were awarded to Mr. Whitley's Red Shining Parrakeet, Mrs. Victor Cooper's Sydney Waxbills, and Mr. Whitley's Red Bird of Paradise. In addition to the above-mentioned trophies, Mr. Whitley won no less than seventeen "firsts" in the twenty-four classes in which he competed. An innovation this year was the sticking of a small label stating the name of the exhibit on each cage, and this must have been of considerable help to visitors. The Chief Steward in charge of the section was our member, Capt. E. F. E. Hammond, who undertook similar duties last year. It is worthy of mention that everyone—without exception—of the foreign birds sent to the "Palace" last year arrived home in the same condition as sent out. The only complaint to be made is concerning the temperature of the hall: at the time of our visit it was only 48 degrees, and we believe it had been considerably lower. This is an annual complaint and the management always promise "to do better next time". Probably the truth of the matter is that the furnaces and boilers are worn out, and the stokers daren't put on much fuel for fear of bursting the boilers—so it would seem that we must resign ourselves to a cold "Palace".

The show was again under the managership of Mr. A. J. Platon, who deserves the thanks of all visitors for organizing such a tremendous and representative exhibition of birds—there were no less than 4,400 entries throughout the show.

The "Parrot" classes were even better than last year and contained some very fine birds. The class for Lories, Lorikeets, and Hanging Parrots had nine entries, and was won by Capt. H. H. Liddell-Grainger's Yellow-streaked Lory, in fine condition; a good pair of Worcester's Hanging Parrots sent by Messrs. J. and J. W. Underwood gained second, and third was awarded to Mrs. A. A. Pearse's Red Lory. Lovebirds, etc., was the largest class in the section, the best of the twenty-six entries being Mr. Whitley's very fine pair of Parrotlets—probably *Forpus p. viridissimus*—followed by Mr. H. J. Willshire's Abyssinians and Mr. J. Sleigh's Red-faced. The class for *Brotogerys*, etc., was not a very great success, having but four entries, Mr. Whitley gaining first and second with a Tuipara and White-winged respectively.

and Mr. P. Beauchamp third with a Tui. Mr. Whitley won the class for Cockatiels, Red Rosellas, Common Ringnecks, etc., with a good Blossom-head, his Alexandrine being third; Dr. C. H. Macklin secured second with a pair of Cockatiels. There were only three entries in the class for Conures and smaller Macaws, all from Mr. Whitley, and all, of course, of interest: first a good Crimson-breasted, followed by his rare Rock Conure and *Pyrrhura emma*. Common King, Pennant's, Crimson-winged, etc., had eight entries: Mr. Whitley's King fully deserved its first prize and his Crimson-winged was a worthy second; Mr. Frostick's Bauers were third. The class for "All other species of Parrakeets" was one of the best in the show and contained some extremely fine birds, the best of which proved to be Mr. Whitley's Red Shining Parrakeet (National Trophy winner); second was awarded to Mr. Whitley's Princess of Wales' male—the only one in Great Britain—and third to Mrs. A. A. Pearse's perfect pair of Turquoisines. The class also contained several Many-coloureds. The next class, for Grey, Timneh, Senegal, and various specified Amazons, provided a win for Mr. Maxwell, his very excellent Rüppell's Parrot repeating its success of the last two years; Mr. Whitley was second with another Rüppell's and third with a Yellow-shouldered Amazon. "All species of white and Rose-breasted Cockatoos" produced another first for Mr. Whitley, his White-crested Cockatoo beating Mr. A. Barnard's Leadbeater's and Mr. W. Hawkins' Greater Sulphur-crested respectively. Still another win was recorded by Mr. Whitley's team in the "All other species of Cockatoos and Macaws", his Great Black Cockatoo beating Dr. Elphick's Hyacinthine Macaw and Mr. Maxwell's Great Black Cockatoo. The class also contained two Spix Macaws, exhibited by Mr. Whitley and Mr. Maxwell. The last Parrot class, that for "All other species", found Primley birds again to the fore—the winner being Mr. Whitley's Jamaican, or Red-throated Amazon (*A. collaria*), and the runner-up being his Red Mitred Parrot; with Mr. Maxwell's Aubrey's third. Mr. Whitley also showed a very fine Grand Eclectus female.

First, second, and third prizes were gained by Mr. Whitley's birds in the class for hybrids and abnormally coloured birds. The leader being his Royal  $\times$  Superb Starling, followed by his Crimson-winged Parrakeet

× Rock Peplar and Mealy Rosella × Barnard. In the class for Quails, Pigeons, etc., Mr. Whitley was again first and second with a good Monaul and Spur-winged Plover; Dr. Macklin gaining third with a pair of Californian Quail. It is to be hoped that at the next "Palace" show some of our large Pheasant breeders will have representative exhibits—such should do much to further this branch of Aviculture.

A class was provided this year for Zebra Finches and attracted fourteen entries—the winners being owned by Mrs. Victor Cooper.

The following three classes, for various specified small seed-eaters, were won by St. Helena Waxbills (Mrs. Victor Cooper's), Blue-headed Waxbills (Mrs. M. M. Alexander's), and Bornean Black Mannikins (Mr. Whitley's). In the class for various named Grassfinches, Mrs. Victor Cooper repeated her success of last year and provided the winners in a splendid pair of Sydney Waxbills (National Trophy winners); the same exhibitor gained second with Chestnut-breasted Finches, and third went to Mrs. F. R. Hawker for Cherry Finches. The next class, for the rarer Waxbills and rarer Grassfinches contained a good Tri-coloured Parrot Finch (Miss M. Bousfield's), which was awarded first prize; second going to Mr. J. Walsh for a Violet-eared Waxbill, and third to Mr. Whitley for a Pin-tailed Nonpareil.

Mr. F. Turnber won a strong class of Buntings, Siskins, etc., with a pair of Lazuli Buntings; Mr. J. Cranna was second with a Varied Bunting, and Mr. E. Allison third with a Chocolate-capped Bunting.

All species of Cardinals, Hawfinches, etc.: first, Mr. Whitley's Blue Grosbeak; second, Capt. Liddell-Grainger's fine pair of Black-cheeked Cardinals, extremely unlucky not to have gained premier position; and third, Mr. Beauchamp's pair of Grosbeaks.

The Weaver and Whydah class received more support than last year and contained seven entries; first and second prizes were secured by Mr. H. J. Willshire with excellent pairs of Queen and Paradise Whydahs, third being awarded to Capt. Hammond's Thick-billed Weaver.

The class for Common Tanagers found a nice pair of Tri-coloured (Mr. J. Cranna's) in the first position, with Dr. Elphick's Superbs and Scarlet second and third. Amongst the rarer Tanagers and Sugar Birds, of which there were eighteen entries, Mr. Maxwell took first for

a Purple Sugar Bird, and second for a Spotted Emerald Tanager, Mrs. Alexander being third with a Copper-headed Tanager.

Mr. Maxwell gained first, second, and third in the class for Sunbirds with Golden-breasted, Amethyst, and Purple-capped. A class confined to Pekin Robins secured ten entries, the best of which were those of Miss I. Hebbert, Mrs. Victor Cooper, and Mr. P. R. Abrahams, in the order named. A very fine Blue Robin secured the first prize for Mr. Beauchamp in the class for Shammas, Dhayals, Clarinos, etc., Mr. Frostick's Clarino being second, and Mr. Whitley's Dhayal third.

The Glossy Starlings and Sprees made a good show; of the seventeen entries Mr. Maxwell's Purple-headed Starlings were the best; Mr. Whitley's Salvadori's Starlings being second and Dr. Elphick's Burchell's Starlings third. All species of Mynahs, Fruitsuckers, Thrushes, etc., was won by Mr. Whitley's Himalayan Blue Whistling Thrush, a very nice Ground Thrush (? species)—imported by Mr. W. Frost—gained second for Primley, and a Blue Rock Thrush third for Dr. Elphick. Lady Wavertree showed a pair of Black and White-winged Grackles bred in captivity. Dr. Elphick was first and second in the class for All Species of Hangnests, Troupials, etc., with a Mexican Troupial and a Yellow-headed Marsh Bird; third prize being awarded to Mrs. Victor Cooper's Baltimore Hangnest. A good Giant Cassique (Capt. Hammond's) was shown in this class. Mr. Whitley was again first and second in the class for Jays, Pies, Barbets, Toucans, etc., his successful birds being a very good Toco Toucan and a pair of Royal Jays; another Toco secured third for Dr. Elphick. By this time Mr. Whitley was well in his stride and it was only natural that he should win the next class, for Birds of Paradise, Trogons, and Motmots; this class created something of a record, there being nine entries—eight of which were Birds of Paradise—two, however, failed to materialize. This class contained the best foreign bird in the show—Mr. Whitley's Red Bird of Paradise ("Chapman" and "National" Trophies), followed closely by Dr. Elphick's Six-plumed and Mr. Maxwell's Lesser.

Other fine birds exhibited were Six-plumed (Mrs. A. A. Pearce's), Wilson's (Mr. A. Wilson), and Cuban Trogon (Capt. Hammond's). The two remaining classes were for "All other species of insectivorous, and fruit-eating birds 'smaller than' and 'larger than' a Silver-

eared Mesia". The former contained a single entry which did not put in an appearance, and the last, as was only fitting, was won by Mr. Whitley with a grand Purple-necked *Gallirex*, in superb condition; Mr. Maxwell was second with a splendid little Pigmy Woodpecker (? species) and third with a Black-throated Tanager. Good pairs of Grey and Donaldson's Touracos were sent by Dr. Elphick, and a Yellow-beaked Hornbill by Mr. Whitley.

The foreign section was judged by Mr. D. Seth-Smith and Mr. Allen Silver, the former taking the Parrot classes and the latter the seed-eaters and insectivorous. If the entry increases in numbers much more it will be advisable to have three judges. At the judges' luncheon Mr. Seth-Smith was, as usual, called on to respond to the toast to the judges—a task which he carried through with great applause.

Concerning the Budgerigars, we cannot say much, as they have almost passed beyond the scope of the Avicultural Society, but there were no less than 414 entries in the twenty-two classes provided—something over 600 birds, quite a show in themselves. Our members, Mr. T. Goodwin and Mr. Andrew Wilson, had the unenviable job of placing the awards.

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## BLUE MASKED LOVEBIRDS

Our members may be interested to hear further of the blue specimen of the Masked Lovebird at the London Zoological Gardens. This bird, a cock, was mated to a normally-coloured hen and produced ten young, all of which were normally coloured as was to be expected. These young birds, which Budgerigar enthusiasts would term blue-bred, or green split blue, were placed in a large open compartment provided with a choice of nesting-boxes, while one of the hens was mated to the blue cock, her father. This last bird produced one young one, which was normally coloured, and then died egg-bound.

The others did not settle down to nesting seriously for a long time, the reason, I am now convinced, being that *Agapornis personata* unlike the other Lovebirds, does not as a rule breed satisfactorily if kept in numbers, but should be kept in separate pairs.

However, in December, 1930, the keeper one day informed me that there were two nests of young recently hatched. Later I was brought a corpse of a young one that had fallen from the nest. It was almost bare of feathers except on the head, but the few feathers that showed were *distinctly blue*. The two remaining in the nest were normally coloured.

We then examined the second nest and found it to contain two young birds, almost naked on their bodies but feathered on the fore-part of their heads. One was larger and altogether stronger-looking than the other, and this larger bird had a very red bill while that of the smaller bird was pale yellowish-white. Close examination showed that the few minute body feathers of the larger bird were either green or yellow, while those of the smaller one were *blue* or whitish.

These young birds should have been better feathered, for they were apparently nearly old enough to feed themselves, and I came to the conclusion that the other Masked Lovebirds in the aviary were interfering with them and probably plucking their feathers. In their naked condition they stood no chance of being reared in mid-winter, so the only chance was to take them and attempt to hand-rear them.

The larger of the two took soaked biscuit almost at once, while the valuable blue one positively refused all our efforts to give it nourishment. On the second day it was dead, while its companion thrives.

While the failure to rear a blue one was very disappointing, the fact that two blue offspring have been produced from two nests (five birds in all) is very encouraging.

The blue-bred birds have now been separated out into pairs, while a young hen has been placed with the blue cock, and now that we know that the species will "mendelise" we hope for great things during 1931. The difficulty of course with Masked Lovebirds is to determine their sex, and I think the surest way is by noting the shape of the head. We tried the pelvic bone theory but it gave very vague results.

D. S-S.

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## CORRESPONDENCE

### STARLINGS

SIR.—Miss Chawner's note on Starlings in the January Magazine prompts me to add the following. Over a year ago, at the dispersal of Mr. Spedan Lewis's collection, Miss Chawner herself brought down for me, with several other birds, a so-called "pair" of Black-winged Grackles. These birds, I understood, had been living together for some time; for the past fourteen months they have inhabited an aviary here with various other birds. Although no signs of breeding have been noticed they have got on amicably, but I always had my doubts of their being a true pair. One day last week one attacked the other and inflicted such damages to its head and neck that the bird died a few days later. This, I think, goes to show that they were both cocks, though why they should have lived in perfect serenity all these months, and then developed a murderous hatred of each other is more than I can say. I believe that a very large number of the foreign Starlings which are imported are males; as it happens, at the present time I have a number of individuals of the Common Glossy Starling (*Lamprocolius chalybeus*): these, I think, are all cocks, at any rate they have all to be kept in separate aviaries or tragedy would ensue. I well remember when I was collecting birds in East Africa many years ago, the native bird-catcher told me that the cock birds were always more easily caught than the hens, as the former were more inquisitive and came more quickly to the traps. Hence, perhaps, the large proportion of cocks imported.

G. H. GURNEY.

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### THE SOCIETY'S MEDAL

The Council proposes to award medals to the following three members for breeding the following species, it is believed, for the first time in Great Britain. If, however, any member or reader should know of a previous instance of young being reared, it is requested that the Secretary be informed at once.

Mr. H. L. Sich: The Black Rail (*Limnocolax niger*),<sup>1</sup> 1930, p. 270.

Mr. Alfred Ezra: The Formosan Bamboo Partridge (*Bambusicola sonorivox*), 1930, p. 289.

Lady Wavertree: The Royal Starling (*Cosmopsarus regius*), 1930, p. 305.

<sup>1</sup> More correctly named *Limnocolax flavirostra*.

# THE AVICULTURAL SOCIETY OF NEW ZEALAND

## SECOND ANNUAL REPORT OF THE AVICULTURAL SOCIETY OF NEW ZEALAND

The membership of the Society has grown considerably during the year and now stands at twenty-nine full members and eight junior members. Members of the Society reside in practically every town of importance in New Zealand.

Several Executive meetings have been held during the year as well as general monthly meetings and visits to the aviaries of members in Auckland according to the schedule arranged at the meeting held on the 18th November, 1929.

Generally the members have got to know each other better since joining the Society and in many small ways are doing their best to help each other particularly by way of exchanging birds and making up pairs.

Owing to the scare concerning Parrot Fever, mostly manufactured by the newspapers, the Government of New Zealand saw fit to do more than the Government of any other country in the world and prohibited the importation of all birds from 21st March, 1930, to 21st March, 1931. No other country prohibited the importation of more than Parrots and Parakeets. Full information concerning the remote risk of Parrot Fever was sent to the Government Department concerned and endeavours made through the Members of the Opposition, Members of Parliament, and through the present Minister of Health to get this prohibition removed. It is not known at present what degree of success has been achieved. The action of the Government has come at a very inopportune time when, owing to the growth of the Society, members have been more keen than ever to obtain birds other than the common species.

In all of the following places are individuals, not in every case members of the Avicultural Society, with whom arrangements have been finalized for obtaining birds for distribution amongst members when the prohibition is lifted: England, India, Malay States, Australia, U.S.A., Panama, and South America. In addition, means of transport have been arranged with various members of ships' crews trading to these ports.

Dr. Hopkinson, a Vice President of the Avicultural Society of England, visited Auckland during the year and during the four hours available was taken to all the aviaries possible. He promised to see what he could do on his return to England concerning putting us in touch with reliable suppliers of birds.

At the meeting on the 9th September, 1929, it was decided to issue Breeding Certificates for the first breeding in New Zealand of any species of foreign birds by a member of the Society since the 13th December, 1928. Up to the present time, nine Certificates have been issued for the following birds: Cut-throats, Bengalese, Diamond Sparrows, Tricoloured Mannikins, Saffron Finches, Bronze Mannikins, African Silverbills, Spice Finches, Red Avadavats. The details of breeding as contained in the application will be circulated amongst all members. It is hoped that members fortunate enough to breed

species other than these will apply for a Certificate, thereby passing on their experiences for the benefit of other members of the Society.

At the Auckland Winter Exhibition a display of approximately fifty foreign birds of about fifty species was made and a considerable amount of public interest thereby created. The general funds of the Society will receive a donation from the Winter Show Executive.

The thanks of the Society as a whole are due to the few members who made this exhibition a success at considerable inconvenience and in some cases at a loss to themselves.

At the Annual Show of the Auckland Canary and Cage Bird Club, one hundred and twenty-four entries of Finches and foreign birds were staged. Many species unknown to the public were exhibited for the first time and great interest aroused. Again the thanks of the Society are due to all the members who went to the inconvenience of showing here, particularly to the two members who were practically responsible for the large number exhibited. An account in detail was given "over the air" of the birds exhibited in the Winter Show while one talk in general on birds, was given at a later date. By many methods we have sought to create public interest and sympathy with our objects.

At the request of several members a letter was sent to the Avicultural Society of England asking that articles on common birds be published in the AVICULTURAL MAGAZINE for the reason that, generally speaking, we are not so advanced in the science here as in other parts. This letter was favourably received and commented on by the Editor who added a paragraph requesting the desired information from members in general.

One member had a holiday in Australia and from the amount of information he brought back and gave to the Hon. Secretary he must have spent the whole of the period following up birds and bird dealers. The thanks of the Society are due to him for having unselfishly made the whole of this information available to all members.

With this report you will receive the first pamphlet issued by the Society and any suggestions or help you can offer in compiling the next issue will be welcome.

I have much pleasure in submitting the annual Statement of Receipts and Expenditure at the same time drawing your attention to the fact that whereas the credit balance last year was £10 8s. 7d., this year it is £13 13s. 5d. I would have you note however that only by the Society receiving a Commission on birds imported for the Society, has it been possible to maintain our credit balance. The concession granted by the Parent Society of the members' annual subscription is not sufficient to pay all outgoings here, unless the number of new members per year increases, so that the Society has the benefit of half the entrance fee.

G. ROWLAND HUTCHINSON,  
*Hon. Secretary.*

## APPLICATION FOR CERTIFICATE FOR BREEDING CUT-THROAT FINCH

The Parents were purchased in Auckland, from Mr. J. R. Walker, in November last, and immediately on arriving home, they were turned into an aviary containing a variety of foreign finches as well as Canaries. Within a

couple of days, they purloined a nest, almost completed by a pair of Zebra Finches, which had been built in the scrub on the back of the aviary, and in which I was taking a very keen interest, and hoping in due time that I might have some young Zebras. Nevertheless, the Cut-throats took and retained possession of the nest, and after making a few additions in the way of a more elaborate entrance, etc., they laid four eggs. I know because I counted them and they were white eggs. I was very careful of course, very careful. In about thirteen days they hatched three young chicks with great wide mouths and bodies as black as a Raven. I know because I examined them. Of course I was still careful, very careful indeed, and couldn't understand why the parents should persist in keeping away from the nest immediately afterwards. The next time I looked there were three dead chicks and an egg, which I very sorrowfully took away. After removing the lining of the nest, which consisted of feathers and kapok, I anxiously awaited whatever might happen. In a very short time the parents started rebuilding the same nest and in the course of a week or so settled down to business again, and this time laid five eggs and hatched three similarly coloured chicks. I was more careful this time, and remembered the old axiom, "Shame on the man who 'has' you once, Shame on you if he 'has' you twice." The very same thing happened again. Three dead chicks of no more value than three blind mice. To say I was disappointed in no way expresses my feelings, but I made a solemn promise right away and mentally repeated Nil Desperandum.

I didn't deserve it, I know, but those parents were determined to rear young in spite of everybody and everything including myself possibly. This time they chose their nesting place, a piece of punga fern, open at one end, and hung horizontally at one end of the aviary. The cavity would be 12 inches long and not more than 4 inches in diameter. I had very little hope but I remembered my promise, so when I felt sure that they had sufficient time to lay eggs I just kept my ears open and my eyes shut. One fine Sunday morning I heard a faint squeak coming from that nest, and every day for twenty-nine days that squeak increased in volume. On the 29th day a youngster left the nest, a cock, the band on the throat being distinct but not complete, only showing on each side. The following day, two other youngsters left the nest, both hens, with no indication of a band at all. All three birds are much like the parents, the male bird having the chocolate patch in miniature on the lower part of his body.

The youngsters are healthy and able to pick for themselves, and the parents are just as attentive as any Canary. They have never shown any animosity towards the other finches. In fact, on one occasion I saw the hen sitting outside the entrance to the nest, when a Cherry Finch came calmly from the same nest and sat beside her. This particular Cherry Finch has shown a keen interest in the domestic affairs of the Cut-throats and is often seen in attendance on the youngsters. During the whole period of nesting the food has been placed on a raised table and consists of dishes of mixed canary seed, white millet, ants' eggs, dried flies, ground breakfast biscuits, ground biscuits, and eggs, and occasionally millet sprays.

E. CARTER.

c/o. Napier Bricks, Ltd.,  
Napier.

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## BENGALESE MANNIKIN

Began to build 3rd September, 1929. Built round nest with entrance in the side, of dried grass lined with flax fibre and pampas grass, in which five eggs were laid.

Chicks were hatched in 13 to 14 days. Both cock and hen birds sitting on the nest at the same time. Two young chicks left nest in November, about 3rd, and a third stayed in the nest and died.

They were fed on ordinary seed, grass seeds, thistle tops, and eggs and biscuit. Parents were very patient in their feeding of the young.

At the same time, I had a nest of Zebra Finches; just left the nest, and the parent Mannikins would readily feed the young Zebras as well as their own chicks when they were near.

A. E. HENLEY.

66 Victoria Street, W.,  
Auckland.

## DIAMOND SPARROW

(*Stegonopleura guttata*)

To begin with, in October, 1928, I purchased two pairs from a fellow aviculturalist. They were turned into an aviary containing Goldfinches, Gouldians, and Bichenos. Within two days one of the cock birds passed off this mortal sphere. The remaining three birds built themselves a nest large enough to house a batch of kittens, but I found the nest was a community one and was used for sleeping purposes only. This nest must have represented to them "a thing of beauty and a joy for ever", as they were continually enlarging and remodelling it. This went on for some months, until in July, 1929, two of the birds mated, built a separate nest from parts of the old "homestead" and laid two eggs. The eggs were pure white, but very long in proportion to their width, and did not resemble the usual oval.

It was not long before this nest was broken up and towards the end of July another nest was built and two more eggs laid. After the hen had been sitting for a few days, another nest was built, immediately below and adjoining the first nest, and the second hen then disappeared. I did not dare go near the nests to see what was happening, but had to content myself with the conclusion that the cock was a polygamist and had taken unto himself two wives. I held myself in check for over three weeks, and at the end of that time had to have a look. I found the first nest contained a dead hen, and two eggs which had been fertile but were now useless, and in the second nest were two clear eggs. Of course I had to apologize to the cock bird for my charge of polygamy, but I do think he might have waited a decent interval before taking on a new wife.

I now had only one pair left, and nothing further happened until towards the end of September, 1929, when a new nest was built and two more eggs laid. This time the hen sat steadily and after about a fortnight, on the 10th October, 1929, I was able to discern a movement in the nest. As time went on I discovered only one young one had been hatched, but it seemed to be doing well. The youngster duly left the nest, after about a month, and appeared strong and able to care for itself almost from the start. The young bird was coloured an even grey all over with the exception of the red colouring on top of the tail which was identical with the parent birds and

the beak which was black. The beak soon began to turn red, and with the passing of a few more weeks the grey assumed a brighter shade and the black bar across the breast appeared together with the black bands on the side with their uneven sprinkling of white spots. The young bird is a particularly virile specimen at time of writing, and can be separated from the parents only by being a shade smaller in general outline.

I found that these birds do well on canary and millet seed with occasionally some hemp and the usual green food such as thistle, groundsel, etc. The young bird was reared on this food alone.

An account of this interesting bird would not be complete without a description of the nest. From the outside it resembles a huge bundle of hay, but the inside presents quite a different aspect. The ends of the hay finish round the opening, and usually stick straight outwards without any attempt being made to weave them together. Immediately inside the entrance, which has a tendency to point downwards, is a carefully constructed passage about 2 inches across and 6 inches in length which leads into the inner chamber. This inner chamber, which measures about 4 inches across, is in the form of a sphere and is lined with feathers and other soft material. The eggs are laid in this chamber and while the hen sits almost without remission the whole period of incubation, the cock bird also sleeps in the nest at night, and when the young birds are hatched, both parents enter the nest for the purpose of feeding.

During the period the hen is sitting, the cock bird changes from a quiet and somewhat shy bird to a bird with a most ferocious mien. All other species who look sideways at him are chased unmercifully, and should the hen leave the nest she gets such a bad time at the hands of her mate that she must be glad to get back on the nest again. The change to such ferociousness is most marked, and I have never seen such a display in any other species except perhaps amongst some of the weavers.

A. E. H. KNOWLES.

Hinemoa Ave.,  
Devonport,  
Auckland.

### THREE-COLOURED MANNIKIN

(*Munia malacca*)

In common with most of the Mannikin species, these birds prefer sleeping in a nest at night to sleeping on perches or on the branches of trees. I was not aware of this when I purchased a pair in June, 1928, and hopes soared high when immediately on being put into the aviary they built a nest. However, the nest was merely for sleeping purposes, and several others were built before the birds settle down to domestic duties in October, 1928. The latest nest had been built in the house attached to the aviary, and one morning when I was playing "Nosey Parker", to my delight I discovered the nest contained four eggs. The hen proved a very jealous mother, but despite her care two of the youngsters either fell out or were thrown out of the nest. The other two were reared and duly left the nest after about four weeks. The young ones were light brown in colour with grey-white fronts. As the birds matured, the colours deepened into the adult colours of dark glossy brown back with creamy white front and black bills.

The eggs were plain white and in size and shape were similar to that of the Zebra Finch.

In June, 1929, three more eggs were laid in a new nest, but owing to the hen being disturbed, the effort was wasted and the eggs lost.

Another attempt, this time successful, was made this year. Five eggs were laid, but only one hatched, the others being infertile. Great care has been taken of the youngster, and at date of writing (2nd April, 1930), it is about ready to leave the nest.

The three-coloured Mannikin builds a dome-shaped nest in a tree or bush, the materials used being hay, cowhair, and some feathers. At night both birds sit on the nest. Canary and millet form the main diet of this species. Green food, especially grass seed in the ear, hung up in bunches in the aviary is appreciated.

A. E. H. KNOWLES.

Hinemoa Ave.,  
Devonport,  
Auckland.

### SAFFRON FINCH

(*Sycaelis flaveola*)

My first pair of Saffrons were secured from a shipment which arrived in October, 1928. The birds were not fully coloured, but after a few short weeks of aviary life, the birds were in first-class condition and had mated. A nest consisting of moss, short pieces of hay, cow-hair and a few feathers was quickly built, on a ledge in the aviary and about the middle of November, 1928, three eggs were laid. It was not difficult to watch developments as the nest was easy of access, and was constructed similar to a canary's—open at the top. The eggs were white, but were so thickly covered with irregular-shaped brown spots as to make them appear brown with a few thin white streaks. The size is similar to that of the common Sparrow, and in appearance also similarity exists, excepting that brown takes the place of the black markings of the Sparrow's egg.

The hen sat steadily for about a fortnight and one by one the three eggs hatched, the first youngster breaking through the shell on the 3rd December, 1928. During Christmas all three left the nest, but a few days later one died. The remaining two thrived, and were very soon as large as the parents. Both, I found later, were hens with greeny-grey backs and creamy-coloured fronts streaked with very light grey, which later turned to saffron yellow. A strange fact about these young birds was that they did not moult the following season, and it was only during last month (February, 1930) that they began to take adult plumage.

Following the youngsters being able to take care of themselves the parents reconstructed their old nest and laid three more eggs early in January, 1929, and on 5th February the only young to be hatched came out. This young bird did well and left the nest on the 22nd February. I still have all three youngsters and all have done well. One, to replace the mother which died during last winter, mated with the father this season, and laid three eggs in a cocoa-nut husk, but unfortunately the nest was taken charge of by mice and the damage was done before I could interfere. They have, however, built a new nest, again on a ledge in the aviary, and at time of writing the hen is sitting on three eggs. My experience indicates that three is the usual number of eggs to be laid, and also that the period January to March appears to be a favourable time for breeding.

The Saffron Finch as an aviary bird is a delightful species, and its unique

colouring adds greatly to a collection. In size it is a large Finch and no difficulty is experienced in deciding the sex. The cock is brownish-green on the back with a most wonderful saffron-yellow front extending right through from the beak to the tail, while on the top of the head is a large bright orange patch. The hen, on the other hand has head, breast, and underparts a greenish-saffron colour.

Millet and canary seeds with some hemp, together with the customary green food were all my birds received, and they appeared always happy and contented on this diet. As with most of my birds, I do not know which types appreciate live-food, such as mealworms, etc., for the good reason I don't give them any. In fact, I haven't any to give them. The soft food mixture of which I keep a quantity in each aviary, does not tempt the Saffron Finches, and I have never seen them touch it.

A. E. H. KNOWLES.

Hinemoa Ave.  
Devonport,  
Auckland.

### BRONZE MANNIKIN

(*Spermestes cucullata*)

In November, 1928, I was fortunate enough to acquire two of this species and hoped that they would prove a pair. In common with most of the Mannikins no points of difference were observable to distinguish the sex, but I tried to persuade myself that one looked slightly larger than the other, but without gaining any great measure of satisfaction.

On arriving home they were turned into a partly covered aviary with a completely enclosed house at the back and containing other birds of similar size. They were shy and retiring, and whenever one approached the aviary immediately flew to the back of the aviary, hiding themselves in the ti-tree or taking refuge in the enclosure. Such shyness did not augur well for success in breeding, and I began to feel that my purchase was not going to prove a great success because if they did not reproduce their kind, by their habit of hiding away when anyone approached neither were they very ornamental.

To digress for a moment, I can assure those who have not possessed them that they are an exceedingly beautiful bird. Most people would pass them by without a second glance owing partly to their lack of bright colours, and also to their shyness which means that they are viewed from too great a distance, thus losing the effectiveness of the brown and straw coloured speckles of the head and breast whereon nature has woven a delicate and harmonious colour pattern.

The Bronze Mannikin is indeed beautiful and its grace on the wing and at rest would make it an acquisition to any aviary if it were not so shy.

To continue, however, I must leave harmonies and colours and proceed to more useful information. I soon found by careful observation that these birds showed a preference for canary seed but also made some use of the millet kept in the aviary. They also showed a great liking for grass seed in the ear, and it was interesting to see how they relished the bunches of cow-foot and paspalum heads which from time to time I hung up in the aviary. My pair kept together but were always on friendly terms with the other birds and certainly appeared to keep in good condition.

On entering the enclosure at the back of the aviary one morning, to my surprise I discovered a domed nest in the ti-tree lining of the enclosure, and in

it three small white eggs similar to those of a Zebra Finch. The entrance to the nest was in the front and facing the opening into the aviary, and was built of hay and lined with cow-hair and feathers. I say I was surprised because I had seen no nest-building operations being carried on by any of the birds in this particular aviary, and yet they must have been on the job for at least a week to complete the nest and lay three eggs. None of the birds wore a guilty air, and I was at a loss to trace the owner. The next morning I found the eggs had increased to four, but still no parent bird visible to prove ownership. The next morning, however, on my entry, imagine my delight when one of the Bronze Mannikins flew off, suggesting firstly that the two birds were a true pair, and secondly that I might be the proud possessor of some baby Bronzes. This was early in February, 1929. The hen sat steadily, and I anxiously awaited results. On the 19th February, I could hold myself in check no longer, I simply had to have a look in that nest. I had a look—result—three small moving pink objects and one clear egg. I decided the hen knew her job and left her to it. All three left the nest together on the 10th March, 1929, but were still fairly small and could not fly well. The youngsters were a brownish grey colour and it was particularly noticeable how carefully both parents guarded them. After about a month they were caring quite well for themselves, and apart from their plumage being of a lighter shade, had assumed the colours and markings of the parents. Since then they have continued to thrive and are at the present time quite indistinguishable from the parent birds.

A. E. H. KNOWLES.

Hinemoa Ave.,  
Devonport,  
Auckland.

#### AFRICAN SILVER BILLS

Birds nested on 6th March, 1930, and had laid five eggs by the 17th. Three chicks were reared and left the nest on 4th May, 1930.

Nest was made of dry grass in the side of brush and had its opening on top.

Principal food was mixed seed with egg and biscuit daily. There is no special care to be given to the food during the rearing of young.

A. E. HENLEY.

Victoria Street., W.,  
Auckland.

#### RED AVADAVATS OR STRAWBERRY FINCHES

The birds, one cock and one hen, were purchased the beginning of 1929 and turned loose in an open aviary after they had been hardened. They preferred to roost at night in an *Olaria* bush planted at one end of the flight. They did not come inside at night during the whole of the winter, 1929.

During the autumn, 1929, they built a nest in the same *Olaria* bush and the hen sat, quite a while, and although left to herself with no inquisitive eyes looking into the nest, no young flew. The weather destroyed the nest before any eggs could be counted. The birds remained in good condition during the spring and summer, 1929, when the cock lost his brilliant hue.

This year, 1930, directly after the dry spell, January and February, the cock commenced to get his brilliant red plumage, and after several weeks of fine weather he was seen flying with hay in his beak. He seemed to be the principal nest builder. This time the nest was constructed at the top of some

dead ti-tree branches near the roof of the indoor flight. The nest was an untidy arrangement, smaller than that of the Zebra Finches, completely covered and with a small entrance. The inside was lined with feathers.

The nest was so snugly tucked away that inquisitive boys did not see it. After approximately three weeks the hen and cock birds were seen more than usual at the feed dishes. The foods used were: brown millet, canary seed and sponge cake, as well as mealworms. Both the hen and the cock bird ate the latter, preferring the small mealworms, the largest ones in fact they refused to touch. Mealworms were given every morning during the time the young were in the nest.

On Good Friday, 18th April, three young Avadavats were noticed perched on the ti-tree within a few inches of the nest. They gradually extended their field but did not venture far, and it was four or five days before they went into the open. The hen regularly fed them, they encouraging her with their cries.

In colour the young birds are similar to the hen, slightly darker on the breast, however, being a brown shade, while they were minus the red rump of the hen and had the usual dark slate beak of young Finches.

Now the birds are almost as big as their parents. The cock bird on several occasions was observed having a game with the young ones, inducing them to fly around with him as though they were chasing him, this being doubtless a means of strengthening their wings, teaching them to fly, and by their antics in the air teaching them to side slip, rise and fall in preparation to avoid enemies.

The young are now totally independent of their parents, and seem to relish plain canary seed more than the millet seeds.

Several fellow members of the Society have seen these birds and commented on their size.

G. ROWLAND HUTCHINSON.

Keith Avenue,  
Remuera.

#### NOTE

For the guidance of members claiming a Certificate the following information is required:—

- Approximate length of time in possession before nesting.
- Time of year, weather, position, materials used, shape, and any other interesting details concerning the nest.
- Duration of incubation if possible and description of eggs if obtainable.
- Food of parent birds before nesting and when rearing young.
- Definite date when young left nest.
- Description of young, particularly contrasting adult and young birds.
- Conduct of birds when rearing young and any other point, however small, that might help a fellow member in being a successful breeder of the particular species.

The members of the Executive have given instructions for the following letter to be circulated amongst members as the information it contains is so valuable.

California.

June 30, 1930.

Dear Mr. Hutchinson,

Thank you very much for your kind letter of May 22. I was indeed very happy to hear from you and will gladly pass on any knowledge I may have of breeding Finches in which I am always interested.

If any of your members would like some of the varieties I have I would be only too glad to exchange some of them for Australian Finches or any rare New Zealand Finches you may have over there.

I am breeding Indian Shammas and have three lusty young about two weeks old. You should be very successful over there with Finches as you have about the same climate that we have in California. To be successful in breeding Finches you must try and give them their natural surroundings. Have plenty of thick brush and large bunches of tall grass hung on the walls where the birds can be secluded when nesting. Eucalyptus branches with the leaves left on are useful as perches.

For nesting materials the Finches use fine grass and line the nests with any soft materials such as the feathery plumes of Pampas Grass. I never use the regular nesting boxes, but recommend gourds that have been cleaned out. The Gouldians and Long-tailed Grass Finches particularly prefer these which can be prepared by cutting a small round hole in them for an entrance and hang them up by a wire. I have a friend who raised eighty-seven Gouldians this year and her aviary was fitted up with Eucalyptus branches and gourds.

For feeding I use small yellow millet and canary seed all the time, and when nesting I add gentles that have been cleaned in sand. I keep the Gouldians by themselves, and when they have young I feed them with egg and biscuit with crushed hemp and thistle seed if the weather is cold and there seems a chance of egg binding. Gouldians will not touch insectivorous food.

Long-tailed Grass Finches: They are fed the seed diet and when they have young, which usually number five, they are given as many maggots as they will eat, the young being very hungry.

Masked Grass Finches: The same food as the Long-tailed. The Masked, however, always build in a thick bush or bunch of grass. They are very fond of charcoal or burnt wood and once they build their nest require a lot of this as they carry it in their mouths into the nest every day until the young have flown. When looking at the old nest of a Masked Grass Finch you will see an accumulation of charcoal, which I believe they use to prevent the nest from getting foul. Never touch their nest as they desert it at once, but sometimes the Long-tailed allow you to touch theirs.

Treat Blue-breasted Waxbills and Cordon Bleus the same. They usually build in bunches of grass. Never touch their nests.

Fire Finches and Lavender Finches are ready breeders once you get them started. They nest like the Cordons and they do not object to you touching their nests.

Bengalese are useful Foster Parents. I have had them successfully rear Grass Finches, Gouldians, Masked, and other varieties of Finches. Just change the eggs and let them alone.

Parrot Finches are hardy birds and rear their young on seed and maggots. You can cross the Red-headed with the Blue-headed varieties, as I have a friend who has four young from such a mating that have just left the nest. See that they have plenty of ground up or dried egg shell and cuttlefish all the time. I endeavour to keep even pairs in the breeding pens as odd birds always disturb the others.

Cut-throats, Orange-checked Waxbills, and Parson Finches are trouble makers. I have ceased keeping them as they were always throwing the young ones out of their nests.

For green food I use lettuce and always have sprouted millet and canary in the aviary for the birds. I keep several trays working, using one at a time for feeding.

With kind regards and looking forward to hear from you again and do not forget to let me know how the membership has increased.

Yours sincerely,  
(Sgd.) JOHN McNEIL.

The following is an extract from a letter received from Melbourne :—

"I cannot get Yellow-headed Gouldians. You have to breed them between Red and Black-heads. Gouldians breed freely in captivity. They start about May in the winter and continue. I have young ones now just out of the nest. They look like Grass Finches somewhat and take a long time to colour up. Gouldians want to be kept in a very warm place, not in an aviary. Here they are kept, one pair in a cage and breed in the cage. The young ones are put out in the open aviary, but the parent birds, that is the wild ones, are never put outside, as coming from a hot climate they would not stand the cold weather except in suitable cages. Myself, I keep the old birds in cages with glass fronts on the whole of the winter, removing these fronts in the summer time. The young ones, however, are exceptionally hardy and long-lived, and with no trouble you can breed from them in an open aviary."

## THE AVICULTURAL SOCIETY OF SOUTH AUSTRALIA.

*The following Medals have been awarded up to November, 1930.*

Pectoral Finch .....	E. Lewis.
Blue-Breasted Waxbill .....	C. E. Bennett.
Grenadier Weaver .....	F. R. Lucas.
Masked Lovebird .....	S. Harvey.
Cabani's Weaver .....	C. E. Bennett.
Orange Weaver .....	G. Whittington.
Fijian Parrot Finch .....	C. E. Bennett.
Turquoise Parrakeet .....	S. Harvey.
Blue Mountain Parrot .....	Dr. W. Hamilton.
Red Headed Parrot Finch .....	G. Staunton.
Queen Alexandra Parakeet .....	F. P. Kell.
Orange Breasted Waxbill .....	Miss Heyward.
St. Helena Waxbill .....	Miss Heyward.
Yellow Rumped Finch .....	G. Staunton.
Superb Spreo .....	S. Harvey.
Star Finch .....	S. Harvey.
Plumed Ground Pigeon .....	C. E. Bennett.
White Rumped Grey Singing Finch	S. Harvey.
Musk Lorikeet .....	Dr. W. Hamilton.
Tovi Parrot .....	G. Staunton.
Painted Quail .....	G. Whittington.
Elegant Parrakeet .....	S. Harvey.
Fischer's Lovebird .....	H. J. Packer.
Hooded Parrakeet .....	Dr. W. Hamilton.
Many Coloured Parrakeet .....	F. C. Kitchen.



Illustrated by K. Davidson, U.K. London.

*Rothschild's Grackle.*  
*Leucopsar rothschildi.*

THE  
AVICULTURAL MAGAZINE

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APRIL, 1931.

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ROTHSCHILD'S GRACKLE (*LEVCOPSAR*  
*ROTHSCHILDI*)

By ALFRED EZRA, O.B.E.

The Island of Bali, which lies to the east of Java, is well known for its delightful art and the civilization of its interesting population, which has been very wisely preserved from being spoilt by the European settlement. As far as birds are concerned, it contains mostly Javanese species, half a dozen in common with the neighbouring islands. There is one special bird, the Rothschild's Grackle, which was discovered in 1912 by Dr. E. Stresemann, who named it after Lord Rothschild.

This remarkable member of the Starling family has a peculiar beak, with a sharp high culmen, the nostrils are hidden by bristles. A long crest and a short neck give him a somewhat heavy appearance, while the beautiful blue skin which surrounds the eye adds to the fine aspect of the ivory-white plumage. The primaries and end of tail are black, and the legs are blue. It is a very rare bird in skin collections, and only one specimen was obtained by Dr. Stresemann. A plate of this Grackle with another species of Bali, the Brown-winged Grackle (*Gracupica tertia*), which was imported last year, appeared in *Novitatis Zoologicae* in 1912, but the shape of the crest, which stands up, is rather incorrect.

In 1928 Mr. Walter Goodfellow brought over a very fine collection of rare birds from the East for Mr. Spedan Lewis, and among them were five Rothschild's Grackles. I was fortunate enough to secure these

lovely birds, and only by their behaviour in the aviary I discovered that I had two pairs and an odd cock bird. I may mention that there is no difference in the colour of the sexes. Each pair was put in a separate aviary, but unfortunately I lost one bird of these two pairs, and when I put the odd bird with the remaining one, they fought desperately till I had to separate them. At present I have one true pair and two odd birds which I think are both cocks. This pair nested several times last summer, but the eggs disappeared in each case after the birds incubated them for about a week. I am afraid the eggs were eaten by the birds themselves. I consider this bird the handsomest of all the Grackles I have ever seen, and they do wonderfully well in aviaries. They are most comical when they display by raising their crests and bobbing up and down. I feed them like any other Starling, and consider them very hardy. With luck, I hope to breed them this summer. They certainly are well worth breeding, as we may never see any more of them.

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## SOME EXPERIENCES WITH GOULDIAN FINCHES

By P. W. TEAGUE

Early in May, 1929, I purchased a pair of Black-headed Gouldian Finches. Upon arrival I found the cock more dead than alive; however, with great care and the use of Virol I pulled him round. They were separated for about a month, then, as the weather was favourable, I turned them both into a small aviary 6 by 4 by 5 feet, which contained a few Waxbills and a pair of Zebra Finches. They showed no signs of nesting in the aviary and, as I expected to be away for about a month, I transferred them to an ordinary double breeding cage such as is used for Canaries, with a nest-box in one corner nicely hidden with bits of heather. This was near the end of July. Upon my return I found they had nested but could only find a trace of a broken egg on the box. Early in September they nested again (still in the cage), and on 20th October six youngsters came out. About five days later the old hen went sick and I had to remove her, having grave fears

of losing both the hen and the babies, but father Gouldian carried on the good work and reared all six young.

These two old parent birds were kept separated until 17th April, 1930, then again put together in the double breeding cage, as the weather was far too cold to turn them out. In a couple of days or so the hen got very restless so I gave them a nesting box and hay, when they commenced nesting almost immediately. On 8th May I heard young in the nest, and on 29th May seven fine youngsters came out. On 14th June these were removed as the old hen wanted to nest again. On 24th June I again heard young in the nest and on 17th July another seven young ones appeared. On 1st August I separated the young and old ones as I did not want to overtax the parents. All fourteen youngsters were turned into a small outside aviary, where they remained all the winter and are still out. This aviary has shutters to protect the interior from rain and cold winds, but no artificial heat or light is given and I have had to break the ice on the water several times this winter. There is not a weedy one amongst them and from what scanty information I can gather, the rearing of fourteen young Gouldians from two nests in close succession is perhaps a record for these birds in captivity. They were supplied with an abundance of fresh seeding grasses (their favourite being Rye-grass), as well as soaked seeds and millet spray.

A further interesting experience this last season was one of the young hens reared in September, 1929, mated and laid over twenty eggs before commencing to incubate. She laid her first two eggs on the floor. These were placed in the nest and from then onwards she laid all her eggs in the nest. As she showed no signs of sitting, I examined the nest, which contained ten eggs, so I removed four, as I thought ten too many for her to cover. These four eggs were placed under the only nesting birds I had at the time, namely Golden-breasted Waxbills. These little Waxbills hatched three young from the four eggs and fed well for eight or nine days, then I had to be from home for several days and that was the end of those (middle of October). Meantime, Mrs. Gouldian showed no signs of sitting, so I again examined the nest and found she had deposited another seven eggs to the six I had left. This time I removed six but had no foster parents to sit

them under except a pair of Zebra Finches who had just gone to nest. Zebra Finches are notorious for the tricks they play if you as much as look in their nest; however, I took the risk. Knowing their fondness for a few feathers for lining the nest I put a nice handful on the floor of the aviary. This did the trick and they straightaway put the disturbed house in order, but I never dared go in the aviary or look at the nest for fear of desertion. About 12th November I heard faint squeaks coming from the direction of the Zebra Finch's nest, but I refrained from looking in that nest. All went splendidly for ten days or a fortnight and, judging from the sounds, I thought I must have a fine brood of Gouldians, then I had to go into the aviary to catch three young Zebra Finches which were interfering. The following morning a fine fat young Gouldian was found dead on the floor, followed the next morning by another, and then another. My heart sank at this tragedy, but the Zebra Finches still went to the nest although I heard no chirps or squeaks. Two days passed and no music from that nest; three days, four days, and no news. I could hardly hold myself back from exploring that nest to see if anything was left alive when, on the fifth day, I came to the aviary suddenly and saw Mrs. Zebra Finch leaving the nest and a few moments later I heard the familiar cry of a young Gouldian. Needless to say, I felt a little excited after the tragedies that had already befallen this nest, apparently through my disturbing the aviary in catching the young Zebras. However, my troubles were by no means over, even though I did not dare enter the aviary. On 2nd December (rather late in the season) I saw a young Gouldian leave the nest, followed a little later by a young Zebra Finch. All the birds in the aviary followed this poor little wretched Gouldian and made it look thoroughly uncomfortable and, incidentally, it seemed to startle its foster parents, but they fed it for two days, then on the morning of the third day it was almost dead through lack of food and the cold. I brought it into the house and revived it with warmth and a spot of brandy. With the utmost difficulty I forced a little food down its throat, with thoughts that this forcible feeding could not succeed, so I placed this baby Gouldian in the cage along with an old cock Gouldian. Baby Gouldian had sufficient life left to call for food and open its mouth when the old bird went near it. I watched and

wondered, will he feed it? Ten minutes passed which must have been a day to that poor hungry ball of feathers, then the old chap went and had a good feed from soaked seeds and finished off with a feed from soaked millet spray, and back to his perch. Another five minutes or more passed and then down the old boy went to the millet spray again, but not to eat—he just stood and gazed at the baby who by this time was feeling mighty hungry, then it hopped close to where the old cock stood and opened its mouth. To my joy he fed it, then filled up and fed baby again, so much so that I thought he would burst it. The old Gouldian fed the youngster so well for the next fortnight that it made no attempt to peck and it was not until sixteen or seventeen days had passed before it cracked seeds for itself. It is now a fine young bird and ready to turn on its benefactor. This youngster has so far had an adventurous and unusual upbringing. Of the remaining eggs from the prolific hen Gouldian another four were hatched under another pair of Zebra Finches. This pair reared two which left the nest about a week before Christmas. Unfortunately, these two hadn't the sense to return to the nest as young Zebra Finches do, so the next cold frosty night killed them both. The hen Gouldian sat well for about a week on the remaining eggs, then deserted. I then separated her from the cock.

In my small outdoor aviaries last season Common Grey, Orange-checked and Golden-breasted Waxbills were successfully reared in addition to numerous Zebra Finches.

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## NESTING NOTES FROM FOXWARREN PARK,

1930

By A. EZRA

As usual I am giving a few notes on the nesting and rearing of my birds, and hope these will interest our members.

**BRONZE-WING PIGEONS** (*Phaps chalcoptera*).—These birds did very well this year, having fully reared ten young ones.

**SUPERB STARLINGS** (*Spreo superbus*).—Four young ones were reared in a large aviary where a good many species of birds are kept.

PIED GRALLINA (*Grallina picata*).—The old pair laid several eggs in their old nest, and young were hatched, but none were reared. All the young were thrown out of the nest when only a few days old.

CHESTNUT-BREADED ROCK THRUSH (*Monticola erythrogastra*).—One young one was hatched but not reared.

WHITE-CAPPED STARLING (*Heteropsar albicapillus*).—Two young were hatched and were deserted by the parents when about a fortnight old.

JAPANESE ROBIN (*Erithacus akahige*).—The same old pair I have had for four years laid in a nest in a box shrub in the aviary. Three young hatched but none reared.

RENAULD'S GROUND CUCKOO (*Carpococcyx renauldi*).—I have two pairs of these birds in different aviaries. One pair laid three eggs under a bush in the large aviary, but only incubated them for four days and then deserted them. This pair again nested with the same result. The other pair had three nests between May and August, and although the hen bird sat well, no chicks were hatched. Some of the eggs were fertile, and I cannot make out why they failed to hatch. This pair nested twice under a box hedge in the aviary, and the third time in a basket inside the aviary shelter. The basket was about 10 feet from the ground.

TAMBOURINE DOVES (*Tympanistria tympanistria*).—Reared two young.

CROWNED STARLING (*Galeopsar salvadori*).—I have two pairs of these in two separate aviaries. One pair hatched three young which, when almost fully feathered, were thrown out of the nest. This performance was repeated a second time and a third time by the same pair. The last lot of young were thrown out of the nest as late as October. The second pair also had young twice but none were reared. I am really disgusted with the behaviour of these birds, and cannot make out why they kill their young when almost reared. I may mention that these birds have aviaries to themselves, and are given a tremendous variety of food, including live food.

EDWARD'S LORRIKEET (*Trichoglossus hamatodes*).—Laid twice, but all eggs were broken in the nest.

WHITE-BREADED PIGEON (*Gallicolumba jobiensis*).—Reared two young.

FORMOSAN BAMBOO PARTRIDGE (*Bambusicola sonorivox*).—Three young reared which I described in the November number of the MAGAZINE. This is the first time that this bird has been bred in England. They were bred in France last year, but the eggs were hatched under domestic hens.

HARLEQUIN QUAIL (*Coturnix delegorguei*).—These birds laid a number of eggs but did not incubate any of them.

SWINHOE'S PHEASANT-TAILED PIGEON (*Macropygia swinhœi*).—A dozen young were reared. I have never come across better breeders, and although they lay only one egg in each clutch they never stop breeding and do so right through the winter.

ALEXANDRINE PARRAKEET (*Psittacula nipalensis*).—The Lutino hen mated to a normal-coloured green cock nested very early and reared three young in February. The blue cock Alexandrine, mated to a green hen, reared three fine healthy young. I have now quite a number of yellow-bred and blue-bred Alexandrines, which are all green. As soon as they are old enough to breed I am most hopeful that some yellow and some blue young will be reared.

Several pairs of RING-NECKED PARRAKEETS (*Psittacula krameri*) nested and six young were reared.

BARRABAND PARRAKEET (*Polytelis swainsoni*).—These only reared two young this year. They were put into another aviary and took some time to settle down.

CRIMSON-WINGED PARRAKEET (*Aprosmictus erythropterus*).—Reared two healthy young ones.

No small Finches were reared, although a good many nested. As I have too many in the aviary I do not expect any breeding results from these birds.

In the animal enclosure at liberty:—

MANCHURIAN CRANE (*Grus japonensis*).—Again one soft-shelled egg. The hen bird is a poor specimen but I hope to have another one this year, which should do better.

WHITE PEAFOWL (*Pavo cristatus* var.).—Three young reared.

MONAUL PHEASANT (*Lophophorus impeyanus*).—Four young reared.

SONNERAT'S JUNGLE FOWL (*Gallus sonnerati*).—Several young seen in the woods.

RED JUNGLE FOWL (*Gallus gallus*).—About fifty reared. These nest all over the woods and in the garden.

GOLDEN PHEASANT (*Chrysolophus pictus*).—A good many reared.

CHUKAR PARTRIDGE (*Alectoris chukar*).—These birds have done splendidly in 1930. Over fifty young have been counted.

MANDARIN DUCK (*Aix galericulata*).—Ten reared.

CAROLINA DUCK (*Lampronessa sponsa*).—Fifteen reared.

BLACK-NECKED SWANS (*Cygnus melanocoryphus*).—Three young reared.

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## A BIRD PARADISE

By H. MOORE

I have just returned from a twelve weeks' trip around the West Indies, which included a six weeks' sojourn upon the island of Jamaica—a paradise indeed for birds. During my six weeks' tour of this magnificent island I never once encountered a caged bird, with the exception of some pairs of gorgeous Doves kept in small aviaries at the rear of the Jamaica Institute or Museum.

How different from the previous port of call, Port Limon, at Costa Rica. At this port every house or hut appeared to possess dainty little feathered prisoners, caged in such small cages that they had little freedom of movement, and could hardly turn around without creasing their tails against the bars. In a very small area there were scores of these caged birds, one house boasting of no less than eight cages, hanging from nails on the outside of the tenement.

In Jamaica how different! Here one can see cages for sale, brass cages imported from Germany, in the window of a certain store but one never encounters a caged bird, or at least that was my experience, and birds are the first thing I look for upon any journey.

There is little need to cage birds in this Island of Springs for each and every garden, even in the heart of the city of Kingston, is one huge aviary. One has but to sit on the verandah of the hotel and

Banana Birds and Quits, Humming-birds of many varieties, Grackles, Mocking-birds, Ground Doves, Hopping Thrushes and Sugar Birds will appear before one, no further away than 6 feet. So long as one remains quietly seated one can watch the movements and colouring of these glorious birds at leisure. The metallic-feathered Humming-birds are so exquisitely beautiful that one can imagine them as emanating from a higher sphere than this old Earth. What Great Artiste designs and creates such astounding beauty in such miniature form and shape?

Many of these Humming-birds were little larger than a hornet, in many instances smaller than the locust—yet they court, pair, nest, lay eggs and incubate, possessing in their fragile miniature bodies as much vitality apparently as an Eagle. Hour after hour, from sunrise to sunset, these amazing Lilliputians sustain their flight upon gossamer wings, restless and tireless. Not until sunset do they seek rest. An astounding exhibition of vitality confined in such fragile frames. After six weeks' observation of the Humming-bird in its natural environment I am aghast with awe and admiration at the unparalleled beauty and delicacy of Nature's handiwork—work which makes the craftsmanship of the greatest artists and sculptors appear like the work of clumsy clowns. What and where IS the source of such entralling beauty?

Hovering and flapping lazily all over the towns and countryside is the depressing "John Crow".

This scavenger is welcomed everywhere for they clean up all the flesh offal, thus keeping the yards and streets clean, a very useful work. "John Crow" is the popular name given to the Vulture (Turkey-buzzard). He is a very ugly and depressing gentleman in appearance, but his great utility is undisputed. He is, in fact, a very useful public servant, an unpaid scavenger. Out in the countryside one encounters two species of long-tailed Blackbirds. One has a glossy plumage of black, with white-ringed eyes and is usually found associating in small flocks. The other is a larger bird with a head and beak like a Carrion Crow. These have no white rings around the eyes and are larger and stouter built than the former mentioned species. These latter appear to travel in pairs. There is an all black bird with white ringed, Golliwog

eyes, which inhabits the island of St. Vincent, but this bird is smaller than the Jamaican bird and is also minus the long tail.

The grey Mocking-bird can be found in both town and country. Like our English Thrushes and Blackbirds, they oftentimes commandeer a garden and use the same tree for choral performances day after day. Their song is deliciously melodious.

In the hills, even at a height of 4,000 feet, I caught glimpses of a little brown bird, difficult to distinguish from our "Jenny Wren". These tiny birds were ever so rapid in their movements and shot in and out of the shrubs like winged mice.

Around the banana-plantations could be seen Troopials, Grackles, Quits, Yellow-backed Finches, Woodpeckers, Golden Swallows and other Swallows, Solitaires, Nightjars, Owls, etc., but never once did I encounter any of the native Parrots. Owls were plentiful, and a large, almost white, Owl, used to fly across the open air auditorium of the Palace Cinema at Kingston every evening. Even the bombardment emanating from the film "Hell's Angels" did not disturb this fellow. He came across about the same time each night despite the terrific noise.

In the marshes and pools of the Milk, Black, Cobre, and other rivers, I saw long-legged Herons, grey and blue in colour, and also Egrets and Grebes. On the sea-shore at Morant Bay a pair of small birds, very much like our Grey Wagtails, were strutting and pirouetting about.

The island abounds in Pigeons and Doves. They have a Bald-pate Pigeon, a species which I have purchased in England as the White Crowned Cuban Pigeon. In Jamaica they are known as Baldpates. They exhibit some at the Jamaica Institute under this name. Their most beautiful Dove in my opinion is the Mountain Witch, several pairs of these are exhibited alive at the Institute.

Here is an interesting story for naturalists. There are but few snakes left on the island, for the imported mongoose has levied a heavy toll on them, so much so that snakes are now a great rarity. Some fourteen months ago a fine yellow snake was, however, captured alive some little distance from Kingston. It was presented to the Institute and is still there alive. For months it would not eat. They tried it

with rats, mice, and eggs, but it would touch neither. In desperation the young lady in charge wrote to the New York Zoological Society for advice. They replied that the snake would have to be forcibly fed. This feat the staff at Kingston felt themselves incompetent to tackle. Shortly after, however, the custodian of the birds and reptiles found a baby Dove dead. She picked it up and as a last resource wearily placed it in the yellow snake's cage. He immediately sprang to attention and swallowed the choice morsel. Now he takes a baby Dove or Pigeon regularly once a fortnight, refusing steadfastly any other diet.

To bird lovers wishing to winter abroad, and at the same time make a study of birds in their natural surroundings, let me recommend Jamaica, where the bird protection laws are unusually drastic. Only thirteen species are allowed to be shot or taken and none of these species are smaller than the Ground Doves, and even these thirteen species, ranging from Ground Doves to Guinea Fowl, Quail and Parrots, are not allowed to be taken or shot between 1st March and the end of July, and in some few cases the end of September.

Thus are the birds of Jamaica protected by an Act brought in by the Legislative Council.

There may be caged birds in Jamaica, but I could not find them. Verily Jamaica is a bird's paradise!

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## NOTES ON MY SUGAR BIRDS

By MRS. MURRAY

I brought over from West Indies the following pairs, etc., of Sugar Birds and other honey eaters, mostly hand-reared from the nest. It may interest other members to hear of the manner I have kept them the last eighteen months since they arrived in this country. I had no home to take them to and they had to put up with a room in a hotel with a lamp for warmth. I have lost none. There are two pairs Yellow-winged Sugar Birds, one pair Purple Sugar Birds, three pairs *Dacnis cyanus*, also believed to be pairs, and four odd Yellow-winged cocks. They are, since last April, in a house of our own and from July in a

small greenhouse, where they have a nice aviary. They have just finished a heavy moult. The first winter they never changed a feather. At present three of the cocks are just over the moult and are in perfect plumage. As to food, what they were brought up on they still prefer—bread, milk and honey, large quantities of bread is eaten, a large tin of Mellins, milk, water and honey. I find they eat nearly any fruit if sweet, and to vary their diet from the usual orange, banana, pear, and grapes, I often give them tinned fruit, they like it much. I tried last autumn to give them elderberries—the *Dacnis* ate them, but not the Sugar Birds. Blackberries they eat. The Sugar Birds eat a fair quantity of ants' eggs, fresh, but they don't care much for any live food, though the other birds eat mealworms as often as they are allowed.

I have put oat straw all against the wall, and at night you cannot see a single bird, they all creep into it, and must be very snug. I have many banana leaves to assist them in nesting, also the cotton plant, and hope for a little luck and a little sun to help in breeding arrangements, as they have been a great anxiety while waiting for this house to be rebuilt. I hope this may be of some interest to other members.

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## AN AVICULTURAL MISCELLANY

By SYDNEY PORTER

Each year brings an influx of rare and wonderful birds into this country of ours, Birds of Paradise, rare Parrakeets from Australia, lovely birds from the Far East and the South Sea Islands, and in fact from all parts of the globe; and these in turn pass into the aviaries of rich aviculturists who can afford them, and in whose hands they receive, no doubt, the attention they deserve. But, alas! for the poor ordinary folk these wonderful birds are seldom seen or heard of again.

In this chapter I will try and tell of some of my birds, the birds of the ordinary man with a slender purse, birds picked up from time to time as a collector picks up odd pieces of bric-à-brac, some in a good state of preservation and others sadly needing repair, to be cared for

and nursed back to radiant health. Oh, what a joy it is to me to rescue an ailing and sickly bird (for I have an intense fellow-feeling for such poor creatures, which may be due to some feminine streak in my nature) from its oft-times filthy and stuffy prison, to tenderly care for it as for a sickly child and gradually bring it back to health, song, and beauty. We are told in the books, by those who should know, to buy only the plump, bright-eyed, and healthy birds, but I am afraid that I cannot always do this for there are some things above "filthy lucre". If there is a sickly bird I feel that I cannot let it linger for weeks, perhaps months, in a stuffy dealer's shop, passed by each time by the "cute" buyer until at last one morning as a lifeless emaciated bundle of feathers it is thrown into the garbage bin; there are some things above £. s. d. What if we do lose a few shillings or get the worst of the deal? I think that it is the thought of coming off second-best that worries us most, but perhaps we do not come off so badly after all—silly sentiment no doubt you will say, but life without sentiment, especially where our little feathered friends are concerned, is a cold and chilly thing. And so at the risk of being called presumptuous I offer these few notes on some of my birds, past and present, collected and treasured.

THE MEXICAN GREEN JAY (*Xanthura luxuosa*).—Some writers have called this bird gaudy, but to my mind it is anything but that. One of the smallest of the Jays, being not much larger than a Missel Thrush but with a longer tail, it is at the same time one of the most beautiful of the smaller Jays. Clad in a raiment of soft grass-green, delicate almond green, azure blue, and primrose yellow, yet all the colours are soft and seem to blend into one harmonious whole. This bird is rather un-Jay-like, looking more like some beautiful tropical Thrush.

The sexual difference between the two birds is very slight and can only be seen when they are compared together; the bill of the male is slightly thicker at the base, but I have been unable to find any difference in the plumage.

Jays have always been favourites of mine. Nearly all of them have one or two shades of rich and striking blue in their plumage, some are nearly all blue or violet. They are remarkably intelligent, easy to keep, and pay more attention to their personal appearance

than most birds except perhaps Tanagers. As soon as a Jay is released from its travelling-box it will take a bath if it can get one, even if it can only wash its face in the drinking pot.

I have sometimes received Jays in a terrible condition, but after a few weeks of judicious feeding and care the change has been remarkable. If well looked after Jays will live for years, always a constant joy to their owner.

I think that it is sheer cruelty to confine such active birds to a cage; an aviary is the only place for them, but most of the foreign Jays will not stand the English winter especially the present subject, and they must be taken indoors. My birds are kept in the winter in an indoor aviary where the temperature is seldom below 60° F.

Fed solely upon soft-food Jays will not thrive. They require a varied diet such as various nuts, fruit—especially grapes, currents, raisins, green food, occasionally a very little chopped meat, also chopped hard-boiled eggs, dead mice, or small birds, peas in the pod, and many are fond of sunflower seed and cheese. They are also very fond of berries such as privet, hawthorn, elderberries, etc.; these help to keep the birds in good condition and balance a meat or artificial diet. Without fruit or berries the birds frequently die with enlarged livers. All Jays are fond of mealworms.

The Mexican Green Jay is one of the most delicate of the smaller Jays and consequently it requires more care both in the way of food and housing. To get the birds cleanly through the moult it is necessary to keep them out of doors during the summer months. Some birds are apt to be rather conservative and difficult to suit in regard to their food, and it is only by trying them with various kinds that one can find out what they really like.

These Green Jays have an extraordinary variety of calls; when they are annoyed or they see a visitor they stand upright, expand their breast feathers, dance up and down the perch, and utter a strange series of trilling notes.

I do not think that this species has ever nested in captivity.

THE PILEATED JAY (*Cyanocorax chrysops*).—Twenty or more years ago this bird was comparatively common, but now it seems to be seldom offered for sale. Deep violet blue above, and creamy white

below, with the eyebrows, nape, and a moustache-like streak at the base of the bill a beautiful delphinium blue, this bird ranks as one of the most beautiful Jays. It is much larger than the bird described previously, being about the size of a Magpie but with a somewhat shorter tail. The young birds have the breast a lovely primrose yellow, but this usually fades as the birds get older, but one which I possess now still retains this colour and very beautiful it looks, though its mate lost the yellow at the first moult.

This Jay makes a delightful aviary bird, exceedingly tame but always lively and extremely inquisitive. It is more frugivorous than many Jays, feeding upon grapes, apples, pears, and nuts, etc.; my birds will not eat mice or small birds, but are fond of mealworms.

He always keeps himself in spotless condition and is always full of the "joie de vie".

THE CHATTERING AND BLUE-CHEEKED LORIES (*Domicella garrulus garrulus* and *Eos cyanogenys*).—No bird is better named than the Chattering Lory. Whether "garrulus garrulus", this bird's Latin nomenclature, is meant to emphasize its loquaciousness I don't know. Very often "garrulus" is applied to the most silent of birds, as for instance *Ampelis garrulus*, the European Waxwing, a bird which seldom utters a sound. This Lory is one of the very noisiest of the whole Parrot tribe, and from morning to night the Chattering Lory justifies its name. It doesn't scream or screech like an "Amazon" or a Macaw, but just chatters and babbles along like Tennyson's brook. Its cries are not really unpleasant but hardly agreeable in a room, in fact a Lory is seldom an agreeable acquisition to a house, and I think that it is cruel to confine such very active birds to the confines of an ordinary Parrot cage. (Lories are very abrupt and quick in their movements, they jump and spring about almost like monkeys.) Owing to their feeding upon liquid foods such as milk, honey, etc., they soon become very objectionably odoriferous when kept in a cage, but when in an aviary in a bird-room where they can keep their wonderful plumage in order, exercise their wings, and bathe, Lories are a joy for ever or at least as long as they live. Lories are among my favourite aviary birds, and I have seldom had trouble with them. They are fed upon the usual "sunbird" mixture, that is, a teaspoon each of

Nestle's milk, Mellin's food, and honey diluted in a tea-cup of hot water, and a quarter of a sponge-cake for each bird. Some species are very fond of ripe fruit such as banana or pear and grapes, but they are rather conservative in their tastes. I find that the Blue-checked Lory will not take any kind of fruit but is fond of green oats in the ear.

The Chattering Lory is one of the largest of the Lories, being about 12 to 13 inches in length, but it is a bulky bird, being about the size of a Grey Parrot, and in colour is a brilliant shining red with green wings and yellow shoulders and the end half of the tail dark blue-green. It comes from the island of Halmahera. My bird was a devil incarnate until it fell in love with a Swainson's Lorikeet, which now shares its aviary. It is now much calmer and far more gentle than formerly, though still very excitable. I think that this bird is more beautiful than some others of the genus which are more brilliantly coloured, for their plumage always looks so "patchworky".

The Blue-checked or Black-winged Lory is a very rare and lovely creature only just about half the size of the other Lory. It belongs to the beautiful genus *Eos*, which consists of about a dozen of the most beautiful Lories known. They all inhabit the islands adjacent to New Guinea, the species under discussion coming from the Island of Schurton in Gelveek Bay. This Lory seems to be very seldom imported, which fact is no doubt due to its very local distribution and the very remote position of its island home. It is clad like the rest of the genus in a rich shining red, the throat being a lighter colour than the rest of the body, the cheeks and ear-coverts are a brilliant violet, and the feathers are slightly elongated; the thighs, the wing-coverts, and the edges of the flight and tail-feathers are black. My bird, a timid and gentle little creature, lives with an Ornate Lorikeet with whom she seems to be in love! Though they sometimes quarrel and the poor little Black-winged Lory remains crouched in a corner for a day, they soon make it up again and are fast friends for some weeks until the next quarrel. The Lories of the genus *Eos* are by far the most delicate of the Lories and require careful treatment or they soon "go off". Parrish's chemical food given with their food is often beneficial.

CEDAR BIRDS (*Ampelis cedrorum*).—Until some little time ago these

birds were comparatively rare in the European market, as most of the other North American birds are, which is due to the fact that the export of all birds from the U.S.A. is forbidden, but a large consignment arrived from Mexico, the winter home of this bird and the price which had always been fairly high dropped to a very nominal figure.

Though boasting of no brilliant colours, this bird to my mind, is very beautiful, its quiet colouring, so perfectly blended, and the soft and silky texture of the plumage rendering it a very desirable acquisition. It is a smaller and daintier edition of the European Waxwing.

As an aviary or a cage bird it has not a great deal to recommend it except its soft beauty, being rather a dull and lethargic bird, except at times when in a playful mood or displaying. The display is rather curious, and I have witnessed it many times. One of the birds, usually the male, will pluck a berry, preferably a privet berry, and with erected crest and waving wings like one of those silly mechanical toys which are made in Germany, he will hand it to the hen, who after a little dancing and wing-flapping hands it over again to her mate, and this is repeated a dozen times or more until the berry is eventually swallowed. The whole affair is most ludicrous and amusing to watch. It is usually carried on for several minutes at a time.

Cedar birds are usually exceedingly tame in captivity. They are rather large feeders and are apt to get very fat. The gape is extraordinarily wide and the bird can swallow large berries, in fact though it is only the size of a Hawfinch it can swallow large hips and small cherries with ease. In a mixed collection of Tanagers, Sugar Birds, and various other fruit and honey-eating birds, the Cedar Birds seem to prefer the sunbird mixture and sponge cake to anything else, which I am sure cannot be good for them, but after that is finished they will eat banana, grapes, various berries in season, and occasionally they will eat soft food. The only noise these birds ever seem to make is a low whistling cry, somewhat like the noise made by young Starlings in the nest.

When in perfect health these birds have a very distinct yellow tinge on the breast, but when out of condition this colour seems to fade. The characteristic wax-like tips to the secondary feathers,

though not as large and bright as those of the European Waxwing, show up more conspicuously because the bird is not so brilliant in colouring.

The Cedar Bird is very common in the United States and is a general favourite as well. Unlike its European cousin its nesting habits are not shrouded in mystery; it nests in the orchards and plantations around human habitations. It is a migrant, passing as far north as Canada, returning to its winter habitation in the Southern States, Mexico, and Central America in the fall. In a state of freedom this bird feeds almost entirely on various berries, but no doubt supplements its diet with insects; but in captivity I have never seen it partake of any insects whatsoever.

The name "Cedar Bird" is derived from the bird's partiality to building its nest in the great cedar-trees of North America. It is stated that it is double-brooded.

A cage is no place for these birds, for when they are restricted to such a small space they appear to be singularly dull and lethargic, I suppose we should be the same if we had to spend the rest of our lives between the narrow confines of a cell.

I have often longed to possess the beautiful Japanese Waxwing, but have never heard of it being imported into this country.

THE ABYSSINIAN RED-FACED BARBET (*Lybius abyssinicus*).—There seems to be no reference to this bird ever being kept in captivity until quite recently when a few were imported. Previous to these the only other imported seems to have been in 1896, though who it was imported by, and where it went to, is not known.

It seems to be a typical Barbet and in shape and demeanour also somewhat in colouring resembles the well-known Collared Barbet (*Lybius torquatus*), a bird that I was very familiar with in Rhodesia. But it differs very considerably from the other Abyssinian species, the Pearl-spotted Barbet (*Trachyphonus margaritatus*), a bird which was imported very frequently a few years ago.

The Barbets are a very widely distributed family inhabiting all the tropical countries of the world, many striking examples being found in South America and the Malay Peninsula. Although green is the general colour with most of the Barbets it is absent from the

plumage of most of the African species, red, yellow, and brown being the prevailing colours.

Barbets are usually gregarious in their habits, going about in small parties of about eight or a dozen, though Levaillant's Barbet (*T. cafer*), a bird which is very closely allied to the one under discussion, and one which I have been familiar with in a state of freedom, seems to go about either singly or in pairs.

The vocal powers of Barbets in a state of freedom are extraordinary, the resonance and volume of their voices is amazing, but strange to say they seldom give vent to their peculiar cries in captivity, though I once had a female Pearl-spotted Barbet who spent all her time calling for a mate. This bird was very anxious to nest but I was unable to find her a mate, so sent her to the "Zoo" where they had a male bird, and now whenever I see the happy pair they are always so close together that they seem to resemble one bird. I have seldom seen such a devoted couple; they seem to be continually looking at each other like a pair of lovers or else preening each other's feathers.

Barbets, unless given a certain amount of care, soon "go off" in captivity. They need rich and varied foods and fresh branches for perches or their feet get sore. If they have been for a long time in a small cage or in a dealer's shop their vitality seems to get very low, and when the moult comes the new feathers never seem to grow properly but break off in the pin stage. Good food and attention, however, soon put them right again.

I can discover no notes concerning this bird, except in Marshall's *Monograph of the Barbets* we are told that this species is very rare in the wild state.

Barbets feed mainly on berries and buds of trees, though this diet is supplemented by insects. An illustration of this bird appeared in the Magazine for December, 1928.

(To be concluded.)

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## ODD NOTES

By G. H. GURNEY

A pouring wet afternoon, with sleet and snow making it impossible to go out, must be my excuse for writing and sending up to the Magazine this very mixed lot of notes, which I do not suppose will be of much interest to anybody, but I send them for what they are worth. One is constantly seeing fresh traits and habits amongst one's birds, which, while they may not be of great value, are often worth recording, though they may not be so sensational as the accounts of breeding of new species, or the rearing of some great rarity. At this time of year when outdoor work may have to be a good deal suspended, one may, with advantage to oneself, spend more time in one's bird-room, and by watching the birds pick up new ideas, or perhaps sometimes have to alter old ones. However, even in January it is not always too wet to go round the outdoor aviaries, and one can already begin to make one's preparations for the spring, and all that one hopes it is going to mean to one. I have just finished constructing a small cement pool, at the far end of the paddock where my pair of Lilford's Cranes live; when Mr. Delacour was here last August he told me that this species would not breed unless they had access to some water, no matter how small a piece, and so far my birds have only had a large pan for their drinking water. The pool has been partially surrounded by faggots, and as I am pretty certain they are a true pair, I feel I have now given them every chance, and hope there may be some results. The Sarus Cranes live in the adjoining paddock, a large spacious enclosure, but they have never shown the slightest sign of breeding. On the other side of the Lilford Cranes in another equally large field, are a little flock of Demoiselles, with Crowned Cranes, and three White Asiatic Cranes. Beyond a number of stray eggs dropped about promiscuously by the Demoiselles, there have been no attempts at nesting; probably there are too mixed a lot together, and as I am shortly expecting a pair of Stanley Cranes, they will be a still larger party.

My bird house is very crowded at the moment, so many birds from the outside aviaries, even with slightly heated shelters, have to be taken

in to the warmer and more regular atmosphere indoors; all the damp weather we have had in Norfolk for weeks past is more than they can stand, and Starlings, I find, suffer as much as anything, and Purple-headed, Ruppells, Grey-headed, and Sprees, have all looked tighter and altogether happier since they were given warmer quarters indoors.

My Elliott's Pitta looks perfectly lovely just now. It has recently moulted, and not a feather is out of place. It lives in the greenhouse aviary, and the little collection there has recently been added to by a lovely Ground Thrush (*Geocichla interpres*), one of several recently brought over by Mr. Frost. This bird is the most wonderful songster: early every morning he sits on a branch of a small camelia-tree growing in the aviary, and pours out a rhapsody of lovely bubbling notes. I do not know what the experience is of those aviculturists who possess Green Broadbills; mine is that they are the dullest birds which were ever created. I have a very fine one by itself in a large cage: except when it feeds, it spends the entire day sitting absolutely motionless on its perch, always in exactly the same place in exactly the same position. Even when one passes the cage quickly or strangers come in, it never stirs, as even the tamest bird will do, but sits rigid, looking at one with its black bead-like eye; it's exactly like a stuffed bird. I put a large spray of an evergreen shrub, which toned precisely with the bird's colour, in one corner of the cage to see if it would try and conceal itself amongst the leaves, but it never went near it, and continued to sit motionless on its accustomed perch. I suppose they make up for their lack of originality by the brilliance of their plumage and generally quaint shape!

We have just finished building a range of new aviaries, intended solely for summer use, with a view to breeding; each compartment will contain one pair of birds only, and they have been erected in a very secluded place, nowhere near the other aviaries, where people will not go, and where the birds will be absolutely quiet and undisturbed. They are lightly built, the shelters being 6 feet wide by 16 feet long and 8 feet high, the adjoining flights 6 feet wide, 16 feet long and 7 feet high. The crowds of people who visit the birds in the summer rendered private aviaries of this description indispensable, if one wanted to breed anything; I have repeatedly had sitting birds desert their nests from being looked at. Some time

ago a number of letters appeared in the Magazine with reference to the breeding of Lovebirds, and the necessity of providing damp conditions in their nesting logs for the successful rearing of the young. I have an aviary full of Lovebirds, mostly now hybrids, but originally started with pairs of Nyassaland, Fischers, and Black-checked Lovebirds. They were all put into one aviary, more to make an attractive show than anything else, and I am not at all sure that they were all originally real pairs; anyhow, now there is every sort of hybrid. All the breeding boxes and logs are in the outside flight, and although they naturally get the advantage of rain falling on them, they also get the full rays of the sun at certain times, and must often get very hot and dry, and nothing is ever done to moisten the logs. Yet all the young Lovebirds bred in them, and they must be a considerable number, have never been anything but strong, robust young birds; two particularly lively looking youngsters emerged last week (3rd February), and indeed, the old birds seem to breed nearly as freely in the winter months as they do in the summer.

One of the few birds I have in the past always thought I could never keep here were Flamingos, for the simple reason that I have not had, up to the present, what I considered suitable accommodation for them, my small pond in the garden is 6 feet deep and cemented all round (it was constructed in case of fire), and merely does for my little collection of Waterfowl and would be impossible for large wading birds like Flamingos, and one of the things I do like to see is birds kept in more or less natural looking surroundings. I have seen a solitary Flamingo kept in a backyard, and I have seen one kept in an aviary, it was true the aviary was a large one, but anything more out of place than they looked cannot be imagined. I have got three beautiful large shallow ponds, and a long stretch of river, all ideal places, but they are half a mile away, too far off for one to be able to enjoy the birds and so no good. However, I hope I have now constructed what should be a suitable place and that I shall now be able to keep a small flock of these quaint and amusing birds. A very large shallow pool has been made in one of the enclosures, easily seen from the garden; the back of it arranged with large blocks of stone from Lancashire and tall waterside plants planted at the sides. The pool is supplied with water from the river pumped up by a ram;

and I feel that anyhow, my Flamingos, when they arrive in early April, will look fairly suitably housed here.

A few weeks ago a small travelling circus and menagerie paid a visit to Norwich. On my going to see what it contained, I was surprised to find a number of large birds not often seen in this sort of show. Although confined in cages in which they could barely turn round, in fact in one instance the bird actually could *not* turn round, but always had to stand facing the bars, and the crowd, gazing at it from the other side; but the wonderful thing was that in spite of their tiny cages, each of these birds was in the most perfect condition imaginable, all obviously healthy, and not a feather out of place; they comprised a White Rhea, a very fine Asiatic White Crane, in faultless order, some Demoiselles, a Cassowary, two absolutely perfect Angolan Vultures, and three splendid Virginian Eagle Owls. The cages were very smartly painted outside, and scrupulously clean inside, the birds were fed and watered from the outside, and anything left over was at once removed. The floors of the cages were lightly covered with sand, but the birds' feet in every case looked all right. The question of the cruelty or otherwise of keeping large birds of this description in such tiny quarters need not be gone into here; on my first visit the keeper, who obviously took a good deal of pride in his charges, told me that the Rhea and the White Crane were the only two specimens of their kind alive in England, and would hardly believe me when I told him if he cared to come out, 3 miles from Norwich, I could show him several others of the same sort! Against the perfect condition of these large birds, a number of Cockatoos and Parrakeets, reasonably housed in ordinary Parrot cages, and not overcrowded, nearly all looked miserable; poor moulting specimens, with broken feathers, and some nearly naked from feather plucking—an extraordinary contrast to the others. Some fine mammals and a few Hyenas and Bears were in perfect condition, and like the big birds kept absolutely clean, in cages newly painted white.

These odd notes are, I fear, very varied, but then one of the charms of our hobby is its different aspects, and one may always learn something fresh even from birds kept in travelling menageries, or in tiny cages, to birds more orthodoxly kept in ordinary aviaries by clever and intelligent aviculturists.

## CORRESPONDENCE

## ROCK THRUSHES

SIR,—I read with much pleasure Mr. Porter's most interesting article in the February number, "The Blue Thrush in Sicily" and, having possessed this, and the closely allied species, the Rose-breasted Rock Thrush, for some seven or eight years, I should like to endorse his opinion of the desirability of these birds as pets in aviary collections.

To say the least, these birds are very enchanting, extremely docile and most excellent songsters, and that such a bird should command such little attention by the aviculturist makes one wonder if many are conversant with it for, sad to relate, my experience is that the supply is always far greater than the demand yet, as Mr. Porter mentions, few birds are as attractive and many aviculturists will pay a far higher price for less interesting birds.

Mr. Porter mentions that few bird dealers offer them for sale, this, in my opinion, is because there are so few people interested in them either through lack of knowledge or by thinking they are delicate, as some of the earlier books suggest, but many birds that used to be considered delicate are to-day simplicity itself to keep. I had this mentioned to me quite recently by a prospective buyer, but since my assuring him of the reverse he has purchased one. My experience is that they are quite as hardy as our own resident Thrush.

I have, for the last seven years or more, regularly offered these birds in various bird periodicals, and since joining the Society listed them in my adverts, but I think I am about the only dealer who has done so. In conclusion, I trust that Mr. Porter's article will be instrumental in swelling the ranks of Thrush enthusiasts, as no collection of birds is complete without a representative of this beautiful group, and once procured no aviculturist will be without one.

P. H. HASTINGS.

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## ACCLIMATIZING BIRDS

SIR,—It is usually the custom of aviculturists to keep tropical birds imported in autumn more or less closely confined in heated quarters until the end of the cold weather, which, in our uncertain climate, cannot really be said to be much before the third week in May. The result is that such birds seldom breed before the summer of the following year. Observing that unpreventable illness among foreign birds is much commoner during the warmer months and that winter is a healthier season than summer, I decided to experiment lately in a new direction. Last autumn I received, among other additions, some Fairy Bluebirds, Layard's Parrakeets, Blue-winged Grass Parrakeets, a Rosenberg's Lorikeet, an Amboina King Parrakeet and an Antipodes Island Parrakeet. When these were thoroughly rested and obviously in first-rate health, I transferred them from their very warm quarters—temperature 70°–80° Fahrenheit—to outdoor aviaries with shelters heated to a temperature of 60°–70°.

The venture has been quite as successful as if I had waited for summer to arrive, and no birds have died.

By watching which specimens showed complete indifference to the weather and never took advantage of their warmed retreats until driven in at night, I was even able to harden some off altogether. The two hen Crimson-wings actually accomplished a complete moult in mid-winter with the heat already gone and are now in show condition. The Amboina King also showed such complete indifference to low temperatures that she also has had no artificial warmth for months. The Lorikeet seemed to appreciate the heated shelter for the first few days, but is now always in the flight; she is just completing her moult. The Layards and Bluewings I shall not deprive of heat for some time although the former spend many hours in the open, even on cold days.

The Fairy Bluebirds do not leave the shelter very much, but as I have seen one young cock, in moult, singing in the open amid falling snow I do not think they can be very delicate. The only bird to get ill was the Antipodes Island Parrakeet. This I hardened off apparently quite successfully and it seemed indifferent to bad weather until a very sharp frost set in, which caused it to contract a severe chill,

upon recovery from which I put it in an aviary with a well-heated shelter. Apparently frost, which is harmless to most of the hardier Parrakeets, is the one type of winter weather injurious to this otherwise robust species.

TAVISTOCK.

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#### DARK PHEASANTS

SIR,—In the February number of the Magazine, Capt. J. S. Reeve remarks that he bred Dusky Pheasants, alias "Melanistic Mutants", and that they were smaller than common Pheasants. This is certainly an unusual fact, as they are as a rule larger and stronger, but they do vary in size. As to the colour of the cocks, it only shows that his birds have been changing, as it has been noticed in many parts of France, into a much darker form, where females have lost all traces of light markings, being black, glossed with violet and green, with blotches of mahogany red, when cocks are all green and blue, with only lighter rump and tail, and no red markings on the flanks nor yellow ones on the upper parts.

There is no doubt that the birds are evolving and will ultimately produce an all bronze-green variety, where both sizes will be practically alike. This new darker mutant has spread tremendously in France during the last year, and had not been noticed before.

J. DELACOUR.

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#### THE PARROT HOUSE AT THE ZOOLOGICAL GARDENS

SIR,—Your contributor, Mr. A. A. Prestwich, animadverts—without any too much urbanity—upon a criticism I ventured to pass on the housing of the Parrots in the Zoological Gardens.

How ready I was to eat humble pie when I sat down to his article—how glad to forgive his unkindly words, such as "hysterical" and "puerile"—how eager to be shown that I was in the wrong and that all was for the best in the best of all possible Zoos!

Mr. Prestwich disappointed me by failing to refute any one of my points. He admits some of my "puerile objections", and brushes aside others without argument. It is not reasoning, but a mere flat statement of opinion, to say that "The cages containing pairs of Cockatoos are quite large enough for the purpose." I only wish he could persuade me that the Triton, the White-crested and the Rose-crested Cockatoos in Regent's Park are neither cramped nor bored, but it so happens that I have seen birds of these species in other and more comfortable conditions, and the difference was obvious.

Mr. Prestwich is presumably well satisfied with the treatment of the Zoo's Great Black Cockatoos—one in a small cage, the other chained to a perch; but I happen to have seen a pair of these birds (somewhere in Sussex) enjoying each other's society and a chance of movement, and I cannot but feel sorry for the specimens in the Z.S. Gardens.

Being no more of an ornithologist than the Consul in Puccini's opera, I might have been convinced by the defence of the practice of chaining Macaws to perches, if I had not read Lord Tavistock's opinion: "It is customary to keep them chained by one leg to a perch, but this is not fair nor humane treatment for creatures that are active, playful and intelligent."

Let me quote the same authority in answer to the suggestion that the best use is being made of the new Parrot House: "One wishes that the Zoological Society, which has ample money for the purpose, would provide flight cages at least for all its Broad-tailed Parrakeets, Lories, Lovebirds, and the like. There is plenty of room in the new Parrot House, where the space vertically is insufficiently utilized."

I am highly grateful for some of the charming sights provided by the Zoological Society, and my word of protest was utterly disinterested—yet since it was published I have found myself accused of (a) malice, (b) crankiness. I must console myself that in the old days those who suggested that the Zoo Parrots should be given water (of which they were deprived, I believe, during the first forty or fifty years of the existence of the collection) were no doubt also called "hysterical" and "puerile".

My letter is long, but really it speaks for a principle that concerns

the readers of your magazine, the principle, namely, whether even our Zoological Gardens (so superior in many ways to those one may see in travelling) are to be held above criticism.

RICHARD CAPELL.

The above letter was shown to Mr. Prestwich, who replies as follows:—

After reading Mr. Capell's letter I pondered for some little time as to whether any useful purpose would be served by my replying, for it would seem that he has very decided views concerning the Parrot House, and it would take someone much better versed in argument than I to modify those views. It is obvious from Mr. Capell's letter to the *Daily Mail*, part of which was quoted in *THE AVICULTURAL MAGAZINE*, August, 1930, that he heartily dislikes the House and much pertaining thereto, or he would not stress the fact that "this is simply the old restaurant, quite inadequately adapted . . ." Mr. Capell says that I admit some of his "puerile objections". The only points on which I agree with him are in regard to the lack of sunlight and the existence of a very limited amount of teasing. Concerning the size of the cages, which are used for the larger Cockatoos, etc., these are considerably larger than those used in the old House, and are certainly much larger than most people employ for such birds. Pairs of these have been put together as they are apparently much happier thus than singly.

Doubtlessly Mr. Capell has seen Cockatoos, etc., kept under other and more comfortable conditions than those prevailing at the London Zoological Gardens, but then they have probably been in the ownership of private aviculturists with only a limited number of birds to house, and who have not to consider their possessions from a display point. Objection is taken to the practice of chaining Macaws to perches, and Lord Tavistock's opinion is cited. Possibly Mr. Capell is not aware that, while Lord Tavistock has kept a large collection of Psittacine birds for a great number of years, and is undoubtedly the foremost authority on Australian Parrakeets, he has never specialized to any extent with the larger Parrots, Macaws, etc. And although due respect must be paid to his condemnation of the standard practice, one must not lose sight of the fact that it has been found by practically everyone

who has kept Macaws that they do better on stands than in cages ; in addition, if kept in cages they are almost certain to break their tails. No one visiting the Parrot House can say that the Macaws and other Parrots are not perfectly happy ; and it is evident to anyone who gets to know them that they much appreciate the attention of the public. There is no doubt whatever that the new House is a very great improvement on the old, and the health of the birds is very good indeed. I am given to understand that except for one or two detrimental comments, the new House, and the conditions under which the birds are kept, has been universally approved by those who really understand Parrots. Regarding the last part of Mr. Capell's letter, I can but express an opinion, and that is that the authorities welcome criticism and suggestions and are the very last to consider all their actions above reproach. Perhaps some of those members who have visited the Zoological Gardens since the opening of the new Parrot House would give their views and impressions.

ARTHUR A. PRESTWICH.

[It is very easy to criticize, and we should all have liked a brand new House, and a free hand to provide a long range of outside aviaries, but having to make do with an existing building, those of us who had a hand in the alterations claim that we have made the best use of our opportunities. As to the objection to the practice of keeping Macaws on stands, one would like to ask in what other way a representative collection of these birds could be kept, failing the space necessary for a series of enormous flights ? As to the Cockatoos being bored when kept in pairs, one does not hesitate to say that they are far more likely to be bored if kept singly.—Ed.]

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#### THE WHITE CRANE AT KESWICK HALL.

Sir,—Bonzo is a white Asiatic Crane, and when he came to Keswick Hall he was a poor creature, refusing to eat, and also very savage. But after being turned out into the park, he took a new interest in life, and soon became very tame and confiding, and now I can make him

do all kinds of tricks, such as dancing or jumping at my command. In the few spare minutes that I have at my disposal, I get to the far end of the park, which is a large one, and we have a race to the end of the field, the result is always a draw. I can never beat him, and at one time I was considered a runner above the average. The faster I run, the faster Bonzo goes. It is very interesting to see him go through these antics. There are many other Cranes here, but Bonzo remains king of them all.

A. MARTIN.

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### A COLLECTION OF RARE AUSTRALIAN PARRAKEETS

Dr. William Hamilton, president of the Avicultural Society of South Australia, and a very successful breeder of rare species of Australian birds, recently arrived in England with an interesting collection of Australian Parrakeets and Lorikeets, many of which were bred in his aviaries. The collection consists of Bourke's, Hooded, Elegants, Barnards, Swifts, Swainson's, Musk, Scaly-breasts, and Purple-crowned Lorikeets.

On account of the present restrictions on the importation of Parrots, these birds, which are at present housed at the Zoological Gardens, can only be disposed of to persons holding a licence to import Parrots issued by the Ministry of Health.

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### THE NOTTINGHAM FOREIGN BIRD SHOW

By ALLEN SILVER

This exhibition, held in the Milton Café Ballroom, which is conveniently situated to the Victoria Railway Station, Nottingham, took place on 19th, 20th, and 21st February. Sixty-three exhibitors contributed to a total of 391 entries of exotic birds and Budgerigars. The exhibition is the third organized by Captain John Fletcher, M.C., in aid of the Nottingham University Endowment Fund. Several prominent aviculturists, in addition to enthusiastic exhibitors, contributed in force to create a successful exhibition.

*Parrakeets* (11). 1st and 4th, Mr. H. Whitley with Red Shining and Queen Alexandra; 2nd, H. and J. W. Underwood, with a very beautiful pair of

Worcesters. Hanging Parrots: 3rd, Captain H. Liddell Grainger, with Yellow-streaked Lory; H. C. Underwood, with pair Swainsons; c. Mr. Sydney Porter, Chattering Lory.

*Lovebirds* (13). H. Whitley 1st and 2nd, with good pairs of Abyssinian and Peach-faced, the former leading; 3rd, Mapperley Hospital, Masked Lovebirds; 4th, T. Pemberton, Guiana Parrotlets; v.h.c. and c., H. Willshire; c., Underwood, West African.

*Sugarbirds, etc.* (7). Here Mr. S. Porter excelled in staging a lovely pair of New Zealand Zosterops, in conjunction with sprays of flowering plum and asparagus plumosa, which led the class, followed a Streaked Spider-hunter and a Malayan Flowerpecker, both set off with flowers tastefully arranged; 4th and v.h.c., Liddell Grainger, with Green Sugarbird and Yellow-winged.

*Blue Birds, Shamahs, etc.* (9). 1st and 3rd, H. Whitley, with a Thrush from the Celebes, and pair of Bluebirds; 2nd, S. Porter, with White-crowned Chinese Bulbuls; 4th, Blackburn, with champion Shamah.

*Starlings* (13). 1st, 2nd, and 3rd, H. Whitley, with Salvins White-crowned, and the best cock Royal we have ever examined; 4th, Underwood, good Green Glossy pair. Mr. Porter exhibited in this class a nice pair White-created Jay Thrushes, and a Scimitar-billed Babbler from Amman.

*Birds of Paradise* (3). 1st and 2nd, H. Whitley, with a red cock, looking as well as ever, with the longest wires we have ever seen, followed by a good Twelve-wired which we saw at its best at Paignton Show. Mr. Porter staged a good coloured Lesser in attractive style.

*Australian, American, and African Finches* (15). 1st, 3rd, and 4th, H. and J. W. Underwood, with Three-coloured Parrot Finches, Melba Finches, and a Violet-eared Waxbill; 2nd, h.c. and c., H. Whitley, his wonderful Pintailed Parrot Finch leading. The class also contained Rainbow, Lazuline, and Indigo Buntings.

*Cardinals, etc.* 1st, Liddell Grainger with lovely pair of Black-cheeked Cardinals; 2nd, H. Whitley, the rarer form of Blue Grosbeak, and h.c. with a good Virginian Cardinal (one of a consignment, many males of which were noteworthy in having irregular patches of straw-yellow on their otherwise red plumage, which peculiarity has been retained through consecutive moults); 3rd and c., H. Willshire, with Queen and Paradise Whydahs in pairs; 4th, Dr. Macklin, with pair of Black-tailed Hawfinches.

*Tanagers* (11). 1st, Mrs. Alexander, with a handsome Black-backed Callisto; 2nd, Liddell Grainger, with a Desmarest and two Callistes, one of which may be a true Yellow-backed, and the other a Black-cheeked; 4th and h.c., H. Whitley, a good Archbishop, leading C. S. Porter with a good Crowned Tanager.

*Cockatoos, etc.* (19). H. Whitley headed this class with 1st Hyacinthine Macaw; 2nd, Black Cockatoo; 3rd, Chrysotis Celianæ; S. Porter following with Vinaceous Amazon 4th, and Yellow-cheeked v.h.c. The class also contained a Grey, Blue-fronts, a Yellow and Green Macaw, and a Cayman Island Amazon, the latter exhibited by Mr. S. Porter.

*Common Waxbills, etc.* (named) (18). Isaac Gate led with a good pair of the large race of St. Helenas; 2nd, 3rd, and c., H. Whitley, with three good exhibits; v.h.c., Liddell Grainger; h.c., H. T. King.

*Fire Finches, etc.* (named) (13). Isaac Gate headed this class with exceptional cock Lavender and Fire Finches, 4th going to a good pair of Fire Finches shown by Mr. S. Porter.

*Mannikins, etc.* (named) (17). 1st and 2nd, H. Whitley, with White Javass and Red-headed Finches in pairs; 3rd, and v.h.c., King, Magpie Mannikins, now rare birds, and Three-coloured ditto; 4th, Liddell Grainger, with a good pair of the common Spice Finch.

*Grass Finches, etc.* (7). 1st, Mrs. Alexander, a good colour pair Chestnut breasts; 2nd, Liddell Grainger, Bichenos pair; 3rd, 4th, and v.h.c., H. Whitley.

*Toucans, etc.* (8). 1st and 2nd, H. Whitley, with good Toco and Blue Pie; 3rd, F. Hopkins, nice Ariel Toucan; 4th, S. Porter, pair Alpine Choughs, and h.c. Plumed Jays, c. Mexican Green Jays, and v.h.c., Beechey's Jays.

*Any Other Species* (16). As a class, this was unique, and to both exhibitors or ornithologists and artists an opportunity not previously presented. 1st, 2nd, v.h.c., and h.c., S. Porter, a lovely Blue-tailed Pitta led, followed by an Ammanese Blue-capped Pitto, the Green-breasted getting v.h.c., and the Granatine Pitta in black, blue, and red, with curious blue tufts on sides of its head getting h.c. All these birds were perfect in feather and health, and remained so throughout the show, moreover, they were staged on green moss interspersed with leaves, tufts of green rush, and a clump of primula gulise, the whole presenting an attractive picture; 3rd went to Mr. H. Whitley's very fine Motmot, with perfect plumage and spatules.

*Aviary Bred Birds* (15). A good class, containing Blue Pies, Mr. Porter leading a Red-collared Lorikeet Mr. Whitley's, and a Pagoda Mynah. Mr. Whitley's other easily bred birds were shown.

Hybrids contained four entries, including Barnard  $\times$  Mealy, and Tri-coloured Mannikin  $\times$  Bengalee and other birds. Abnormal Bird Class contained ten entries, including a pied Blue-fronted Amazon, Mr. Whitley's, a White Blackbird Cinnamon Thrush, and other birds. In addition to a Novice and Selling class, was one displaying Weavers and other birds, with their nests or nest-boxes and eggs. Mr. Allen Silver judged sixteen classes of foreign birds, and twelve classes of Budgerigars. Mr. C. L. Rothera judged the six remaining classes. Undoubtedly the exhibition takes first place in the provinces this year, and in some respects contained a number of birds never previously exhibited on the show bench.

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John Bull, Bore & Dordrecht, 1887

Duvvenbode's Lory.  
*Chalcopsittacus duvvenbodei.*

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DUYVENBODE'S LORY

The type of this very distinct Lory is in the Brussels Museum, to which it was sent from New Guinea by C. W. K. van Duyvenbode in 1884, and M. Alph. Dubois named it *Chalcopsittacus duyvenbodei*. The typical form occurs in northern New Guinea from the east coast of Geelvink Bay to Humbolt Bay, and Professor Newmann has discovered a slightly different race, which he has named *C. d. syringanuchalis* from Berlin Hapen to Astrolabe Bay, Sepik River.

The first example of Duyvenbode's Lory to reach London was one received by Mr. Spedan Lewis in November, 1929, and most generously presented to the Zoological Society, where it remains in excellent condition. Subsequently, Mr. St. Alban Smith obtained a pair in Singapore, and presented them to the Zoological Society, and later sent another which is now in Mr. Whitley's collection at Primley.

The accompanying plate, which has been drawn from life, renders a description of this species unnecessary. It is about the same size as the Black Lory (*C. ater*), a species to which it appears to be closely allied.

D. S-S.

## WEAVERS AND WHYDAHS AT LIBERTY

By P. B. WEBB

I am afraid that this report is very late; nevertheless, should there be anyone wishing to try the experiment in 1931, there is still enough time to make a start.

About 1st May, 1930, I procured seven pairs of Orange Weavers. I kept them indoors for about a week. On 10th May they were transferred to a box 4 feet high by 4 feet long by 2 feet, with a wire front. This box was placed in my garden, facing south.

I had in my aviary a true pair of Paradise Whydahs and they were also placed in the box.

The whole family seemed to be quite happy in their new quarters, though the weather was by no means warm. They were, however, covered up at night with a large piece of sacking.

On 18th May I cut a hole in the netting, about three inches square, fixing a perch just below, both inside and outside the wire. So far as I know none of the birds left home that day. The following day, about five were perched on a rose bush near by at midday, while the rest seemed to be inside.

On the 20th the box was inspected again about midday, and the only birds still inside were the two Whydahs. They seemed to be rather foolish, and though the Weavers were passing in and out constantly, they did not apparently find the exit until the afternoon of the 22nd. They were quite a failure as they were never seen again.

The Weavers, however, were enjoying themselves and seemed to be all present, though I could not be quite certain. However, on the 23rd I counted thirteen at breakfast time.

They seemed to spend most of their time beside the stream which runs through the grounds. Every morning and evening they appeared at the box in the garden, in force, though they paid frequent visits during the day in ones and twos.

On the morning of the 23rd I placed the food on top of the box, and after closing up the hole in the netting, placed two more pairs in the box.

The next morning I opened the hole and put the food inside again as usual. In the evening the new pairs were seen to enter the box with the others for their evening meal. They were marked with rings, so it was always easy to pick them out.

All went well for the first two months, during which time the cocks were getting their orange plumage and singing from the top of the shrubs and hedges. They seemed to choose the very highest twigs for the latter job, and were very lovely to watch. The sexes seemed about even.

About the middle of July the House Sparrows discovered that a really handsome meal was always to be found in the box. Though they did not seem to harm the Weavers in any way, I found that it now took about a pint of seed in the day instead of the usual small amount. Each day their numbers seemed to increase, so deciding something would have to be done, I made a wire netting funnel; inserting this in the hole in the front of the box, I had an extremely efficient Sparrow trap.

The Weavers, it seemed, were not upset by the funnel, and went in just the same, but once in they had to stay until the time came to remove the Sparrows.

At the end of about two weeks the Sparrows were reduced to reasonable numbers, but though the Weavers were still in the garden they, with a few exceptions, no longer visited the feeding box.

I believe that once a Weaver was caught in the Sparrow trap it did not return, but instead, found its food as a wild bird does.

As the weeks went on the Weavers seemed to grow slowly less in number. I am satisfied that this was not because the birds were dying, but because they were dispersing, the reason being that they had ceased to feed in the box and therefore had no wish to remain.

I managed to catch up four birds in late October, all of which were cocks, one being a Scarlet-Capped Weaver.

It is noteworthy that no bird once liberated spent a night in the feeding box. It was never discovered where they slept. Two nests were found near the stream, one in a shrub (*spiræa*) and the other in a bamboo. Both were empty. So far as is known, the birds did not breed.

It is my intention to repeat the experiment this year, and, paying special attention to the following points, I hope to turn failure to success.

(1) Arrange the feeding box so that, if possible, the Sparrows will not find its contents.

(2) If they do find it, let them enjoy themselves.

(3) Stick to Weavers for the present.

I would say, in conclusion, that the experiment was very interesting indeed, even though it was a failure. It was successful, however, in the fact that the birds were seen very regularly, and the beauty of the cocks at liberty was very wonderful.

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## GREAT BUSTARDS AT SCAMPSTON

By W. H. ST. QUINTIN

At the beginning of 1901 there were five Great Bustards here: two pairs of my own and a third male, which I was taking care of for a friend. I happened, the other day, to come across a photograph showing the three males (the two females were in an adjoining enclosure); and our Editor kindly consented to find a place for it in the Magazine, perhaps being influenced by the thought that, owing to the growing scarcity of this splendid species, it might not be easy to get such a record in a few more years, with increasing population and the accompanying motor-cars and aeroplanes.

The male Bustard, nearest my bird-keeper, Arthur Moody (now in charge of the fine collection at Lilford Hall), had been here ten years; and when this photograph was taken would be between 11 and 12 years old. The bird nearest the camera, with the very rich chestnut neck-bands, and the third male on the left, with the two females in the next enclosure, were privately imported from Spain, with other interesting birds (including some Pratincoles), by Mr. Meade-Waldo and myself in 1897. I mention these two females, though not in the picture, because one of them a few months after this photograph was taken distinguished herself by hatching a young bird, as fully described by me in a back number of the AVICULTURAL MAGAZINE (New Series,



COCK GREAT BUSTARDS WITH MR. MOODY AT SCAMPSTON.

[To face p. 128.

vol. ii, p. 188). We were unfortunately unable to rear it, that summer being exceptionally damp and cold.

The Great Bustard is not a bird of a confiding nature! If its nervousness is overcome by care and patience, it becomes aggressively impudent, but never tame and trusting! As a contrast, four years later, we reared two Little Bustards at Scampston, in another wet and chilly summer. But in that case the mother bird, being thoroughly tame, allowed us to fix the light of an ordinary garden frame over the nest, so that, during incubation and even after hatching, for several critical weeks, the birds could creep under and were kept dry.

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## SOME AVICULTURAL NOTES

By W. H. ST. QUINTIN, J.P., F.Z.S., etc.

[The following Notes formed the Presidential Address to the Yorkshire Naturalists' Union, delivered at Scarborough on 11th December, 1909. They were published in *The Naturalist* for March, April, and May, 1910, and although written more than twenty years ago are of such interest to aviculturists that we have sought and readily obtained the permission of the Author and the Editor of *The Naturalist* to republish them.]

I feel that I have no business to select such a subject as I have chosen for my address, unless I can show that I have also some contribution to offer, however humble, to the science which is the bond which unites us together. Now, what can an aviculturist do in this direction? How far is the keeping of birds in captivity of any scientific value? I put aside altogether the keeping of birds for exhibition purposes. It cannot be claimed that science learns much from bird shows as such, although, of course, the demand for rare and beautiful "exhibits" does stimulate the importation of uncommon species, and brings into the country birds which would otherwise not come into the possession of those who wish to keep them for purposes of study.

I think an aviculturist's hobby is only likely to produce scientific results if his birds are kept, first of all, in good health and condition;

and secondly, as far as possible under fairly natural conditions, and especially if they can be induced to breed.

If an aviculturist is fortunate and successful, he can, to a considerable extent, supplement the work of the scientist in the laboratory and museum, by filling up gaps in the history of a bird, and by elucidating points which it may not be possible to observe in the case of a bird when at liberty. As examples, I will presently refer to certain habits of the Sandgrouse and Brush Turkey.

In referring to my birds, I mean to treat of some facts, which besides being curious and interesting, have not been recorded in the standard ornithological works which we generally consult; though sometimes they have been noticed in some of the journals. At the same time I will, as far as I can, only deal with such actions and habits as might be expected of birds in a state of freedom, if one had opportunities of seeing them; and to steer clear altogether from noting the eccentric behaviour of individuals which, though often amusing enough, are of no scientific value.

I will deal with the Bustards first, for it is a family in which I have long taken great interest. I have kept Great Bustards for some twenty-three years, and during that time I have never been without specimens.

My first GREAT BUSTARD came to me from a respectable London dealer, who was as ignorant as I was then of the extreme care required in packing these birds. There were no signs that the hamper had met with ill usage on the way, but the poor thing reached me with one wing and both thighs broken, and I learnt then how fragile are the bones of these heavy and excitable birds. This was a very bad start, but the late Lord Lilford most kindly set me up with several others; and what was of still more value, he taught me how to keep them. They must have shelter from wind and wet, and above all things, they must be kept out of danger of sudden frights. The Great Bustard, however thoroughly tamed, if suddenly scared, is as likely to injure himself as one of the larger antelopes or deer, in captivity, and one cannot say more than that! I can myself speak to several disastrous instances of damage and even death resulting from sudden frights. A friend of mine lost a female bird which was peacefully feeding on the

lawn, but which dashed itself against the house when startled by the sudden apparition of a gipsy coming round the corner. A male, which I had kept for thirteen years at Scampston, was frightened by a gardener, whom he did not know, coming up with a broom on his shoulder, and in his alarm fractured a wing bone close up to the body, opening an artery at the same time, and bleeding to death in a few minutes. A specimen of the great Australian Bustard, which had just been let into his paddock for the summer, after being confined in an aviary all the winter, leaped into the air in play, as these birds do, and coming down heavily, broke both his thigh bones, and had to be destroyed. This was in the London Zoological Gardens.

In 1897, with a friend, I imported several Great Bustards from the South of Spain, one of which, a female, still survives. Another of this batch distinguished herself by hatching the first young Bustard ever hatched by a tame bird in this country, so far as records go.

And here I may say that the male Great Bustards are not fully adult, with, in the breeding season, their chestnut pectoral bands; and their pouches are not fully inflatable, till they are about five years old. The females probably breed when a season younger. The female mentioned above as having hatched a young bird in 1901, was just four years old; while a young male of the same age was not that year in fully complete nuptial dress at the time she was incubating.

There have been sometimes wild suggestions that the Great Bustard if domesticated would be of great economical value. The argument being—the Turkey is an undoubtedly useful bird, and why not also the Great Bustard, which is very nearly as big? I need hardly say that these enthusiasts ignore some essential facts connected with the Bustard's nature: First, it is in no way related to the order which contains the fowls and gamebirds; secondly, it is not adult till it is four or five years old; thirdly, it lays only two, or at most three eggs; fourthly, though several persons in this country have for years been trying to breed them in captivity, no one has yet been successful!

The hatching of a young Great Bustard in captivity, being such an exceptional event, perhaps I may refer to it. At that time I had a fine old male in full display. In addition to the four-year-old male above mentioned, there were two young hens of the same age running

with him ; and besides the one which hatched, the other also laid eggs, but they were unfertile. The male never seemed to notice but the one female, and so far as it goes, this case points to the birds having paired, though some persons who have watched Great Bustards in the wild state consider them polygamous.

In the enclosure there was a group of coarse grass tussocks, and the hen bird made a deep scratch, with no lining amongst them ; and when she was sitting she was well concealed. I was amused to see that both the males were quite aware that the hen was hidden in the grass, and used to strut round the place, peering forward with outstretched necks. When they came too near, the hen, still hidden, would sometimes utter several gruff barks, as if warning them to clear out. The Great Bustard, by the way, has no note except this bark, which is not loud, and a curious whining whistle, which carries a long way, and is particularly difficult to locate. This is, I believe, the cry of the young, but it is occasionally used by the adults, when separated from their companions, and in distress.

Though peaceable enough at most times, the old male would not allow the young male to "display" in his sight, when the female was sitting. He spent most of his time in a distant corner of the paddock, occasionally dropping his wings, and inflating his pouch, till he began to moult. In the wild state the hen birds in the early summer leave the males, and go off to the standing crops to lay, and the sexes live apart till the autumn. When two male Bustards fight, they spar awhile, and then grasp each other's beaks, and push and pull until one gives way, and runs. I have never known Bustards do each other any serious harm.

Although we had no data to go upon, I expected that a month might be the period of incubation, as with the Cranes ; and on the twenty-eighth day the female rushed out at my man from the long grass, but from a place a little away from the nest ; and on searching where she came from, he found a young bird, standing but with closed eyes and very weak. It was unluckily most extremely cold and wet, and the conditions could not have been more unfavourable. The little bird never was seen to feed, and was found dead the same evening. I lost the mother bird that autumn through a chill, and have never been



FEMALE LITTLE BUSTARD WITH HER TWO NEARLY ADULT CHICKS, REARED AT SCAMPSTON.  
THE ONLY YOUNG OF THIS SPECIES REARED IN CAPTIVITY.

so near success since that date. Still I have a hen that lays regularly, and sometimes incubates; and I have by no means given up all hope of bringing off what would be rather an avicultural triumph.

I have seen nothing which supports the statement copied by one author from another, that the bird sheds its primaries altogether, like the Waterfowl, and some other birds; and that it is flightless until these feathers grow again.

The story ran that at that time the adults used to be taken by greyhounds. I believe this is an entire fable. At any rate, with my birds the moult of the quills is a prolonged business, and goes on simultaneously with the change of the other plumage during the late summer and autumn months.

Neither can the bird run exceptionally fast. Its usual pace is a stately walk, often a strut. No doubt a winged Great Bustard would flap along, like a wounded wild goose, for a few hundred yards; but any dog or an active man would, I should expect, run it down if he could keep it in sight.

I am sorry that my name should be in any way associated with the extermination of our old Yorkshire race of Great Bustards, but I fear I can't gainsay the story told in Mr. Nelson's *Birds of Yorkshire*, published by the Yorkshire Naturalists' Union, that a gamekeeper in the employ of my family in 1806 actually managed to destroy eleven Great Bustards at one shot in the East Riding.

When we recollect that at most twenty years converted a splendid species, fairly plentiful in England where conditions suited it, into a mere memory, it is to be hoped that we shall never again make such a deplorable mistake; and that all true naturalists will discourage those two mischievous arguments—"Why! what does it matter? There are plenty more!" or "If I don't take it someone else will; I'll have it!"

I will next refer to the LITTLE BUSTARD, of which I have two males and three females, which came to me in the plumage of the first year, when the sexes much resemble each other.

After the first moult in the second autumn, the vermiculations on the feathers of the male's upper parts, especially of the shoulders, are finer than in the case of the female; and henceforth the sexes are

easily distinguished at all seasons. The striking breeding dress is assumed by the males at the end of their second year, but my hen birds did not lay till they were a year older.

In the past summer, for the first time, one made a nest, merely a "scratch" in a bunch of coarse grass, laid three eggs, and sat steadily. But in the end, though the eggs contained chicks, none were hatched. No doubt some specially severe storm of that miserable season drove her off the nest, and the eggs got chilled. The other females dropped eggs in the enclosure, which were put under hens. Young were hatched, but we could do nothing with them. They would not pick up food of any kind, nor take it when offered them. One was kept alive a week, by being crammed, and then died. In a favourable summer I think these birds might be bred, but the young, if hatched, must be left to the parents,<sup>1</sup> who, no doubt, like the Rails and Cranes, pick up food, and hold it for the young to take. These birds undoubtedly pair, whatever the Great Bustards do.

CRANES are very interesting birds to keep. Most of them soon become very tame, and show much intelligence; and except the African species, they bear our climate, if they have some shelter in the worst of weather, very well.

Though I have representatives of seven species, I have only successfully reared the Demoiselle.<sup>2</sup> This is curious, for several other species have bred in this country (five species at Woburn this year), while the only other Demoiselles reared, except at Scampston, were at Lord Jersey's place, Osterley, in 1797.

My Demoiselles were early breeders. About the middle of April they always made their nest on a flat piece of ground within a few yards of a stream. The nest merely consisted of a small handful of birch twigs, and the eggs rested on the ground. This used to be the case with some Common Cranes that I had; in their case the first egg used to be laid, and then a few bits of stick and sedge arranged round it. But some of the Cranes make large structures.

<sup>1</sup> In 1915 two Little Bustards were reared at Scampston, as described in the AVICULTURAL MAGAZINE, 1917, 30.

<sup>2</sup> Since this statement was made, I may claim that seven species laid eggs in my enclosures, including *Monachus*; while five species hatched, including *Sarus* and *Australasianus*, but unfortunately in the last two cases the chicks were not reared.

Once there was a thunderstorm, and the water in the beck rose and threatened to swamp the nest. The next morning we found the egg, a single one that year, quite nine feet further inland, and some fifteen inches higher up the slope.

When there were two eggs, the female began to sit when the first egg was laid, and, of course, there was an interval between the appearances of the chicks.

The nestling, after a few hours, can stand, and during the first day totters about within a yard or two of the nest, the parent which is not incubating the other egg, tending it closely, brooding it when necessary; and when it is hungry going off to forage for insects.

At first the fly or beetle is brought right up to the chick, but the latter soon gets stronger on its legs, and goes forward to meet its parent.

When the second chick is strong enough, the parents lead both away, and they never return to the nest, but the old birds are very careful and clever in choosing a dry and sheltered place to brood the young at night, or if rain comes on. If anyone approaches, the parents get very excited, and try to draw one off, crouching with spread wings, and feigning lameness.

When the young birds are quite strong, it is a very pretty sight to see the birds four abreast, the parents outside with the young between them, parading up and down through the long grass, each old bird reaching out to catch an insect, and offering it to its particular young one.

Once, in spite of their extreme devotion, it was curious to see how both old birds passed over one young one which did not thrive, and favoured the better bird, with the result that the fittest only survived.

It is, so far as I know, very unusual that there should be any irregularity in the shedding of their flight feathers by birds. The rule is that they are cast once a year, and at the same season.

Probably if the matter were looked into, it would be found that in all cases there is a regular order in which the principal feathers are cast. In Falconry the moult is a very important matter, and is closely studied. The Falconer knows that the first feathers to be thrown by his Peregrine will be the first secondaries, and the last important

feathers the outside tail-feather but one on each side. What the rule may be in the case of the Cranes I am not yet prepared to say, but I am satisfied that the larger species, such as the Sarus, Whitenaped and Wattled Crane, and perhaps others, do not cast their primaries every season. This has been also noticed in the very fine collection of Cranes at Lilford.

The Cranes, like the Waterfowl and Rails, are flightless during the moult.

Most of the Waders accommodate themselves readily to confinement, and the smaller species show themselves much better if they can be left full-winged. Like the Gulls, in an aviary they are very clever in avoiding the perches and sides of their prison, and take a great deal of exercise without damaging themselves at all.

Amongst the small Waders, there are none more deservedly popular than the RUFF, and it thrives in confinement, if given plenty of clean water and good turf.

The REEVE has reared her young with me, or rather the young have reared themselves; for though for a few days the Reeve caught insects for them, they soon foraged for themselves, scrambling over and amongst the long grass, and finding plenty of natural food. One had to be very quiet, if one wished to see the young, for, till she got used to one's presence, the Reeve kept piping her alarm note, and the chicks remained invisible till she stopped.

REDNECKED PHALAROPE. A kind friend who was fishing in Iceland last summer found himself near a breeding colony of these birds, and brought back three adults for me, two males and a female. The birds are extremely tame at their breeding place, and he had no great difficulty in catching them. But it was only by the exercise of very great care and skill that he brought them down country on ponyback, and through the risks of a tedious voyage. However, they reached me in splendid order, the female, as usual, much the larger, and with a more conspicuous chestnut patch on the neck.

They soon made themselves quite at home on a small pond with a stream flowing through it; and though they readily ate ants' eggs and finely chopped meat, they caught a great amount of natural food off the water and from the grass overhanging the margin. This largely

consisted of gnats and other winged insects. Sometimes one would be seen to swim to the shallow end of the pond and to spin round for several minutes together, joined perhaps by one or both of the others, paddling furiously with his lobed feet and pecking at the particles, some evidently edible, which rose from the bottom in the currents thus produced. It was evidently a deliberate action, and is probably regularly practised in the wild state, but I have never seen it recorded.

Flamingoes can be seen to shuffle their feet rapidly, stepping backwards all the time, and searching with their reversed bills for food uncovered, probably molluscs and the fine roots of water plants. Plover, Gulls, and Thrushes adopt other means of setting worms in motion, so as to expose their whereabouts.<sup>1</sup>

**BRUSH TURKEYS.** I don't think any of my birds created more surprise and interest than some Brush Turkeys which I once kept. They were of the common species, *Cathartus lathami*. I found them fairly tolerant of our climate, but I used to keep them in a dry shed till mid-April. As soon as they were let out, the male would begin to make his mound, raking together all the loose soil, leaves and grass, for a radius of some twenty yards from the selected spot, which was always out of the sun, under the protection of an overhanging tree. The bird turns his back to the place where the heap is to be, and grasps with his particularly large foot as much of the material as he can manage, and flings it backwards. Once I happened to be about when the cock bird was laying his "foundation stone", so to speak. He had excavated a short trench about two and a half feet by one foot. Presently the mound was raised above this trench. I never satisfied myself as to the object of this trench, nor do I know if there is always one underneath a mound. Certainly it was not for the reception of the eggs, for they were never laid less than two feet above the ground level, though as the mound consolidated they sank with it.

Of course, the male only, worked. If sometimes, especially at feeding times, when any titbits were going, his treatment of his wife appeared old-fashioned, to do him justice he never, like the primitive human races, left the hard work to the weaker sex, for he was always

<sup>1</sup> If anybody doubts that earthworms can be heard, let him put a few healthy worms in a flower-pot of loose earth, and hold it to his ear, when they can be distinctly heard moving about.

busy at something, sometimes at useful work connected with the mound, at other times trying to dig a way under the fence of his enclosure, so as to get at some rival on the other side.

The incubation of the eggs within the mound depended entirely upon the proper fermentation of the materials of the composing mass. Von Rosenberg found that the temperature in the interior of the mound of another species, *Talegallus fuscirostus*, was 93° Fahr., when that of the external air was 85° in the shade. Workers of incubators will remember that a temperature of 104° is required to hatch the eggs of the domestic fowl.

(To be continued.)

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## AN AVICULTURAL MISCELLANY

By SYDNEY PORTER

(Concluded from p. 111)

THE EUROPEAN JAY (*Garrulus glandarius*.—How seldom we appreciate anything which is common; if a thing is rare, no matter whether it is ugly or otherwise, we are always anxious to possess it. If the European Jay were a denizen of the forests of Venezuela or the mountains of New Guinea, we should be willing to pay very high prices for it on account of its delicate beauty and intelligent ways. But because it happens to be common and can be bought for the modest sum of five shillings or so we neglect it, and pay as many pounds for foreign Jays which are perhaps not half so beautiful as our bird. In the Bible we read that a "prophet is not without honour save in his own country", and this applies to our friend *Garrulus glandarius*.

It is a great wonder that this bird has been able to maintain itself as well as it has done, for few birds are the object of such ruthless persecution. Gamekeepers' larders boast of strings of dried and mangled corpses of these lovely birds, gardeners shoot and trap it, and so do poultry keepers, and it also has to pay a very heavy toll for its beautiful blue wing-coverts which are still in demand for artificial flies and hat ornaments. Any other bird endowed with less intelligence than a Jay would have "gone under". This ceaseless persecution has developed in the Jay a wonderful instinct of self-preservation.

It is the wariest and most difficult of British birds to study in a state of nature. Always on the alert, it sees danger long before the other birds, and it seldom exposes itself in the open like the Magpie. The only time we see it is when it crosses some woodland walk, a flash of black, white, brown, and blue.

In captivity there is no more charming or intelligent bird than our native Jay. Of course, confined to a wretched Blackbird or Thrush cage as we often see it on the wall of some cottage in the country, I should imagine the Jay is rather a dirty and smelly pet, but when in an outdoor aviary when he can bathe and exercise his wings, no bird keeps itself in better condition.

The best way to procure Jays, if one does not live in a district inhabited by them, is to watch the columns of *Cage Birds*, when in the spring time one often sees fledglings advertised at a very nominal rate. These usually make charming pets.

Two birds which I have now, a true pair, which live in an outdoor aviary, have proved themselves very amicable with the other birds, though of course no very small ones are kept with them. The male is an exceptional mimic, he is always whistling little tunes which he hears from butchers' boys and the like as they pass on the road. Both birds are exceedingly tame and will readily come to one's hand for a mealworm.

Given suitable accommodation I think the birds would readily go to nest.

It would be a sad loss to British Avifauna if this bird were exterminated, but I don't think that it ever will be, for it has learned through bitter experience to adapt itself to conditions and no doubt will be able to hold out until the people of this country have lost their taste for slaughtering wild creatures for the fun of it, and give protection to the feathered inhabitants of this island home of ours.

THE BLUE-THROAT (*Cyanosylvia suecica*).—Considering what charming birds the Blue-throats are, it is strange that more is not heard of them in captivity. Looking through the back volumes of the Magazine, one finds but a few meagre references concerning them, though I believe they were more extensively kept in the old days than they are now, when there was a greater market in this country for Continental birds than at present.

In general demeanour the Blue-throats seem to resemble the Redstarts more than any other family of birds; once upon a time they were known as Blue-throated Warblers, why, goodness only knows. From what I have seen of them they seem to have no affinity whatever to the Warbler family, for one thing they are practically terrestrial and in that way resemble the Redstarts.

The best way of keeping these birds is in a small indoor aviary or large cage, with leaf mould on the floor and also several large stones or pieces of rock, also a piece of growing turf or a small plant in a pot. A good-sized bath should be given, for the birds are exceedingly fond of bathing, in fact some will bathe as many as six times in a day. A good insectivorous food, a dozen or so mealworms per day, and as many live insects as one can procure, will keep this bird in perfect health for years.

A livelier or more confiding bird is hard to find; its demeanour somewhat resembles that of a Robin and when in good health it keeps its plumage in perfect condition.

The Blue-throats, of which there are two species, are on the list of British birds (though most of the ones on the English market come from Germany), but are only known as autumn visitors on the east coast, passing from their summer home in the far north of Europe to the more hospitable climes of Southern Asia and Northern Africa for the winter.

These birds are supposed to have a fine song "as if a golden pea leaped and vibrated in the pipe behind his gaudy bib", but it has never been my luck to hear it; my birds have always been of the strong silent kind! But I have often noticed that birds which are particularly garrulous in a state of nature, are strangely silent when in captivity, and when one sees how some birds are kept, this is not to be wondered at! I have seldom heard a sound beyond a low kind of clicking note.

Unless a good supply of live insects are given both before and during the moult, "the gaudy bib" will come out a light and much paler blue.

The Blue-throats are in size, shape, and colouring very much like our English Robin, but the upper breast and throat are a brilliant shining blue, and this is divided from the lower breast by bands of

black, white, and chestnut; one species has a white spot in the middle of the throat, and the other a chestnut one.

There is another nearly allied bird, the Ruby-throat (*Erithacus pectoralis*), a lovely little bird from the Far East and very much like the Blue-throats, but has the throat and upper breast a shining ruby-red. This bird is sometimes imported, and would no doubt make a charming pet; there was one not so long ago at the "Zoo".

THE ICTERINE WARBLER (*Hypolais icterina*).—A small, delicate, and chaste-looking Warbler, with nothing much to recommend it except its rarity. It is usually tame and confiding but rather dull. It should be fed upon any quantity of live insects, especially small smooth caterpillars and spiders, and a rich insectivorous food, and if kept in a heated bird room it will live for several years.

It is a self-reliant little bird, and while not bullying other birds, it will brook no interference by any other bird even though six times its own size; it has defied me many a time, with legs set firmly apart, quivering wings, and wide-open beak. The inside of the beak, by the way, is bright yellow, and when on the defensive the bird opens the mouth as wide as possible and shows this colouring.

The books state that this bird partakes of fruit, berries, etc., but I have never known my bird to take them when offered.

The Icterine Warbler is about the size of the Blackcap, and of a pale olive green above, and very pale clear yellow on the breast and under parts. It is a very rare visitor to this country, but is fairly common in Germany in the summer, also in Northern Europe and some parts of Italy, but it returns to Central Africa in the winter.

MEYER'S PARROTS (*Pseuophalus meyeri*).—After my Imperial and Bouquet's Parrots, no birds which I possess bring back pleasanter memories than my little pair of Meyer's Parrots; whenever I see them a picture comes back into my mind's eye of a vast undulating plain with winding snake-like rivers, edged and often hidden by luxuriant tropical vegetation, so that only here and there are seen open patches of water reflecting and intensifying the eternally blue skies of Africa, and in the distance the mysteriously blue Hunyani Mountains which seem to recede further away as one approaches; and on a rise from whence the sky seemed a huge blue bowl with serrated edges made by

the ring of far blue mountains, stood a venerable M'sasa tree, where, when its sickly sweet fruits ripened, could be heard all day the chatter of our little friends as they fed upon the fruits. They wasted a terrible lot, for Parrots are surely the most wasteful birds in creation. Sometimes the tree seemed to be raining half-eaten fruits. Let a stranger approach and the chatter would cease and not a sound be heard, and, search as diligently as one may, not a Parrot would be seen, for no bird I know of harmonizes so well with its surroundings as this little Parrot. It seems to become invisible.

The birds usually live in pairs, and though one may see small flocks of them in a tree feeding, they never go about in flocks. After they have fed and dozed for a time, they disperse in their respective pairs.

No bird I know of is wilder or more difficult to approach than this Parrot. It is easier to get within reach of an Eagle than a Meyer's Parrot, and yet no bird makes a tamer or more charming pet than this lovely little bird.

These Parrots are sometimes caught by the natives, who find out their roosting places and lime the twigs; they are then sold to the white people unless the natives eat them in the meantime, but they seldom live long, for they are usually fed on dry maize. The digestions of the poor little creatures cannot stand this kind of stuff after the fresh sweet fruits which form their natural diet, and they soon "shuffle off this mortal coil", killed no doubt by agonizing digestive pains. I am afraid that our colonial friends pay very little heed to their pets, especially when new ones can be supplied by the natives for a few pence, and aviculture is not the science in the colonies that it is here.

All the smaller African Parrots are charming, the Senegal, the Meyer's, Ruepell's, the Brown-headed, etc.; they are so intelligent and if taken young soon get very tame.

There are three distinct forms of this Parrot, the common variety, the Transvaal form, and the Damara form. I think that my birds may belong to this latter form. In colour the male is a dull greyish brown above, with a very broad stripe of canary yellow on the head; the shoulders, a large patch on the wing-coverts, and the under-wing are also this colour. The back and lower parts are a pale but bright greenish

blue, the female is quite different. She lacks the bright yellow, the head and neck only is the greyish brown, and the rest of the plumage is rich dark green.

ST. THOMAS'S CONURE (*Eupsittula pertinax*).—This is another of the disappearing West Indian Parrots, and is extremely rare on its island homes of St. Thomas and St. Croix, but, strange to say, examples sometimes turn up on the market at a reasonable price. I suppose this is because the dealers do not realize the great rarity of this bird, and also because there seems to be little demand for Conures, though when I once offered two Conures of a different species in *Cage Birds* as a gift I received nearly 300 replies!

Speaking of the extermination of the birds of St. Thomas and St. Croix, we read in that monumental work, *A Dictionary of Birds*, the following concerning this bird: "One of the survivors (a Parrakeet), now regarded by Count T. Salvadori as the true *Conurus pertinax*, is or was a few years ago restricted to a single hill-top in St. Thomas, and so reduced in numbers that the present writer was ridiculed by many of the inhabitants for believing that such a bird ever existed in the island. Found, however, it was but it must be regarded as verging upon extinction."

It has been stated that this bird lives upon the Dutch island of Curacao, which is quite likely, for St. Thomas and St. Croix were formerly Dutch before they were sold to the U.S.A., and this bird may have been introduced there, for it is very unlikely that it is its natural habitat, for it is over a thousand miles from the other islands, and there are many hundreds of islands in the intervening space, but I only hope that this is true and that the bird is not so rare as it is thought to be.

Though a small bird, it has all the faults of its larger relations in being noisy, terribly destructive to woodwork, and very quarrelsome in regard to other birds, though a pair which I now possess are a most devoted couple and always back each other up in a fight. If one bird is attacked the other will go for the aggressor at the back, and thus release the other bird. Upon one occasion the hen had her head torn open by a cock Meyer's Parrot, and I only discovered this as the wound was turning septic. Repeated bathing with hot water and applications

of peroxide of hydrogen, however, saved the bird's life, but the devoted couple nearly went frantic when separated. They called and talked to each other all the time when in different cages, and when the little hen was being "doctored" and no doubt in pain, she continued to call for her mate. After being separated for a few days I put the hen back, and the reunion was quite touching, but I had to take her away again, for her mate opened the wound again by his ardent caresses.

This little Conure is bright green. The male has the forehead, cheeks, and throat a bright orange yellow, the lower parts being a pale brown tinged with yellow, while the crown is a bluish slate colour. The hen is altogether duller and lacks the bright orange yellow. They are very fond of apple. The calls have not the ear-piercing qualities that those of most of the Conures have, and though loud they are quite musical—in a way.

THE MORICHE ORIOLE OR GOLDEN-CAPPED HANGNEST (*Icterus chrysocephalus*).—Whilst staying for all too short a time in the lovely island of Barbadoes, I was introduced to a gentleman, a keen aviculturalist, who by the way is now a member of the Society, who kindly asked me up to his house to see his interesting collection of South American and indigenous birds, and I was particularly struck by a pair of these beautiful brilliant black and gold birds, which I later on found to be the rare species mentioned above.

These birds of extreme grace and slimness are about as large as an English Starling, but of a much slimmer build, and of a deep velvety black with the top and back of the head, the lesser wing-coverts and shoulders, the lower back and thighs a brilliant golden yellow, a most striking combination.

With true colonial generosity, Mr. Carter, the gentleman in question, offered to give me one of the birds, and with some hesitation, for I knew how difficult it would be for him to get another one, I accepted his kind offer, and on the day the ship sailed carried off my treasure in triumph.

Mr. Carter told me that he purchased the bird from some one who had brought it from Trinidad, and after it had been in the aviary for a day or two another one was seen outside endeavouring to enter,

a door was opened and the bird entered. It is not indigenous to Barbadoes, in fact it hails from Trinidad and the Guianas, and the only explanation I can offer to this singular incident is that a pair may have been brought over, one escaping, and afterwards, finding its mate and love triumphing, it sought imprisonment with its mate rather than separation.

After leaving Barbadoes I went to Trinidad, and in going one day round the Indian quarter of Spanish Town, I was delighted to see another of these lovely birds in a small and filthy cage hanging on the wall of a very decrepit shop. Well, to cut a long story short, I got the bird for seven dollars with a Blue-head Pionus thrown in.

I put the two birds together, but the result was disastrous, they went for each other bill and claw, and would have no doubt fought to death in a very few minutes.

On board ship they were fed, owing to my not having any soft food, on bread and milk, oranges, chopped egg, and as many cockroaches as we could catch. They sang nearly all the time they were on the ship.

It is a common and also a very erroneous notion that brilliantly coloured birds do not sing. The Moriche Oriole is an exceedingly beautiful bird, though only boasting of two colours, but it is perhaps the finest songster of the South American Continent. Its song is the sweetest and the clearest of any bird I have ever met with; it seems to combine in its song the sweet full notes of the Nightingale, the richness of the song of a Thrush, and the continuity of the song of a Roller Canary. In some parts of Venezuela it is known as the "Bugle Bird", why, I cannot say, for the song has no resemblance to the sound of a bugle.

William Beebe tells in his delightful book, *Tropical Wild Life in British Guiana*, quite a lot about this charming bird, and perhaps I may be forgiven if I quote rather at length from a beautifully written chapter in regard to this bird.

"One of the first birds to greet us at Kalacoon was the Moriche Oriole. These birds were unusual in their charm, for they were satisfying both to the eye and the ear. From dawn until the passing of the swift tropical twilight their black forms, crowned and shouldered

and booted with gold, looped palm with palm or glanced in the sunlight as they sped away to the denser second growth in search of insect food. And hardly ever did they perch without giving utterance to the silvery thread of warbling notes which, while individual and distinctive, yet with no less certainty declared their Oriole relationship.

“Late in February, upon our arrival at Kalacoon, we discovered no less than five nests of this Oriole in the single royal palm in the compound in the front of the house. We soon found that only one pair of the Orioles occupied the tree, and each day it became more and more probable that this pair was the architect of all five nests.

“Two of the nests were complete and apparently several months old. Three were unfinished, and upon two of these we saw the birds working intermittently. One of these nests contained two eggs, one of which we took, as it had apparently never been described.

“The nests were placed on the under side between the leaflets of one side of the frond about two feet from the tip. They were made entirely of shreds of the leaves themselves, which the birds had torn from a particular frond, a frond which through their industry had become almost denuded. The green fibre was woven with the bill, and the process was not a simple one. The nest was a fairly deep cup, held in place by the rim and sides being woven into separate leaflets. The leaves were split with the bill, and the shreds of fibre woven in and out until the leaf was safely bound to the side of the nest. In the case of two of the nests, the sewing was very finely done, not unlike the work of the tailor bird of India.”

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## ON THE HARDINESS OF TREE DUCKS

By Captain H. S. STOKES

I have ventured once before to advocate the charms of Tree Ducks in the garden, but expressed the doubts usually recognized as to their hardiness. At the first approach of cold weather I had noticed that these Ducks looked miserable and tucked up, and was in the habit of

driving into a shed such as could be rounded up. They were then kept indoors till frost had disappeared. The result was not altogether satisfactory, as I found that their feet got dry and cracky, and that after enforced abstinence from water they lost some of the natural oil in their plumage and would soak themselves by bathing directly they were released. For this reason and others they were left out to take their chance during the recent spell of severe weather, and have all come through it in perfect health. We had fairly deep snow for a week, and up to 16° of frost, with a bitter east wind, but the Tree Ducks seemed to mind it less each day and their feet kept in perfect order.

The water here is a slow-running muddy stream which freezes over in parts, but remains open by the waterfalls. The species kept include the White-faced, Red-billed, Fulvous, and Black-billed (*Dendrocygna arborea*).

If any members should be tempted to go in for Tree Ducks on the strength of this note, may I advise them not to pinion their birds, but to clip one wing. Their great charm lies in their tameness, and that after regaining their power of flight they will not stray away. They will fly from place to place in the garden in search of their feeder, and will wheel round high overhead on a summer evening before retiring to roost whistling very prettily all the time.

[Unfortunately neighbours who possess guns cannot always be trusted to respect Tree Ducks when they "wheel round high overhead on a summer evening".—Ed.]

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## THE DISPLAY OF THE AUSTRALIAN BUSTARD

By R. R. MINCHIN

Thinking it may be of some interest I am sending a photograph of a male Australian Bustard which has lived in the Adelaide Zoological Gardens for the last eight years.

In his excellent work on Australian birds Mr. A. J. Campbell says: "During that period (the breeding season) the male Bustard

has a curious habit of 'showing off', as the children would say, by ascending a slight knoll or eminence on the plain, where he makes frills of his feathers and cuts all sorts of capers, majestic or otherwise." If that author had ever seen that interesting bird in full display, no one could have described its actions better than he, but from his description I feel sure that he never did witness them to the full.

The bird in these Gardens selects a sunny spot in the open and, erecting his tail, he raises it until it touches the back of the neck. Then, throwing the head up he opens his beak (as shown in the photograph) and takes in a quantity of air which is seemingly held in the throat. Closing the beak with a hollow sounding "plomp" he then forces the air down into the air sac which hangs from the chest, and from deep down in the throat there is emitted a sound which may be compared with the roar of a primus stove! Although not very loud this sound has a remarkable carrying capacity. During the above actions the Bustard constantly marks time, and in doing so swings the air sac to and fro until the earth becomes bare and polished and the feathers completely worn away where the lower end of the sac brushes the ground.

These actions lead one to surmise that *Eupodotis australis* is polygamous and that the cocks remain at their displaying ground and call the hens to them. The cock here keeps up this display practically without interruption throughout the day, and as long as the weather is fine he will keep going for several weeks. During this period the bird will attack one, and in doing so can use his beak to a very useful purpose. In the off season and at will during the breeding season, the sac is drawn up until it is hardly noticeable and not much larger than a man's closed hand.

In captivity these birds will eat almost anything, and their diet here consists of raw meat, grain, and any kind of fruit. They are particularly fond of chopped-up apples.

The female of the pair we have only had for two years, and so far they have made no attempts at nesting.

Most unfortunately the flesh of the Bustard is excellent eating, and this is one of the many factors that are going to cause its early extinction.



THE DISPLAY OF THE AUSTRALIAN BUSTARD.

[To face p. 148.

## BREEDING TURQUOISINES, ELEGANTS AND BOURKE'S PARRAKEETS

By S. HARVEY (Adelaide)

Being interested in the notes on the Turquoise Parrot written by Messrs. E. J. Boosey and A. Brooksbank in the December number of the AVICULTURAL MAGAZINE, I am writing a few notes on my observations. It appears to me that the time of the year the birds are hatched has something to do with the colouring, or possibly the season has some effect. I have not made a study of the colouring of the young Turquoise Parrots, but intend to in the future. They certainly vary a great deal.

In 1926 one pair of Turquoise reared two nests of young with four in each. In the first clutch there were two hens and two cocks; one of these cocks was showing the red wing patches when it left the nest, the other showed them about a week later. In 1929 eight Turquoise Parrots were reared, there were two cocks and six hens. These cocks did not show the red on the wings for some weeks, one of them was quite six weeks before I noticed the red. These eight young ones were reared by two pairs and both were double brooded, each pair rearing a clutch three and one.

This season (1930) six Turquoise Parrots were reared by two pairs, both had three each. Strangely enough, these have turned out to be five cocks and one hen. Three of them were reared by one of the pairs that reared young in 1929, but the other three were reared by a pair that had not reared young before. So you cannot make it a rule that Turquoise Parrots breed a preponderance of hens. In 1927 and 1928 I had more cocks than hens.

The Elegant is not always single brooded. In 1929 a pair I had on their own reared two nests of young in the one season. The hen commenced sitting again before the last young one had left the nest. Last season I had six pairs in a large aviary together, they all nested, but once only.

A week before Christmas three young Bourke Parrots left the nest. I had four pairs in separate breeding aviaries. Logs were hanging

inside the house, also one box 16 inches long by 7 inches square, with a 2 inch diameter hole in one end. This was covered with bark and was hung on the angle and a turned block, similar to a money till, was fixed in the bottom corner; bark was also put inside the box leading to this block. A similar box to this was hung in the flight against the front of the house, and it was in this that the Bourkes nested.

Dr. Clendinnen of Melbourne first made these boxes and reared some Bourkes before mine thought of nesting, and if I had not taken his tip to make these boxes I do not think I would have reared any Bourkes this season.

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## CORRESPONDENCE

### WALLABIES AND STARLINGS

SIR,—The following note is, I fear, hardly avicultural, but perhaps it may be allowed to pass.

I keep a few Wallabies with my Rheas and Cranes, and twice recently, during the very severe weather which we are at present having, I have noticed Starlings sitting on the wallabies' backs, presumably hunting for insects, the animals paying no attention to them at all.

Of course, it is a common enough thing to see Starlings sitting on the backs of sheep, and in East Africa I have seen quantities (twenty at a time) of Wattled Starlings clinging to the backs and sides of rhinoceros and native cattle, diligently searching for the ticks which infest these animals, also, but in a lesser degree, on the backs of zebras and some of the antelopes; but I should be interested to know whether other members, who keep wallabies in a state of semi-freedom in large enclosures, have witnessed the same thing? I must say, although wallabies have been kept here for years, I have never noticed it before, but the deep snow and eighteen degrees of frost may account for the birds unusual temerity.

G. H. GURNEY.

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## FEATHER PLUCKING IN PARROTS

SIR,—Referring to my letter in your issue for last November :

I have at last received reports upon the two Parrots given your "Fat" treatment. Two other victims have since been added to these patients.

All are completely cured, and in good condition.

I quote the last report received by me, so that you can satisfy yourself as to the genuineness of these cures.

"DEAR SIR,—In reply to your post-card *re* my Parrot.

The seed and diet you prescribed worked wonders, her feathers improved, she lost all the greyness and patches on her breast.

Should have written you before, but mislaid your address.

I must thank you sincerely for your very great kindness in helping us out of our difficulty. Polly is such a wonderful bird, talks and sings all day long.

GEORGINA FITZPATRICK."

Has any member tried cod-liver oil as I suggested ?

It seems a fact that we have now definitely established a cure for this destructive plague.

As prevention is better than cure, and the undoubted cause seems to be an unsuitable diet, may I ask you, as an authority upon Parrots, in order to prevent future suffering by these dumb pets, to prescribe a suitable mixture for both Amazons and Greys, in the hope that by propaganda we may stamp out this scourge ?

DENYS WESTON.

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 MASKED LOVEBIRDS AS FOSTER-PARENTS

SIR,—In a small aviary at Keswick Hall are several pairs of Lovebirds, including Masked, Fischer's, and Blackcheeks. During January a pair of Blackcheeks went to nest and three eggs were laid, the hen sitting well for about a week, when she was turned out of the nest by a pair of Masked. Thinking that the eggs would now be spoilt, I took no further notice, but my surprise was great when several

days later I heard faint chirpings coming from the nest-log, and on closer inspection found two small chicks were hatched. After being turned out of their nest the Blackcheeks were not allowed to go near the log. The Masked proved themselves to be good parents, and the young have now left the nest, and are strong healthy birds, and no mistaking them for anything but true Blackcheeks. The Blackcheeks have again gone to nest, four eggs being laid. The Masked this time are not interfering with them, their time seems to be taken up with their adopted youngsters.

A. MARTIN.

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## A GENERAL INDEX

As foreshadowed in our January number, our member Dr. Hopkinson has lost no time in carrying his most generous offer to compile an index to the back volumes of the AVICULTURAL MAGAZINE into effect and we hope very soon to publish this invaluable work. It was, of course, impossible to produce a *complete* index with references to every name of a bird such as is published with the yearly volumes, but the compiler has gone carefully through the whole of the back volumes and indexed everything of importance, and there is no doubt that the volume when published will be of the utmost service to our members.

It is not possible at present to say what the cost of publication will be or the price at which it can be sold to members, but we sincerely hope that every member will purchase a copy, and so help to defray the cost of publication. A definite announcement as to the date of publication and the price of the index will be made as soon as possible.

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See also Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

*Red-breasted Parrot.*  
*Poicephalus rufiventris.*

*From a living example presented to the Zoological Society by Col. H. P. Keelan, D.S.O.*

# THE AVICULTURAL MAGAZINE

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## THE RED-BREASTED PARROT

The subject of the accompanying coloured plate—*Poicephalus rufiventris*—inhabits North-Eastern Africa, and is one of the most beautiful of a very charming group of small Parrots, of which the best known are the Senegal and Meyers. The Red-breast is but seldom imported, and has the reputation of being difficult to keep in captivity. Indeed, a small collection of three which reached this country a few years ago appear to have all died very soon after their arrival. They were extremely shy, and evidently captured as adult birds. The particular bird figured in this number has an interesting history. It was taken from the nest in Somaliland in 1901, during the military expedition sent out to punish the Mad Mullah, and hand-reared by Colonel H. P. Keelan, D.S.O., who presented it to the Zoological Society in 1927. It remains one of the prizes of the collection.

D. S-S.

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## NOTES ON BREEDING GREEN AVADAVATS

By GODFREY DAVIS, I.C.S.

I have seen Green Avadavats advertised at 25s. a pair, but some time ago I would not have given 25 farthings for them; now I have had a pair breed and rear two young in one of those oblong bamboo cages so familiar to anyone who knows the bird markets of India

I would give 25 pence for a pair but not more. They are not to be compared for general attractiveness with the Common Red Avadavat ; they do not sing ; they have a certain beauty and when they are in good condition the breast feathers shine like silk, but they are timid, frightened little creatures, even when tame.

It was July last year that Hussain, my bird dealer friend in Bombay, sent me, in response to my modest request for a few pairs of Green Avadavats, no less than three dozen. But alas ! they were not destined to live long. They had been overcrowded and though I put them out at once in a large flight cage, many sat with their heads under their feathers and would take no notice. Some of the cocks at once started to display ; they pointed the beak straight down at the ground, puffed out the striped feathers at the side and hopped stiffly up and down round the chosen hens. I removed three healthy looking pairs and caged them separately, but only one pair survived ; all the others disclosed a disease which wasted them away and of which the most pronounced symptom was a constant movement in the throat as if the bird was trying hard to swallow. It was a lesson to me that when I receive small birds in any number to separate them and to cage them in separate pairs at once.

The only pair which survived soon became tame. I put them in a bamboo cage and tied to one end the little wicker cage I use for breeding, but the cock did not display and though soon after I found two eggs in the nest, the hen did not sit. I removed them to one of my large French breeding cages, but though they always slept in the nesting cage and disappeared therein at the least provocation, there was no attempt at breeding until the following rains in July. Even then I did not see the cock display, but he chased the little hen about the cage, pulling her feathers out till she looked as if she was well in the moult. I gave them fine grasses to line the nest which I had roughly shaped of coarse grasses ; the cock would take none but the finest grasses to the nest, but though the hen laid four eggs, plain white, as is usual with these " little foreigners ", and the little hen sat with exemplary patience, the eggs were infertile.

I had not seen the cock display and I did not think he was in breeding condition and I found it difficult to find food to attract him.

Very tiny gentles, which my St. Helena Waxbills ate greedily, the Avadavats would not touch ; seeding grass, too, did not seem to attract them ; soaked Indian millet was their only luxury until I tried them with white ants, the favourites of the Grey Francolin, and these they ate greedily. This confirmed my belief that these little Waxbills must be far more terrestrial in their habits than other Waxbills. They did not seem to appreciate the long flight of their large cages ; they used to sit contentedly side by side upon the ground like two tiny Quails, and the stripes on the sides seemed designed, like the stripes on the tiger, to break the outline when they squatted on the ground ; they seemed to be longer in body than other Waxbills, and when the cock did come into condition on a diet of white ants he did not display upon the perch at all. He hopped stiffly up and down upon the ground as I had seen the other cocks do when I had first released them in the large flight cage. Moreover, they seemed far happier in the comparative shade and seclusion of a bamboo cage than in the large wire flight. From this I drew the inference that Green Avadavats when wild haunt secluded jungle and live largely upon the ground. To-day, 2nd March, two young Green Avadavats have left the nest ; the nest was the little wicker nesting cage, with a khaki cloth cover, hung on the door at one end of the bamboo cage, measuring  $26\frac{1}{2}$  inches long,  $14\frac{1}{2}$  inches wide, and  $14\frac{1}{2}$  inches high ; the nesting cage measured 8 inches long, 5 inches wide and  $5\frac{1}{2}$  inches high. The cock lined the grass nest I had roughly made of coarse grass with the finest feathery grasses he could find. He tested each grass by lifting it by the end in his beak, until satisfied he was equal to the load, for these Avadavats are very tiny things. Satisfied he was equal to the burden he carried the grass by the end of the stem to the nest, where the little hen was waiting to receive it ; feathers they did not use to line the nest. The hen laid four white oval eggs, but the weather was chilly and only two hatched, and the young were reared on white ants and yolk of egg chopped fine and Indian millet, sprouted and dry. The eggs took thirteen days to hatch and the young left the nest after twenty days. As the grass withered in the nest, so the cock would add other grasses, which I gave him, to keep the hen quiet and secluded. The cage was placed on a packing case in a small room measuring 10 feet by 10 feet, with one small

window opposite to which the cage was put. This little room, in which I have bred all my birds, faces north, but the cages are put out in the early morning and the late evening sunlight in the garden and the room is sufficiently lit by this small window in the fierce midday light of India. The young are not like the hen, as some books say. They are not striped at the sides; the head and the upper plumage is a dark olive, in some lights almost dusky, and the breast is a pale greenish-yellow, but a colour difficult to describe; the beak is lead colour; but the young resemble the hen in this, that while the cock is almost a grass green the upper plumage of the hen is an olive-green, and in this way the sexes can easily be distinguished by one who has seen both. The tail of the young is black, like the parents. It would appear Green Avadavats are not difficult to breed provided white ants or ants' eggs are procurable, but I do not think they are worth breeding. The little Zebra Waxbill and the Red Avadavat are both infinitely more attractive.

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## MY AVIARIES

By C. H. MACKLIN, M.R.C.S., L.R.C.P.

If our Editor is short of articles of more importance he may like to print the following very ordinary account of my present Aviaries, or the arrangement of their inmates at the beginning of this season.

Until I draw a horse in the Calcutta or Dublin Sweepstakes my aviaries will never contain, I fear, any but ordinary and inexpensive birds, but as there must be many other members of the Society in a like case some of my notes may be of interest to them.

I find that throughout the year few days pass when some little item of interest may not be jotted down in my Aviary Diary.

Some ten years ago when I was able to start bird-keeping again after the war interval I had one small aviary. In 1926 I moved to a house with a beautiful old walled-in garden and each year since then has seen another corner of the garden occupied by birds until my enclosures of various shapes and sizes now number seven, with an eighth in view if room can be found for it.

No. 1 is the stable loft fitted up with two flights and cages for winter use ; it is now practically empty. I use a single burner " Valor Perfection " oil stove for warmth when necessary.

No. 2 a small lean-to affair in a corner between the garage wall and garden boundary wall facing S.E. Shelter and flight about 10 feet long, 5 feet wide, and 6 to 7 feet high. Here are my pair of Cockatiels which took second prize at the Crystal Palace in February. Last season they thoroughly disgraced themselves ; started by throwing out, one after the other, the first clutch of eggs as they were laid and then refusing to sit out their time on several other clutches ; in all the hen produced thirty-six eggs and hatched none.

This year they have started better and are now sitting steadily. They are very tame, but the cock is excitable and inquisitive, and must rush out of the nest to investigate any unusual noise during his spell of duty.

With the Cockatiels are three pairs of White Budgerigars now settled down to their first nest. Budgerigars are kept chiefly to help pay the food bill and with luck to supply the wherewithal to buy new birds ; they have certainly more than paid for themselves for the last two seasons.

No. 3. My largest aviary, 23 by 8 by 10 feet high : the shelter is an old brick-built shed, and the back of the flight is a brick and timbered barn wall. Shrubs and a honeysuckle grow in this aviary and there is a patch of grass large enough to be cut by the mowing machine as well as some rough tussocky grass at the sides. Last year some of my Weavers rather damaged the growing shrubs but this time I have excluded all birds likely to destroy foliage.

Here are a pair of Shamahs, both delightfully tame, especially the hen. I am very hopeful that they will nest this year. In 1930 the cock never came into real breeding condition, and they only got as far as inspecting nesting sites. I am now trying a new cock ; at present they are not very friendly but have only been introduced for a week, and at any rate, have not come to blows.

A pair of Pileated Finches are in their second season ; they made no attempt at nesting last year but are charmingly confiding birds, especially the hen, who will follow me round for a mealworm. The

cock's beautiful and distinctive crest is only raised when he is excited or interested, then up it comes, not only raised but spread out sideways like a fan.

Pekin Robins ; a pair, but not too friendly with each other, the cock is tame and gracefully catches his daily mealworm ration in mid-air ; he is a very fair songster.

Diamond Doves ; a pair in their fourth season here ; they are kept apart during the winter, the hen indoors ; within a week of putting them together they have made a nest on top of a Hartz travelling cage hung inside the shelter and are busy incubating. This pair are fairly good parents for Doves, and have reared quite a large number of youngsters for me. They are very silly about choosing nesting sites and sometimes persist in building a flimsy affair which has no chance of standing the strain of incubation. A coconut husk cut in half horizontally and hung near the aviary roof under shelter is, I find, the most satisfactory nesting-place, and they will often take to it. The cock's display to his mate is one of the prettiest sights in the aviary, as he bows low before her and spreads his long black-and-white tail in a fan over his back.

A pair of Bronzewing Mannikins, the smallest birds in the aviary, but quite the most self-important ; they have seized one of the Doves' half-coconut husks and have built a gigantic nest of straw and grass, it was most amusing to watch them flying up with building material of astonishing length and size.

The hen of a pair of Redheaded Finches is not very strong on the wing, she may improve outside, they are otherwise a beautiful pair and should nest.

Two Red-vented Bulbuls may possibly be a pair, one sings quite nicely ; we shall see when they settle down. I am not sure whether the Shamahs and Bulbuls will agree, but they have room to keep out of one another's way,

A Cock Red-eared Bulbul has improved greatly in looks since he came outside, and is a very fair songster. A young cock Scarlet Tanager just coming into colour is very lively, and will be very handsome later on ; he was bought as the hen of a pair, the cock in full colour died.

A single Malabar Mynah, a quiet and inoffensive little Starling, whose sober colour scheme is distinctly attractive, and lastly my one surviving Gouldian Finch, a fine red-headed cock bred here in 1928; his mate died during the winter; last year she threw out two lots of half-grown youngsters.

No. 4 is a two-compartment aviary, 14 by 10 by 6½ feet high, the shelter built against the end of my stable wall with the flights in front. The first compartment contains eight pairs of Budgerigars, all the cocks are sky-blue and the hens mixed colours. With them is a solitary cock Blue-winged Lovebird; I have been trying to get a mate for him for two years, but I'm afraid he will have to remain a bachelor and watch his neighbours rear their numerous progeny; he seems perfectly friendly with the Budgerigars. In the inner and smaller compartment are a pair of Black-tailed Hawfinches from China; they are rather difficult birds to accommodate with nesting sites; growing shrubs are defoliated at once, and they won't look at boxes, I have given them fir branches nailed to the side of the aviary. I find they will eat little besides sunflower, hemp, apple, and greenstuff; they are a nice tame pair and did well at the Crystal Palace and Nottingham Shows.

No. 5. My first aviary, which I built entirely myself and which was moved in sections from my old house. It was originally meant for Waxbills, etc., and is wired with ¾ inch mesh wire, shelter 7 by 4 feet, flight 12 by 4, height 6 feet, with sanded path, turf and growing shrubs in the flight. Here are my flock of Zebra Finches, five pairs busy nesting, a pair of Chinese Painted Quail, very nervous little birds, I had to clip their wings severely to prevent them killing themselves by flying violently up against the wire roof. A few Cock Waxbills, most of which have been here five or six years, an Avadavat and two Silverbills complete this aviary.

No. 6. In two compartments built in a corner of the garden where there was once a greenhouse so that the back and one end are against high brick walls. Size 10 by 14 by 6 feet 6 inches high, the shelters are brick built. The first compartment contains five pairs of Budgerigars, Cobalt and Olive cocks, Blue and Mauve hens; eight cock Weavers, and one Whydah are here also, as they are too destructive to be allowed elsewhere with growing shrubs. The Budgerigars seem

to take no notice of them ; there are Crimson Crowned, Rufus-necked, Masked, Yellow, Orange and Napoleon Weavers, and a Pintail Whydah.

The inner compartment houses one pair of Nyasa and two pairs of Black-cheek Lovebirds and a pair of Californian Quail. I find it a great mistake to overcrowd Lovebirds ; two or three pairs to a compartment is ample, no matter how large the flight may be. There are sure to be fights and maimings if a larger number of breeding pairs are kept together ; Nyasas and Black-cheeks are far less pugnacious than Masked and Fischer's ; the latter I found particularly treacherous.

No. 7. A "rustic" structure of fir poles and  $\frac{1}{2}$  inch wire, in a corner, enclosing a large bay bush, about 10 by 15 by 9 feet high, contains a pair of Californian Quail, terribly wild beggars in spite of clipping their wings, a particularly well coloured and tame pair of Pekin Robins, cock Brambling and hen Chaffinch, and a cock Shamah. Part of the roof and one end are boarded in for shelter, the back and half one end are against ivy-clad brick walls.

Here I hope to turn out a pair of Blue Rock Thrushes when I can get them. When they do come the Shamah will have to go back to his cage.

Here then is my bird family, numbering about 100 and giving me endless interest. Rather less than an hour before breakfast sees them fed and watered ; the cleaning out is done weekly by my gardener, who can also take on the feeding when I am too busy. I find it an ideal hobby for a country doctor with limited spare time.

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## TWO ASIATIC ROCK-THRUSHES

By ALEX. HAMPE

The interesting article of Mr. Sidney Porter in the February number of our Magazine prompts me to write a few lines about two Asiatic Rock-thrushes, which are probably only known to a few of our members. During one of my visits to the native city of Shanghai I found in a small birdshop a very young bird which I recognized at once as a Rock-thrush, but of a species which I had never seen before. I tried to buy the bird, but the dealer named a ridiculous price and

I left the shop. I had nearly forgotten the bird, when months later I paid a visit to a Japanese birdshop in Shanghai and again met my friend in a very small cage.

He looked much better and had changed his grey plumage into a beautiful powder blue robe adorned with a deep chestnut-red breast and belly. "This time the bird must become mine," was my first thought, and after a little bargaining I carried him home.

With the help of that valuable book *Les Oiseaux de la Chine*, by Père David, I soon found out that my new acquisition was *Monticola solitaria philippensis*. I suppose the correct name would be Eastern Blue Rock-thrush. During the next few weeks my bird greatly improved and soon became one of the tamest birds I ever possessed. Whenever I or my Chinese servant approached his cage he would carry on a friendly conversation with us just as if he wanted to tell us how good life was now, and when let out of his cage he would take short flights and often settle on my hand or on my shoulder. He never tried to peck me or my boy, but woe betide any stranger who would enter when he was out of his cage. He would fly at them furiously and I had to shut him up, for his pointed beak could inflict nasty pecks. His song, which he performed with great zest, was not very loud, but very sweet and agreeable. In spring he used to display like a miniature peacock as soon as I approached his cage. After he had been for one year in my possession I sent him with a small consignment of rare birds to England, where he was safely landed. I never found another one in Shanghai, but when last year in South Japan, I had occasion to watch this Rock-thrush in liberty. I saw the bird on the rocky coast of the inland sea, always on the rocks, never on a tree. The Japanese name for this Thrush is "Iso-hio", which means "small seashore bird". I am told that it is rather a common bird in Fukien.

The second species of Rock-thrush of which I want to speak is the "White-throated Rock-thrush" (*Monticola gularis*). In Père David's book is a coloured plate of this bird which often made me wish to possess such a Thrush as a cagebird, the more so as Père David describes its song as "sonore and mélodieux". I had to wait a long time before my wish was fulfilled. Two years ago I found at

last an example in a small shop tied to a perch with a string round the neck, the way birds are often kept in the North of China.

The bird was perfectly tame and I bought it. I put it in a proper cage, where to my astonishment it became at first very wild but soon settled down again. After I had it a week it started to sing and, indeed, Père David is right, the song is *sonore and mélodieux*, and in my opinion is one of the best bird songs one may listen to. This good quality in connection with the very handsome plumage makes it a very desirable cagebird; a pity that it is very rare. Only about half a dozen reach our bird market in spring, and last year I could not find any. It is a rare migrant in the Yangtze valley, and according to Père David nests in Manchuria. For the members who have not seen the bird, I give a short description, according to Père David. Upper parts of the head and neck and the small wing-coverts of a lustrous blue, ear-coverts, back and upper wings black with a white speculum on the inner secondaries, back and under parts rusty brown with a white spot on the throat.

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## A FEW FACTS ABOUT THE ELEGANT PARRAKEET

By Dr. WILLIAM HAMILTON

As I have probably had more opportunity than most people of studying the Elegant Grass Parrakeet (*Neophema elegans*) in its natural state, a few notes as to its habits may be of interest.

Some five years ago, while away on a motor cabin cruiser with a medical friend of mine, we went ashore near a creek running into the Murray River, some miles from its mouth, in order to shoot a rabbit for our supper.

When we landed some small olive-green Parrots flew out of the grass, and disappeared rapidly from view.

Some others were discovered flitting from one tobacco-tree to another, and I decided that they looked like the Elegant, which at that time was reported to be very scarce and in danger of extinction.

Some months later I went down, in company with a trapper, to

investigate these birds. We found that a few were still on this head-land, and determined to come the following week-end with nets to try to trap some.

We came down to this spot every week-end for six weeks, set our nets overnight, and arose at daybreak to try and catch Elegants. I might state at this juncture that the Elegant is not like most Parrots—he is difficult to catch, and it was only after studying him for years that we met with any measure of success.

The trapper who came with me is probably the best bird-catcher in Australia, so it was not through lack of skill that we failed.

In six week-ends we caught ten birds, and six of these on one day.

Each time we added to our store of knowledge, and when we thought we knew all about the Elegant he would show us a new trick next time.

As you know, he is a small golden-green Parrakeet, with a two-colour blue frontal bar, and the same two blue colours on the edge of the wing. The blues are turquoise and Prussian. The chest is golden-green, merging into yellow on the abdomen, with a patch of orange between the legs. This patch develops with age, and is missing in the young birds. It can attain the size of a shilling, but only in a fairly old bird.

The tail is bluish-green in centre tail-feathers, with yellow feathers on the outer sides.

The beak is dark horn-coloured, but in the young birds is light yellow when they leave the nest.

The Elegant has three cries: A sound like "Zit-Zit", when flying normally through the air; a harsh noise of alarm as a warning to others; and a pleasant, twittering chatter when at rest on a tree or in company with other Elegants.

This bird is always found near coastal sandhills, and in the sandhill country in the interior of Australia.

The wild tobacco-tree grows in profusion in these districts, and where it grows you are likely to find Elegants.

The colour of the Elegant is remarkably protective, and he is difficult to detect, even to the trained eye, when sitting among the tobacco leaves.

These tobacco-trees have a broad green leaf, and are covered with yellow flowers and the green and yellow of the Elegant blend perfectly with them. I have seen Elegants in plenty all along the coast of South Australia—even along the West coast, and some 300 or 400 miles up north, inland. Where we came across them by accident there were at least 3,000, and I can safely say that they will never become extinct through the agency of man. The country where I have found them is sandy, and very poor quality soil. It will grow little and will not carry many sheep or cattle, and so does not attract settlers.

The birds seem to have chosen a natural sanctuary, and are increasing yearly. In the winter the majority migrate to the interior to breed, though I have found nests on an island near our catching-ground.

The Elegant is a shy bird, and not very companionable. He is not curious either and that makes him hard to trap, facts we observed in a period of five years.

They fly singly and in pairs—big flocks are exceptional, though late at night when returning to their sleeping place one may count twenty or thirty in a flight, but this is not common. Several eights and sixes are not unusual. We would arise before the sun, as the first Elegants always came over from the island where they slept as soon as the sun arose. They fly at about 300 feet and a few would alight on our headland, but the majority flew overhead and separated, going in different directions to their feeding-grounds along the Murray River. One may flush them from any of the small islands near the mouth of the river, feeding on grass seeds and thistles. They even eat the boxthorn berries when other food is scarce. Those that landed on the headland where we were would stay until about 8.30 a.m. (sunrise at 5.30), and after that they would disappear, and be seen no more until about 4.30 in the afternoon, when the "Zit-Zit" would be heard, and the solitary bird would be seen flying high and returning to the island. Occasionally a few would alight on the headland before flying over the creek to the island. We never had much luck trying to catch in the afternoon. When they alight they always land on a dead tree, with not a leaf on it, and face into the wind. Their natural enemy the Hawk is very plentiful here and up north, and the Elegant finds that he has a better view if he sits on a dead tree and can see all round.

When he is sure the coast is clear he flutters to a live tobacco-tree, none of which are more than 12 feet high. Here he rests awhile, and then flutters to the ground, keeping close to the tree. One or two others may now join him, but they never get very close to one another.

If there is grass they eat the seeds—if not, then one can see them scooping up a beakful of sand and sifting it with their tongues until they get the grass seeds or tobacco seeds, each tobacco flower when dry having hundreds of very tiny seeds which drop on to the ground. They run about in little short runs, and look very attractive against the brownish sand. They breed about August, and I have seen young ones fairly early in September. The young are dull-coloured all over, with dull blue edges to the wing, and a faint frontal band. Lighter coloured abdomen but not yellow and no orange patch.

The families keep together and the father generally arrives on the tree first, to be followed a few moments later by his family. They call to one another when flying, and when they have arrived in the tree commence this pleasant chattering noise.

Most Parrots are curious—but not the Elegant. When trapping most other Parrots, one uses a call-bird on a brace in the net. When he hears his species flying overhead he calls to them, and they come down to a neighbouring tree, have a look round, see him in the net, and being curious, promptly join him: the net cord is pulled, and over shoots the net. Then you rush out and take Master Parrot out of the net and put him in a cage. Not so Mr. Elegant. He does not call to his kind—possibly some unwritten law relative to capture. He is sitting in the net, and some others alight in a nearby tree. He ignores them, and they look at him but evince no curiosity.

They may sit on that tree for twenty minutes, and all the time you are sitting in your hide of branches with the pull rope in your hand, waiting for one to fly down—not daring to breathe or move, as the slightest movement would be seen through the leaves of your hide.

You may be sitting on your leg or in some uncomfortable position, and there you have to stay in case the Elegant flies down to the net. Nine times out of ten he just sits on the tree and ultimately flies off without taking any interest in your call-bird.

Two single birds will sit on trees 20 feet apart, but will remain single birds—they don't seem to care for company.

It is interesting to watch them flying home at night—flying high until over the Ti-Tree of their island, then falling or diving as if shot, from 300 feet, down into their thick branches. The growth of trees and rushes is so thick at this island that one cannot penetrate it from the river: one has to land on the island somewhere else, and then one cannot penetrate the growth to the river, so the Elegant is safe from molestation.

They lay from four to six eggs in a clutch—generally in the native state we saw four young to each pair of parent birds. They are quite attentive parents, and ready breeders in captivity.

They can die, as most Parrots seem to be able to do, from no apparent cause and when in good condition. They are subject to eye disease like most *Neophema*, but stand the cold fairly well—mine always winter out. They will breed in community, but do better in single pairs to an aviary.

They are not destructive to bushes, so their aviaries can be made more attractive than those of most Parrots.

We do not often see them in the bird-dealers' shops because they are so difficult to trap. They attain full colour in Australia with the first moult, that period varying according to the kind of summer we may have. I have caught them moulting badly as early as March, and have let them go again.

When fully coloured I consider them among the most attractive of Parrots. I may be prejudiced, but I suppose it is natural, as I have spent so many pleasant week-ends in five years studying them and trying to trap a few.

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## SOME AVICULTURAL NOTES

By W. H. ST. QUINTIN

*(Continued from page 138)<sup>1</sup>*

It sometimes seemed that the hen Brush Turkey miscalculated the period when the heap would be ready for the eggs, and that the fermentation was past before the eggs had time to hatch. Probably, if there had been several hens, some eggs would have been forthcoming when the fermentation process was at the right point. But I only had one hen, and at the end of the summer I more than once on opening the mound found eggs unhatched with chicks in various stages of development. Though they had a good big run, the birds were partly dependent for materials on what we gave them, which, of course, had to be in such a condition that it would ferment. Entirely dry stuff, such as straw or dead leaves, were of no use. Lawn mowings were eagerly appropriated, but if too much was given the heap heated too fiercely, and did not last warm for the whole incubation period.

The whole process has been watched, and described both in our Zoological Gardens, and at the Gardens at Melbourne. I will not repeat what has been already recorded, beyond saying that my birds were so tame that I could stand within a yard of the male when he was doing sentry on his heap, and could watch him digging down to the close neighbourhood of the eggs without disturbing him. He always opened the heap almost to the level of the eggs towards the end of the summer afternoon, filling up the opening, and smoothing all over before sunset. This was probably to cool the eggs.

There is one observation I was able to make, which I think has not been noticed. I several times, in the morning, found that the cock bird had cut away the side of the mound, leaving a perpendicular wall. I believe this was to make the exit of the chick more easy; and it may have been that the bird heard the cry of the chick, and did his best to help. We found several chicks at different times which had failed to get out owing to the heap getting too much consolidated. The male was, during the breeding season, always upon or close to the

<sup>1</sup> This is a continuation of the Presidential Address to the Yorkshire Naturalists' Union delivered in 1909. It is published by permission of the Author and the Editor of *The Naturalist*.—Ed.

mound, and constantly altering its appearance, and I was never actually able to connect the cutting away of the side with the emergence of a chick, but I was convinced that this was the bird's purpose.

The young can fly at least four or five feet up to a perch the day they are hatched, and, of course, are perfectly independent of the parents.

The first young bird hatched at Scampston was found in the next enclosure but one to that in which the mound was; having somehow managed to get under, over, or through two wire fences eight feet high; and it was discovered by the noise it made in vigorously scratching amongst the dead leaves under some bushes.

I found the male bird very dangerous to other species. Besides hunting his mate whenever he saw her, he was the bully of my collection, and, being very active, it was difficult to keep him in his own domain. I once saved an old Capercaillie cock from at least very severe punishment. The Caper was on the run, with the Brush Turkey after him, hitting him with his foot whenever he got within striking distance. My Brush Turkeys are now in Sir Edmund Loder's beautiful park at Leonardslea in Sussex, and, interesting as they were, I have never regretted their departure!

**SANDGROUSE.** These are peaceable, rather sluggish birds, not difficult to keep in confinement if kept absolutely dry. They are not as often kept as they deserve. I have had five species, the fine *Arenarius*, *Alchatus* (both the Spanish and the Asiatic form), *Exustus*, and *Bicinctus*, both of which last I have found delicate; and *Senegallus*, which in plumage is near *Arenarius*, and which with me is quite hardy in a dry aviary. Sandgrouse should be kept on a dry, sandy floor, with plenty of sharp grit, lime in the shape of old mortar, and some rocksalt. Several species are great eaters of grass, lettuce, and such common weeds as Shepherd's Purse; but *Bicinctus* and *Exustus* with me will look at nothing but small seeds.

And perhaps here I may suggest to the aviculturist the more free use of maw seed, which, of course, is the seed of the various poppies. The drug opium is, I believe, obtained by crushing the seed-capsule, and the seed itself appears to have no injurious qualities. All Sandgrouse and Quails are extremely fond of it, and my Bearded Tits mainly live upon it.

The Sandgrouse are usually placed near the pigeons, but they frequently lay three eggs, and the young feed themselves and wander from the nest-scratch almost immediately. The young can be reared upon maw seed, grass and clover seed, and the ripening seeds of chickweed, and shepherd's purse.

There is a very peculiar habit of at least some of the Sandgrouse, viz. the manner in which the young while unfledged receive water from the male parent. My friend, Mr. Meade-Waldo, was the first to record this interesting habit, having bred *Pterocles alchatus* in his aviaries in Hampshire, and sent an account to the AVICULTURAL MAGAZINE.

Mr. Waldo described how the cock bird (only) when it is aware that the young are thirsty, becomes very restless, and runs up and down the aviary, till presently it steps into the water pan, crouches down with breast plumage distended, and might be thought to be going to have a good wash. But it is not so, for when the soft feathers are well soaked, it leaves the water, and runs towards the young, uttering a cry which is quite unlike any of its usual notes. The nestlings understand, and hurry up, and bury their heads in the soaked plumage, and can be seen taking the wet feathers between their bills and evidently accepting this rather scanty supply with the same quivering of the wings that one sees in a young pigeon when being fed by the parent.

It is, of course, true that the Sandgrouse breed in very arid districts, with no opportunities of finding water, except in the form of dew, which must soon disperse when the sun is up. At the same time the food of the chick, if we may argue from what we see in our aviaries, is not any form of insect life, or of succulent vegetation, but dry seeds mainly: and therefore it seems that this habit has been evolved of the male parent going off to seek water, often probably at such distances that it seems strange that any fluid worth having remains after a flight through the desert air. What Mr. Waldo recorded of *Pterocles alchatus* I repeatedly witnessed, for we also got it to breed at Scampston. I had told my man what to expect, but nevertheless so remarkable is the performance that the first morning when I went down to the aviary, knowing that the eggs were due to hatch, I found him standing

in speechless astonishment, the old bird having just run out to the newly filled water pan to soak itself at his feet.

After this I bred *Exustus*, which has exactly the same habit. *Bicinctus* has not laid with me, while a pair of *Senegallus*, though laying frequently, are confirmed egg-eaters.

Both Mr. Waldo and I have had eggs from *Arenarius*, but no further success, but he has told me that he has seen males enter the villages in Morocco to soak in the puddles left round the wells, and then fly off.

All four species that have nested with me have the same way of dividing the duties of incubation, the females, with their plumage harmonizing so wonderfully with sand and gravel, sitting by day; the male, which is often more bright-coloured, going on to the eggs for the night.

In speaking of the TRAGOPANS, three species of which I have kept and bred, the Satyr, Temmincks, and Cabots, I can give another example of a habit noted by the aviculturist which could hardly have been observed in a wild state, especially when the subject inhabits such wild difficult ground, and has such skulking ways, as the Tragopans. At any rate, it was not known until I recorded it from experience with my birds, that the Tragopans habitually nest in trees. Although, like all gamebirds, they will occasionally drop eggs on the ground in confinement, my birds have never attempted to incubate unless the latter were placed on a nest or platform off the ground.

Sometimes they have made use of rough platforms of twigs which we have put up for them in yew or spruce trees, sometimes they have appropriated old pigeon's nests. Once a Temminck Tragopan hen laid her eggs in a Stockdove's nest in some ivy, seventeen feet from the ground. How she found the nest I could not imagine. She could only reach it by climbing up a yew tree, and passing along a horizontal branch, from which she could spring into the ivy.

In all these cases the bird made some addition to the platform or nest, as a finishing touch generally placing a few green twigs of yew or spruce by way of lining.

Perhaps from finding plenty of sites ready to hand, it was not till this season that a Tragopan ever built a nest entirely of itself. In this

case a rather untidy pigeon-like nest was made in a spruce-tree some five feet from the ground, constructed of live, and dead, small branches and twigs of the spruce; and though it looked a shaky structure, it bore the weight of sitting bird and eggs. I must have had at least thirty clutches of eggs since I have kept Tragopans, laid in all cases off the ground; and so I think I may safely draw the conclusion that this is the natural habit.

In this unusual nesting propensity the Tragopan shows itself very distinct from its nearest allies, the Grouse and Pheasants. Moreover, the nestling is clothed with a peculiar hairy down, and can fly several feet, and even from branch to branch, when newly hatched. In fact the bird is strikingly arboreal in its ways.

The ROLLER. Though very handsome, I don't recommend the European Roller as an aviary bird to anyone who is not prepared to take a great deal of trouble. The bird is extremely nervous and shy, and unless great care is used, will certainly spoil its plumage against the wires of the aviary. It is quite impossible to keep either an Oriole or a Roller in a cage, for the same reason. Both are shy, and both are short-legged, and when clinging to the side of a cage will not keep their bodies off the wires like a Crow or a Thrush, but seem to find a perverse delight in thrusting tail and flights through, till nothing but stumps remain.

Rollers are so nervous that I have known one suffer real hunger and decline to come down to the foodpan, because a brush had been accidentally left inside the door.

With regard to food, a Roller lives much like a Shrike, and therefore must have a Shrike's food: mice, beetles, meal-worms, and, when meat is given, it must have at the same time what a falconer calls "casting", namely feathers or fur, which it will presently eject as a pellet.

Therefore, to get Rollers to breed, which was at one time my ambition, I had first to get hold of two sound birds, which was not easy; then get them well moulted, and thoroughly used to the aviary; and finally only one person ever went into the covered part of the aviary, in which we fixed up a large hollow log. Without going into details now, which I have elsewhere recorded, I will only say that in due course

the birds paired and took to the log, eggs were laid, and finally, to my great satisfaction, young birds were heard clamouring for food. And here a failure nearly occurred with the young, and a tragedy between the parents could not be prevented. Whether we showed too much interest in the event or not, suddenly the hen bird was seized with a blind fit of jealousy against her mate, who was peaceable enough, poor fellow, and only too anxious to do his duty by his family. But the excited virago forgot her nestlings, and thought of nothing but of buffeting and fighting with her mate, who never offered any resistance. The young were in danger, so I removed the cock, and the mother instantly went back to her duties. But it was the end of the beautiful male. In another aviary he passed the greater part of two days ceaselessly flying from perch to perch with food in his beak, calling to the young which were not there, and then taking no food himself, pined and died.

**PINE-GROSBEAK.** Of all the smaller hardy birds that one can keep in a garden aviary, I think there is none more desirable than the Pine-Grosbeak. It is utterly impervious to the worst weather as one would expect, and is from the first extremely tame. Although, of course, it is always best, if one can, to keep one breeding pair apart from others of the same species, I have never known the Pine-Grosbeak interfere with any other kind of bird, even of the smallest. Another merit is that the cocks, so far as my experience goes, retain their bright colour, while, as is well known, males of Crossbills, Linnets, and Redpoles are apt to lose it at the first moult, and do not regain it. Mr. Hugh Wormald, however, says that since he has fed his Redpolls on the seeds of the reed, they have kept their colour. It probably is a question of health produced by correct food, with fresh air and space for exercise. I have more than once bred the Pine-Grosbeak, though it had not been previously done in this country. They made a substantial and neat nest of dry spruce twigs, and lined it mostly with dead grass, and a little moss.

The tameness of the brooding hen was very remarkable. Of course, we have all noticed how bold the sitting Bullfinch, a very near ally of the Pine-Grosbeak, often is. When the nestlings were hatched, the female parent very sensibly availed herself to the full extent of any

assistance that we could offer by way of food for the young. I have stood within a yard of the nest, and seen my bird-keeper offer fresh ants' eggs in a teaspoon to the old bird as she sat, which she took, and after holding them in her mouth for a minute or two, probably to moisten them, pass them on to the nestlings.

Sooner or later every aviculturist is likely to have it brought home to him how very highly strung and nervous birds often are by nature; and it leads to many grievous disappointments. In 1903 I was the first to get the WAXWING to lay its eggs in confinement. Much interest has always attached to the breeding habits of this charming bird, and much mystery. Until the discovery of its nesting grounds in the forests of Lapland, the egg was unknown to ornithologists.

Mr. Wolley's exhibition of the first nest and eggs, the fruits of several arduous expeditions in the Far North, caused great excitement in scientific circles. Attempts had been made by keeping a flock in an aviary to get an egg or two dropped, but with no success.

Last winter I brought an egg, the first ever laid except in the wild state, and showed it at one of the Yorkshire Naturalists' Union meetings at Leeds.

In 1903, though eggs were hatched at Scampston, the young were not reared, and the only point gained was that the period of incubation, fourteen days, was ascertained.

I had every hope of doing better the following season, as I had the same pair of birds, and apparently in splendid health. The Waxwing is rather sluggish, and one would think not very sensitive or emotional. However, the hen died unaccountably, perhaps from egg-binding, for there was no examination; and the first sign that anything was wrong was that her body was found on the floor of the aviary, and the cock bird sitting huddled up close by it, and he died in a few hours. If this was not death from a broken heart it was at least very near it!

This summer I had a still greater disappointment. A pair of Waxwings nested, and began to sit on the 22nd June, and a fortnight later the eggs were chipping. The interesting event greatly excited the hen bird, and in the end she positively died in a sort of fit; while a few hours afterwards the male also succumbed to an effusion of blood upon the brain. I think we had perhaps got the birds in too high

condition. They are, as I have said, sluggish birds with great appetites. Being largely eaters of flying insects in a wild state, they get plenty of exercise chasing their food. In an aviary, life is made too easy for them, and they become apoplectic. I hope to guard against this another year. But we had to deal with the eggs which were chipping and nearly cold. There was luckily in another aviary a Snow-bunting just due to hatch, so the Waxwing's eggs were put under her. Only one hatched, the others having got hopelessly chilled. The Snow-buntings reared their foster-child for a week; when perhaps because another pair of Snow-buntings were nesting too near, and owing to the resulting quarrels, the nestling Waxwing seemed to be getting neglected, and to be growing weaker. My man conceived the idea of taking it and putting it into a Blackbird's nest, lined, and covered with a flap of cotton-wool. Here it was fed at very frequent intervals on flies, fresh ants' eggs, gentles, and small silk-worms, for three days. There seemed a good chance of rearing it, but one morning it was found dead for no obvious reason; but being a solitary bird, it may not have been kept warm enough; on the other hand I do not feel certain that it was not stifled by the wool. This was its eleventh day, and so far this is the greatest age to which a young Waxwing hatched in captivity has attained, though Mr. Reginald Phillipps, who has been wonderfully successful in keeping and breeding delicate and difficult birds, had a brood in his garden aviary in West Kensington this summer, which lived a week, and only succumbed apparently to a spell of very wet weather.

I should think it likely that the young Waxwing development is slow, for my nestling's eyes were only partly opened on the eleventh day.

The gape was of a brilliant crimson-violet, which vanished speedily after death, and had almost disappeared when the bird had reached the Natural History Museum (in spirit). It was curious to note that though the primaries were only just beginning to shoot, the scarlet wax tips of the secondaries could be distinctly seen through their transparent sheaths.

**SNOWY OWLS.** I have a splendid pair of these birds, brought from Norway by a friend in July, 1891. That was a "Lemming" year,

when the hordes of the little rodents were over-running the district, attended as usual by numbers of beasts and birds of prey, the beasts including wolves, and the birds including Goshawks, Rough-legged and Common Buzzards, and Snowy Owls.<sup>1</sup>

A Lapp had brought the young birds many miles, in a rough basket, and they were in a sorry plight. He had a bag hanging on his back, and as he turned away, my friend saw it move, and asked what was inside. It was the poor male bird, which had been daring enough to dash at the Lapp's chest when he was taking the young, and got its claws entangled in the latter's clothing, and was grabbed before he could clear himself. There was also the body of the female owl, which had been bored through with a spherical bullet, from an elk rifle, fired at very close quarters, as she sat snapping her beak while her nest was being robbed. They were being taken further down the valley, to an official, so that the head-mopey offered for beasts and birds of prey might be claimed. My friend secured both for a price slightly above the official reward, and cleverly brought the old bird, who was half-stifled, but not otherwise seriously hurt, back to complete health, and he came over to England with the nestlings.

My birds have gone to nest many times. They are late breeders, and if July is a warm month, the young are seldom reared. This season the owlets were suited well enough by the cool moist weather, and there were two a fortnight old, which seemed doing well. Suddenly the old female turned on them, and not only killed, but ate them both. They are always kept as quiet as possible when breeding, and I cannot account for it.

As regards the plumage, these birds differ greatly. Some individuals are much more spotted than others. As a rule the males, which in the plumage of the first year are heavily spotted, though the markings are always smaller and paler than in the case of the females of the same

<sup>1</sup> Two years later I was fishing in the same valley. A few wolves remained. They had practically destroyed the small flock of a farmer near where I stayed, a few days before I got there. But the Snowy Owls had retired to the higher mountains, and there was no more than the usual number of the other Raptores breeding in the neighbourhood that season. But I was shown places where quantities of Lemming skeletons and skins remained, notably a cutting on the Stockholm and Trondhjem Railway, where the little animals tumbled over a rock some forty feet high on to the line, and had smothered each other in a water gully.

age, become more and more white each moult until about four years old, and then remain without further change.

My old male bird<sup>1</sup> has this autumn in the moult altered his appearance a good deal. Since his fourth year, he had been pure white, except for a few black spots on the tertiaries on both sides. This time he has put down many spotted feathers on the wing coverts, so that the character of his plumage is changed from what it had been for fourteen or fifteen years.

(To be concluded.)

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## CORRESPONDENCE

### THE MALACHITE SUNBIRD

SIR,—It was in the year 1913 that I saw the Malachite Sunbird for the first time, the owner being our President, Mr. Ezra. As I stood in front of its exhibition cage, I made a vow that if ever I had the chance I would have one of these wonderful creatures. It was not, however, until 1926 that the chance came my way. A friend of mine wrote saying he had a small consignment of African birds privately imported and among them was a young cock Malachite. The price was a stiff one but I did not hesitate, and I have never regretted buying it. I fed him at first on the usual mixture of condensed milk, honey and Mellin's food, but this did not suit him and I nearly lost him. I then tried a mixture of Horlick's malted milk and sugar in equal parts, and he has never looked back and has remained in perfect health ever since. The Malachite is one of the largest of the Sunbirds and is a wonderful metallic green, with yellow tufts of feathers on the flanks. The tail is much elongated by two long feathers. When I first saw my bird in full colour I made another vow that I would never part with him. When I was about to leave my native town to take up my present position I received many tempting offers from well-known

<sup>1</sup> Not the old male caught by the Lapp, but one of the young birds brought over in 1891 by H. S. B. He died of tubercle, 27th December, 1915. His mate died in 1900. They reared young several times. They were both wild-bred birds of 1891.

exhibitors. He has had a wonderful record, winning over 50 firsts, and was twice first at the Crystal Palace. But I have refused all offers for him, and he now graces the bird house at Keswick Hall, where I hope he will live in retirement and there end his days.

A. MARTIN.

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#### HYBRID JUNGLE FOWL

SIR,—In a conversation I recently had with Mr. W. K. Dods, Vice-President of the Calcutta Zoo, he told me that a cock Grey Jungle Fowl (*Gallus sonnerati*) had bred there with a hen of the Green species (*G. varius*), and that two cockerels had been reared which much resemble the Green cock but have a small gold spot on each of the neck-feathers; their breasts are black.

F. FINN.

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#### RARE DUCKS IN ST. JAMES'S PARK, ETC.

SIR,—On visiting St. James's Park on two occasions during the Easter holidays I saw no Mandarins, not even any pinioned birds, though I went at the best time for seeing them, near nightfall. I did, however, see specimens of two Ducks rare in aviculture—one specimen of the Black-billed Tree-Duck (*Dendrocygna arborea*), which has been exhibited at the Zoo, and three of the Eastern Spot-bill (Chinese Grey Duck, or Yellow-nib (*Anas zonorhyncha*), apparently a drake and two ducks. I have never seen this alive before. Apropos of rare St. James's Park Ducks, I may mention that the old male Grey-headed Sheldrake and his male offspring all have black eyes, though the correct eye-colour for the male of this species is yellow.

In Mr. Prestwich's very full and interesting report on the foreign birds at the Palace Show, mention is made of Grey Touracous and of a Spur-winged Plover. As these names apply to several species in each case, I should like to say that the Plover was the Cayenne Lapwing or Tern-tero, and the Touracous were of the Bare-faced species (*Gymnoschizorhis*) shown last year. The Grey Touracou *par excellence* (*Schizorhis corcolor*) has never been shown, so far as I know, though

the Zoo has had it. It is the only Touraou that is *all* grey, and, so far as I can recall, the only bird of a complete neutral grey, with no tinge of brown or blue, all over.

F. FINN.

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#### BREEDING FYTCH'S BAMBOO PARTRIDGE IN CAPTIVITY

SIR,—After six months' residence in my aviary a pair of *Bambusicola fytchii* made a nest of trampled foliage five feet from the ground against a wall which had tree boughs suspended to it, and on this platform nest three eggs were laid of a dark creamy colour and on the 12th December last three young ones appeared. Unfortunately a very heavy rainstorm swamped the nest, the young ones were disturbed and fell to the ground in an effort to hide themselves, whilst the mother bird "clucked" excitedly in the vicinity. Next day two of the young had disappeared. The third one was cold and wet. I made an effort to recover it by warming it in a stove, and when it could run about I returned it to the mother, but it died the following day. Am I right in the belief that this is the first record of chicks of this species being hatched?

CLIFFORD COLES.

SYDNEY, N.S.W.

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#### A CRANE IN HUNTINGDONSHIRE

SIR,—About the middle of April, 1931, a Crane appeared on the Bedford River Washes above St. Ives in Huntingdonshire. This bird, by its behaviour, appeared to be quite wild, but as it is still there at the time of writing (mid-May), it may have escaped from some collection in this area.

Would any of your readers who have lost such a bird please be good enough to communicate with me, as I am anxious to discover whether or not this is a genuinely wild one.

T. H. HARRISON.

PENBROKE COLLEGE,  
CAMBRIDGE.

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## LIBERATED WEAVERS

SIR,—As an alternative to training Weavers to use a feeding-box whose contents Sparrows will not easily discover, Mr. Webb might try training the Weavers, before release, to feed from a vessel underneath a wire-netting trap-feeding tray. The upper part is shaped rather like a dish-cover, and is propped up in front with a piece of wood about 3 inches high. When the prop is dislodged by a pull on the string attached to it, the birds underneath are imprisoned, and can be removed by hand through a small door in the top of the dish-cover arrangement. In this way, using a pair of field-glasses, it is possible to keep down the Sparrows when they only happen to be feeding on the tray. If a Weaver is accidentally overlooked it is best to release the whole lot of birds immediately, and not try to take out the Sparrows first. One end of the line attached to the prop must be carried behind a hide or screen, from which an observer can watch the feeding birds. Since string shrinks in wet weather, and will pull the trap shut, it is well to have a light weight of half a pound attached to the hide end of the line, and leave it free with plenty of spare length. The weight keeps the line from sagging unduly, but does not pull hard enough to dislodge the prop when not desired.

In some gardens Weavers at liberty will leave in early summer and return in August and September. Feeding should, therefore, be continued even if the birds appear to have left.

TAVISTOCK.

## THE INDEX

SIR,—It was with very great delight that when I received my May AVICULTURAL MAGAZINE, I read the good news that at last we were to have an "Index". Captain Reeves' and my advocacy of this scheme has, therefore, not fallen on barren ground. We aviculturalists cannot thank our friend, Dr. Hopkinson, too much for his most generous offer to compile an index. I for one am glad that we are not to have what is called a *complete* index giving the name of every bird, say, in a description of one of our member's aviaries. If this plan had been

carried out, it would simply mean that the Index would defeat its own object. By giving a reference to every bird, one would have to turn up endless pages to find only a reference to the name, whereas now I take it that a reference will refer to, say, feeding, nesting, cure of disease, and any other notes on housing, winter and summer treatment, etc. Then there are many articles on the layout of aviaries, planting of same, and various little gadgets useful to aviculturalists.

In conclusion, let us hope that the Index will be well supported, and that every member will buy a copy, and by so doing, we would pay Dr. Hopkinson the greatest compliment possible for the immense trouble he is going to on our behalf.

W. H. WORKMAN.

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### AVICULTURE, VOLS. II AND III

The first volume of AVICULTURE was published in 1925 and dealt with the PASSERIES, the various chapters having first appeared in the pages of the AVICULTURAL MAGAZINE. The concluding portion of the work, which is profusely illustrated with coloured and uncoloured plates, deals with the remaining groups of such birds as are suited to aviculture. It is divided into two volumes which will probably be ready by the time this is in print, and can be obtained from our publishers, Messrs. Stephen Austin & Sons, of Hertford.

The work, which will be found to be of great practical value to aviculturists, must not be confused with an American journal with the same title, which first appeared after the publication of Volume I.

The edition is limited to 300 copies, so it is advisable to order early.

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J. E. S. & D. Co., London, 1872.

*Aru Island Parrot.*  
*Geoffroyus aruensis.*

*From a living specimen presented to the Zoological Society by A. St Alban Smith.*

THE  
AVICULTURAL MAGAZINE

THE JOURNAL OF THE  
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JULY, 1931.

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THE ARU ISLAND PARROT  
(*GEOFFROYUS ARUENSIS*)

There are some twenty species or subspecies of the genus *Geoffroyus* inhabiting New Guinea and the islands in its vicinity, but only some two or three have been imported. Mr. St. Alban Smith has recently sent to the Zoological Society two examples of *G. aruensis*, one of which lived for several months and attained the full plumage of the male; the other succumbed within a month of its arrival.

There is no doubt that *Geoffroyus* is a very delicate genus of Parrots, and although when in full plumage the males are decidedly beautiful, with very delicate colouring, they have otherwise very few attractive qualities. One of the Zoo birds was very tame, but certainly not friendly. The food presents no difficulty, consisting of grain and fruit, but probably the question of temperature is the difficult one with these Parrots.

Our illustration shows the male, the female differing in having the head brown.

D. S-S.

## SOME AVICULTURAL NOTES

By W. H. ST. QUINTIN, J.P., F.Z.S.

*(Concluded from page 176)*<sup>1</sup>

My RAVENS are regular breeders, and, of course, very early in their nesting operations. They would sometimes build, if they had the materials, before January was out, but I think it early enough to supply them with their sticks about the middle of February. A large basket is then fixed up in a corner of the aviary, and a barrow load of larch and birch branches is thrown in, also pieces of turf and wool. Moss used to be given, but it was never used. The birds work so energetically that in a week's time the nest is ready for eggs. The period of incubation is twenty-one days, and the young do not leave the nest till five weeks old.

Last year five fine young were successfully reared, and duly distributed amongst my friends. This was rather a severe tax upon not only the parents, but also upon those who had to procure and prepare the food for such a family; and no one was sorry when this spring's brood was found to consist of but two, probably owing to the first-laid eggs having been frozen.

As an old falconer, I ought to have known better than to feed as I did the first brood, some five years ago, with too light food. The keepers were killing down rabbits at the time, and small ones were brought in and freely given to the Ravens. They were, of course, quite fresh, and there was an ample supply, but the young Ravens developed "ricketts". When the time came for them to leave the nest, not only were their beaks crooked, but their wings and legs were bent and bowed. It was nothing but want of sufficiently nourishing diet.<sup>2</sup> Since that lesson, I have always seen that the Ravens had a regular supply of rough butcher's meat, as well as other lighter food,

<sup>1</sup> This is the concluding portion of the Presidential Address to the Yorkshire Naturalists' Union delivered in 1909. It is republished here by permission of the Author and the Editor of *The Naturalist*.—Ed.

<sup>2</sup> A Peregrine or Goshawk, if fed on rabbit, or even on blue-hare, is quite unfit for hard work; and though as a change of food for a Hawk not in training, rabbit flesh is allowable, it must not be given except as a change occasionally, once or twice a week at most.

and with the best results. Ravens are, of course, absolutely omnivorous, and nothing edible comes amiss. Even hempseed is readily picked up.

The bark is easily heard on a still day quite two miles away. It is strange to hear the male, who is possessed of greater vocal accomplishments than his mate, after a series of coarse reverberating notes, drop his voice and exactly imitate the crooning of the Jackdaws in the hollow elm tree over his head.

The last bird I shall refer to is the SECRETARY BIRD, of which I have two very fine examples, which I am hoping will turn out to be a pair.

The Secretary Bird, besides a kind of "roar", has some rather eagle-like notes, and his beak is that of a bird of prey, but otherwise he seldom betrays his relation to the Raptores, and many of his ways are peculiar to himself.

My birds came from Potchefstroom, in the Transvaal, and were brought as nestlings to my friend, Major Horsbrugh, in a pillow-case on the back of a burgher, who had ridden on his bicycle forty odd miles with this burden. They have enormous appetites, and I fear gave much trouble before they were old enough to send off to England. They take an immense amount of exercise, and delight in racing about in a good big enclosure, which they share with some Cranes, and the Great Bustards. Their movements often remind one of the aeroplane. The neck is outstretched, the wings wide spread, and held without flapping at such an angle that after the bird has run across the field (his paddling feet representing the motor), he is sometimes lifted off the ground. I ought to say this used to be the case, for to my regret I found it necessary to pinion the birds, and now they are not evenly balanced as before.

They are fed twice a day, and stuff down an extraordinary amount of food with fur, feather, and bone. Luckily they are not particular, and all rats, moles, and even stoats and weasels are reserved for them. But a hen's egg is their special dainty, and in eating them they have shown a good deal of intelligence. They have no intention of breaking the shell and losing any of the contents. On the contrary, the egg is to be swallowed whole, and reliance is placed on the gastric juices to dissolve the shell. They used to find it difficult to pick up the egg

when in a standing position, without cracking it, but now they flex their long legs, lay the lower mandible flat on the ground, and shovel up the egg. That the egg is swallowed whole is certain, for I have known one of them dispose of three eggs one after the other, and when pursued by the other bird, deliver them up on the grass still unbroken.

I have never offered my birds a snake, but an eel is treated with much caution as if it might be dangerous, and receives many unnecessary blows long after all motion has ceased, before it is swallowed. The blows with the foot are given with great rapidity, and a rat released from a trap has no chance, and is rolled over very neatly, getting a disabling blow, generally on the head, in spite of his activity. Though their inclination is to swallow their prey whole, if given too large a piece, of rabbit for instance, they will hold it under their feet, and tear off pieces, cleverly enough, like an ordinary bird of prey.

The birds are quick-tempered, and are best kept in separate compartments when in a shed. Sometimes if they have a difference, one will give the other a resounding thump with its foot; and I have known an inquisitive Stanley Crane thrown back a yard or more by an unexpected blow on the chest.

In summer it is pretty to watch them striding about their paddock examining the grass, and stooping down to pick up a sleepy fly or beetle, or standing watchfully over a tuft as if they had heard a mouse stir.

Major Horsbrugh tells me that he has seen a wild Secretary Bird extend a wing and gently touch a bush, and like a flash strike at a lizard or locust which might be disturbed and try to escape. Any low-flying butterfly, such as a meadow-brown, is soon knocked down and eaten by my birds, and I have seen one pursue even a common blue across the enclosure, striking at it whenever he got a chance, but, as far as I have seen, without success. But evidently insects form a large portion of their natural food, and I should think they must destroy a great amount of locusts.

Their way of resting is unusual, and very unlike that of other members of their order. They lie down with wings pressed close to the side, and when walked into their sheds for the night, lie down almost at once.

In the summer, when left out altogether, they creep under the

spreading branches of some young spruce fir, and so roost. My specimens are of the South African species, with brilliant orange yellow cere. The form found in the equatorial regions have the same parts rose pink in colour. I notice that when my birds are greatly excited, a suffusion of pink creeps over the yellow cere, in fact the bird blushes!

I should like here to acknowledge my indebtedness to my bird-keeper, Arthur Moody, to whose skill and care much of such success as I have achieved is due: as well as many important observations, and notes taken when I have been from home.

In conclusion, it is pleasant to think that ornithology has now become something more than a science, it is a popular study. Not only is there a desire on the part of the public, no less eager than before, for information on structure and classification, which can only be properly worked out in the museum and laboratory; but in addition there is a thirst for knowledge, as full as may be, of how birds live, and what their ways are, how they feed, and display their plumage, make their nests, and tend their young.

The wonderful supply of beautiful photographs which exhibit the life-history of birds is a proof of this demand. I have for a large portion of my life found much interest in studying this aspect of the delightful science of ornithology; and it is a great addition to one's pleasure if one can impart some of that interest to others.

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## MY BLUEBIRDS

By H. L. SICH

A few years ago I received a pair of Bluebirds (*Sialia sialis*) from France by air, as the only way that there seemed to be of getting them over alive. Of course I was very anxious to breed from them, and from one of the accounts of them which I read, I gathered that they were rather fastidious about their nesting site, so I did not trouble to move an old cardboard travelling-box from the wall of their shelter; I was alarmed to find them nesting in it at the end of March, as soon as the thaw set in, after one of the coldest winters we have had this

century ; when six young hatched early in April, there was only mealworms to feed them on ; they lived for about a week when even these ran out and they starved.

Two young left the next nest, but one had injured its brain and twisted its head round until it fell upon its back. I have had some Quail affected in the same way after damaging their heads. This bird I killed, then the parents refused to feed the other one. The hen laid and incubated again that year and three times the next summer, but they always threw out the eggs as soon as they began to chip ; then they started to kill their companions, among them was a Hooded Siskin  $\times$  Canary Cock and a whole brood of hybrids between a Chestnut-breasted Finch and a Yellow-rumped Mannikin ; being tired of such behaviour, I went to put them in a smaller flight by themselves, unfortunately killing the hen in the process. Last Autumn I got another pair ; they have now four young, two look almost ready to leave the nest, the others seem rather more backward as far as one is able to see. The parents will not feed them on gentles or live ants' eggs but have been brought up on boiled mealworms so far.

Mr. Bartlett, the late superintendent of the Zoological Society, said that he tried to rear young Dippers from the nest and always failed with everything he tried, including shrimps and salmon spawn, until one of the keepers suggested scalding the mealworms, and then he was quite successful.

A few days ago, I turned into a flight opposite to the Bluebirds, but separated by a 6 ft. wide passage, a pair of Blue Grosbeaks ; this was too much for them seeing two birds coloured much like themselves, they quite forgot their young and flew onto the wire netting, scalding the Grosbeaks, which took not the slightest notice of them ; as they were still at it after two hours, there was nothing to be done except catch up the unfortunate Grosbeaks and put them in a much smaller flight out of sight and loose all chance of their nesting this year.<sup>1</sup>

<sup>1</sup> Two young Bluebirds left the nest on 4th June. They are still being fed by their parents but a third and younger bird was found dead.—H. L. S.

## FULL-WINGED MANDARIN DUCKS

By D. SETH-SMITH

The Mandarin Duck is now established as a semi-wild breeding species in certain parts of this country, such as at Woburn in Bedfordshire and Falldon in Northumberland, and it seems to remain and increase in districts in which the conditions are favourable. It is perhaps the most ornamental of all of the duck tribe (though the Carolina runs it very close) and it had always been an ambition of mine to see it established as a resident breeding species in the London district where, one would have thought, the various parks and open spaces would have suited its requirements.

Thanks to the generosity of Messrs. Alfred Ezra, and J. Spedan Lewis, and the co-operation of Mr. Alex Hampe of Shanghai, we were able to arrange for the importation of a fairly large consignment of these birds from China last year, as reported in this Journal. Some forty pairs were received in the early part of the year. These were not pinioned, but one wing of each bird was clipped, with the idea that they would be incapable of flight until after the next moult, by which time, it was hoped, they would have become thoroughly accustomed to their new home and surroundings, and would stay in the neighbourhood and perhaps nest in the special boxes and barrels that were provided for their use. Six pairs went to Foxwarren Park, four pairs to the Zoo, and the remainder were handed over to H.M. Office of Works and taken charge of by Mr. Hinton, the capable keeper of the Waterfowl at St. James's Park. Here they were marked with aluminium rings, bearing an impression of a crown and the initials "G.R.", and then placed on the waters of St. James's Park, Hyde Park, Greenwich Park, Regent's Park, Hampton Court, and Buckingham Palace.

The moult commenced about the end of June, and by the autumn many of them were on the wing and it was interesting to watch their flights. Those on the Regent's Park water appeared to join those in the Zoo, and every evening at dusk one could see parties of from a dozen to eighteen flying round, their call-notes as they flew being quite different to those of the Mallard

and Teal, which also took flights at this time. At times the Three Island Pond in the Zoo seemed to be literally swarming with Mandarins and in December and January all the males seemed to be displaying at the same time. The barrels fixed in the trees at the Zoo were often visited by pairs, and a pair took up their abode for a time on one of the Hampstead Heath ponds. For a time it seemed that the experiment was well on its way to succeed, but as the season advanced the birds appear to have gone farther afield and their visits to the London ponds became fewer. Still we hoped that some at least would remain, and I am not sure that all have gone as full-winged birds are still occasionally seen about and a full-winged drake is certainly paired to a pinioned duck in the Zoo. But it seems an undoubted fact that they have spread much farther than we anticipated, if, indeed, some have not actually tried to fly back to China!

In the *Daily Telegraph*, of May 13th, 1931, appeared a statement that, according to a Reuter message from Budapest, two ducks were shot by a gamekeeper at a fishpond in the district of Zala, in Hungary, each of which bore a ring on its leg with the initials "G.R." The rings were eventually sent to England by the President of the Hungarian Ornithological Society and identified by Mr. Hinton as some which he himself had affixed, so there is unfortunately no doubt that these were some of our London Mandarin Ducks.

It may be that to establish a resident race of such birds one must, first of all, breed from pinioned specimens, allowing their progeny the full use of their wings. But, I think, if I had anything to do with another experiment of the kind I would pinion the drakes only, and allow the ducks to go free.

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## LAPWINGS

By W. H. WORKMAN

It has occurred to me that the rather strange story of how I came by, and still have, two perfect specimens of the Lapwing (*Vanellus vanellus*) might be of interest and use to readers of our Magazine. Some shooting friends promised to get me a Lapwing, should they

wing a bird, and one evening a basket came with a perfect specimen, except that it couldn't fly. There was no sign whatever of its having been shot and no mark of any wound anywhere. I turned it into a small aviary, but having no previous experience of getting waders on to aviary food, and not being able to find anything on this subject in my library, I thought the best thing to do was to try it with earth worms, so we dug a good supply and for several days it ate nothing but these put on the top of a coarse insectivorous food made up with scalded, crushed biscuit meal. It began to take a little of this food along with the worms and some bread and milk. Now the next step was to get it off worms, as worms are uncertain things, especially in frost when the garden gets as hard as rock, so what we did was to cut strips of bullock's heart to look like worms and very soon we had the satisfaction of seeing our Lapwings eating these greedily. I forgot to mention that the same friend got me a second Lapwing the following week unwounded and unable to fly, just the same as the first. We gradually stopped the earth worms, except as a treat when procurable, and substituted the crushed biscuit, well scalded with hot water, a little boiled rice and heart chopped into small pieces about  $\frac{1}{4}$  in. each way.

After keeping them in the small aviary for a few weeks we put them in the large waders' aviary, which is nearly forty feet square, and has a good pond with plenty of cover and grass for the waders to pick in. In a short time first one and then the other regained the power of flight. From this I take it that a pickle of half-spent shot must have struck the wing, temporarily stunning a nerve or muscle, which caused loss of flying power.

It is a lovely sight to see these large waders flying round the aviary, just tipping the roof with the points of their wings uttering their peculiar cry of peewit. They are in splendid form and look in the pink of condition.

Lapwings have several funny little habits which are noticeable in the close-up view one gets in an aviary. One of these is the peculiar way the bird can raise and depress its crest, not only in the fore and aft way, but also laterally at the same time dividing the crest into two separate points across the top of the head. One of the Lapwings

has a most peculiar habit of pumping its neck and head up and down after a short run, just as if it had swallowed a stone which it was trying to get either up or down. When I first noticed this shortly after arrival, I thought it had something to do with its having been shot at, but apparently it is only a habit of this species.

I am rather afraid that Lapwings are egg stealers, as I have found several eggs of the Cuban Tree Quails lying about broken and sucked. I am not quite certain whether they are to blame or perhaps the Black Rails, most Rails have rather a bad name for egg stealing.<sup>1</sup>

My Lapwings and other Waders have the following diet to choose from. A coarse insectivorous mixture made up with scalded biscuit meal and boiled rice varied with potatoes; then a dish of bread and milk, both made up fresh each morning. For grain I give a dish of crushed maize, a dish of Indian millet and a third dish made up of white millet and canary seed. For live food they get earthworms as often as possible, failing them in winter a few mealworms. From May on, they get gentles from a sheep's head, this latter gives a good supply for about a week, when we get a fresh head.

When I am reading in the dark evenings, I often hear their weird cry bringing back to me many happy days spent bird-watching and egg-collecting in the huge bogs which are such a well-known feature of Irish landscape.

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## THE PRESIDENT'S PARTY

By CAPT. H. S. STOKES

Whether we measure our happiness in terms of birds, or of human kindness, everyone of us who went to Foxwarren Park on Saturday, May 30, will agree that our cup of happiness was a full one. For the birds are legion, the sun shone for us, and the kindness and hospitality of our President and Mrs. Ezra are always unbounded.

This famous collection of birds and beasts has been described from time to time in these pages, but a few notes of current events will interest those members who were unable to go to the party.

<sup>1</sup> Black Rails are never to be trusted where there are eggs.—Ed.

The chief and most important additions to the aviaries are perhaps Parrakeets. There are a pair each of the rare and lovely Hooded (*Psephotus dissimilis*), Queen Alexandra's (*Spathopterus alexandrae*), Turquoise (*Neophema pulchella*), Bourkes (*N. bourkei*) and elegant Grass Parrakeets (*N. elegans*), all in lovely condition.

The famous Blue Alexandrine Parrakeet paired to a green hen again has a family of four. This is the third year they have bred, and it is therefore only a matter of time and patience for a blue strain to be produced. The young will be paired *inter se*, but at present are not showing the distinctive sex plumage. The Yellow Alexandrine hen also has young. One of two hen Derbyan Parrakeets, mated to a green cock Alexandrine, hatched a young one, but unfortunately it died. Malabar Parrakeets had just hatched. Superb Spreos have again bred, and one or two rare Starlings—Rothschild's Grackle and Salvadon's Starling—have laid and hatched, but the parents seem always to throw out their young. Mr. Ezra intends to try the experiment of letting them out into the garden when they have young, to forage for insects. This practice has been found very successful with some softbills, especially Shamas.

Pheasant-tailed Pigeons and Bronze-winged Doves breed continuously. The rare Renault's Ground Cuckoos lay and sit, but unfortunately their eggs prove infertile.

Returning to the birdroom we saw many old friends—Wallace's, Wilson's, the Lesser Superb, and the Six-plumed Birds of Paradise—Coco the Mynah and the tame Fruit Pigeon performed for us, and we saw a very tame and attractive Nuthatch from East Africa. The sunbirds in the drawing room were holding their third annual party.

Visiting the large enclosure after tea we fed the Wallabies. They are now very tame and have increased to nearly fifty. Nearly all the females were carrying young in the pouch. Chukor Partridges were everywhere. A Monaul Pheasant has four strong chicks. Bankiva and Sonnerat's Jungle Fowl have overflowed from the enclosure and colonized the woods round the garden.

On the large pool the pair of Black-necked Swans again have four fine young cygnets and Red-crested Pochards have also bred here. On the smaller pond where the Flamingoes are, twelve Cotton

Teal and five Pink-headed Ducks and a pair of the curious little White-backed Ducks (*Thalassorius leuconota*) are of special interest among an interesting crowd of waterfowl. Numerous ducklings from collected eggs were being reared here. Many pairs of full-winged Mandarin Ducks inhabit the barrels placed high up in the trees, and some pairs must have hatched their young. Two pairs of Brush Turkeys, new to the collection, have large mound nests.

The Manchurian Cranes are sitting in long grass, and last but not least, a pair of Stanley Cranes have a nest in the wood. They have become so fierce that we were not able to approach them.

This lovely species has not yet been bred in England, and it is greatly to be hoped that they will add another triumph to our President's list of well-won successes.

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### EVERETT'S SPIDER-HUNTER (*ARACHNOTHERA* *EVERETTI*) AND THE BOREAN GREY- BREASTED SPIDER-HUNTER (*ARACHNO-* *THERA MODESTA*)

By SYDNEY PORTER

Though I believe articles on the lives of better known birds are of more use to readers of the Magazine, I cannot resist from writing a short chapter on these two extremely rare but equally interesting and charming birds belonging to a genus little known in this country as cage or aviary birds, namely, the *Arachnothera* or Spider-hunters.

These strange-looking birds are but rarely imported alive in spite of their numerous attributes and are consequently almost unknown to any but the scientific ornithologist, who is only familiar with the dried skins of the birds.

One of these birds, an Indian species, was brought over to this country by the late Capt. Perreau just previous to the War. No others I believe were brought over until Mr. Goodfellow imported three in 1927 from Borneo, this same gentleman imported several more from the same country in 1930, my birds being two of them.

This strange genus of the birds form a rather compact but very

distinct family closely allied to the Sunbirds, in fact both the Spider-hunters and the Sunbirds are classified in the same family of the Nectariniidæ, but I do not think that their relationship is as close as to justify them being placed in the same family. At first sight they resemble rather large dull-coloured Sunbirds with huge curved beaks and in the case of *A. everetti*, the beak is almost as long as the body of the bird itself.

Most of the Spider-hunters are of sombre coloration, none of them having the brilliant colours of the Sunbirds, being of a moss or olive green and yellow marked and streaked with lighter or darker shades and their beaks are very much longer than those of any of the Sunbirds. Though so closely allied to the latter birds they differ very considerably from each other in demeanour in captivity.

I believe that the few birds which have been kept in captivity upon the rare occasions when they have been imported have not been a great success and I attribute any success which I have had with them to the fact that they have been kept in a high temperature, this being absolutely necessary to the well-being of these birds. They are not happy unless the thermometer registers 80° F. or more; below 70° F. the birds are listless, are miserable and breathe heavily. This is not surprising as they inhabit some of the hottest regions on the globe, the humid and tropical valleys and kloofs of the equatorial regions of the Far East where the average temperature must be over 100° F., so it is not to be wondered at that the birds cannot thrive when kept at a temperature only half of that which they have been used to.

Keeping the birds in this warm atmosphere makes it imperative that the liquid food is changed at least twice a day or it is liable to become sour. The food I find the best is a heaped teaspoon of Mellin's Food mixed in half a cup of fresh milk and filled up with boiling water, in which a dessert spoon of honey has been dissolved.

Despite their name I find that the birds do not eat spiders, in fact I find that they refuse all insect food, though I am hoping that when I release them in my greenhouse aviary which is now in the course of construction they will be able to find a certain amount of natural food.

Imagine a bird the size of a linnet with the beak very nearly as large as that of a curlew and then you have something of an idea of what the *Everett's Spider-hunter* looks like. This bird is of a dark bronzed green above with the whole of the under parts a bright pale olive yellow, on the back are two long tufts of pale coloured feathers which hang over the wings and give the bird a very peculiar look, it also possesses pectoral tufts which are expanded when the bird is excited and which shows its kinship to the Sunbirds. The beak, which is larger in proportion to the size of the body than any other small bird I know of, is black. This bird has two white spots on the end of the two outer tail feathers.

The other bird, which is the smaller of the two and is about the size of a small Sunbird, is a beautiful shade of shining moss-green above with a small yellow spot on the shoulder of each wing. Below is of an ashy-greenish grey with faint shaft streaks, the other tail feathers having a very conspicuous white spot near the end of each feather, this is very noticable when the tail is fanned. The beak is not nearly as large as that of the other bird, neither is it so dark. The legs are a very striking light pink or pale flesh colour. This bird moves about with rapid jerky and almost automatic movements, all the time swaying the body from side to side and fanning the tail. It seems more at home in the thicker vegetation than the *Everett's* and, unlike that bird, it quickly mounts the upright stems almost like a Tree-creeper.

The tongues of the Spider-hunters are exceedingly long and delicate and can be projected a long way past the end of the beak. These are well adapted for licking up the minute insects from the long tubular flowers and from the bases of the leaves of the huge tropical plants such as bananas, upon which the birds feed. The tongue resembles a long, almost transparent horse hair. While the Grey-breasted species never inserts its beak into the liquid but projects the slender tongue about an inch from the beak and sucks up the food from the rim of the vessel, never getting any on the beak or plumage which it keeps in spotless condition, the other bird inserts almost the whole of the huge beak into the syrup, subsequently shaking the drops off all over the foliage and incidently its own plumage.

Both birds, though very dissimilar in appearance and demeanour, are absolutely tame and will readily jump onto one's hand to reach the food pot or will fly out of the aviary to meet one in the morning. The larger one will also allow itself to be picked up by the hand.

By what one gathers of the wild life of these birds, the huge beaks must be of the greatest use in probing between the bases of large leaves, where the beaks of small birds would be of no practical use.

The notes on the wild life of these birds are very meagre, but we are told in *The Birds of the Malay Peninsula*, by the late H. C. Robinson, speaking of another species, that "It is an inhabitant of the gullies and damp places overgrown with bananas and other large leaved plants and is very active and constant in motion, searching the leaves and flowers for grubs and insects. The flight is swift and powerful, though the bird is never on the wing for any distance. The male, though it has no pectoral tufts, displays in much the same manner as the other species, maintaining itself almost vertically in the air, as it was on its tail and fluffing out the loose plumage of the flanks".

Of another species we are told, "Its favourite situations are the gullies and the banks of small streams and places where huge trees have fallen down and permitted the growth of wild bananas, tall gingers and other broad-leaved plants amongst which the Spider-hunter finds its food, which is principally flies, spiders, and small beetles.

It is particularly fond of hunting upon the pear-shaped inflorescence of bananas, which are always full of insects of various kinds, and is generally seen in pairs often running up the midribs of the larger leaves almost like a Creeper or Nuthatch.

Of the nesting habits of these birds, we are told that the nests "are more or less purse-shaped structures composed of skeleton leaves bound together with fibres and cobwebs and attached to the under surface of a large leaf, usually that of a banana".

The notes of the birds are very much like the scolding notes of a Sunbird and the Everett's Spider-hunter if it has been unduly disturbed will continue to utter this irritating sound for an hour or more afterwards. The two birds lived together in a small aviary with a growing privet-tree in, but the larger bird so bullied the smaller that it had to be removed in order to save its life.

The Borea Grey-breasted Spider-hunter, which is very closely allied to the Malayan Grey-breast bird, is found in most of the lowlands of Borneo, but the Everett's is, I believe, confined to the regions around Mt. Dunlit in the same country. The former bird has been brought here twice before, but the latter bird is the only one of its species to reach this country.

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## THE FIRST IMPORTATION OF THE HOATZIN

The successful importation by Mr. C. S. Webb of living examples of the Hoatzin is an event of outstanding interest and importance, for in addition to the fact that this is the first time this remarkable bird has been imported alive the bird is in itself perhaps the most important bird in the world from the zoological point of view, for it is the bird of all others that appears to have changed little from the time, in past ages, when birds and reptiles were but recently separated. Structurally, the Hoatzin is very distinct from all other birds, its chief peculiarity being noted in the formation of the sternum, the fore part of which is cut away to make room for an enormous crop which is necessitated by its habit of feeding entirely upon leaves.

The Hoatzin reminds one somewhat in its shape of a Touraco, though the toes are not zygodactyle as in that group, but arranged in the ordinary way of three in front and one behind. It has a very strong beak and the eyes, surrounded by a patch of bare skin, are protected by bristly lashes. The colour of the body is olive brown, the wings being barred with buffish white and the tail tipped with buffish yellow.

Beebe's description of the Hoatzin is worth quoting. He writes: "The flight of the Hoatzin resembles that of an over-fed hen. The Hoatzin's voice is no more melodious than the cry of a peacock and less sonorous than an alligator's roar. The bird's grace is batrachian rather than avian, while the odour of its body resembles that of no bird untouched by dissolution. Still, zoologically considered, the



Photo D. Seeb-Smith.

THE HOATZIN (*Opisthocomus hoatzin*).  
Brought alive to London by Mr. C. S. Webb.



Photo D. Seck-Smith.

THE HOATZIN (*Opisthocomus hoatzin*).  
Brought alive to London by Mr. C. S. Webb.

Hoatzin is probably the most remarkable and interesting bird living on the earth to-day.

“It has successfully defied time and space. For it, the dial of the ages has moved more slowly than for the rest of organic life, and although living and breathing with us to-day, yet its world is an affair of two dimensions—a line of thorny saplings threaded along the muddy banks of a few tropical waters.”

The Hoatzin exists to-day along the banks of certain rivers in central and tropical South America, and it feeds upon the leaves of aquatic plants and shrubs such as the Muckamucka and Pimpler, the latter being a bush which bears numerous sharp thorns on its stems rendering it impenetrable. The nest is always built over the water, and the young bird is provided with two sharp functional claws on each wing, one on the index and the other on the pollex. He knows well how to preserve his life should danger threaten him. He simply takes a header into the deep water beneath, where he swims with the agility of an aquatic reptile, ascending to the surface where some weed or floating debris will hide his head, his body remaining submerged until all danger is past when, by the aid of his claw-furnished wings, he is able to climb slowly but surely up the branches until he reaches the nest from which he come, though this may be as much as fifteen feet from the water.

D. S-S.

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## BREEDING RESULTS IN THE ADELAIDE ZOOLOGICAL GARDENS

By RONALD MINCHIN

Although in the past the Adelaide Zoological Gardens has succeeded in breeding many interesting species of birds (amongst them the Mallee Fowl and Native Companion Crane) no special efforts in this direction have been made for some years until last summer. The results as recorded below will, I hope, be of some interest to members.

The *Cereopsis* Geese (*Cereopsis novæ-hollandiæ*) have bred with us regularly for years. They are early starters as the eggs are laid during

mid-winter. Two pairs nested, but only one pair laid; four young being successfully reared from a clutch of five eggs. These birds subsist almost entirely on green food, and the diet of the young birds consists merely of the grass which they find as they wander about the Gardens.

A pair of Swainson's Lorikeets (*Trichoglossus nova-hollandia*), which share an aviary with several others of their kind, went to nest in early August and the hen laid two eggs in a log only about 14 inches long and 7 inches in diameter with a small entrance hole at one end. After about twenty-six days one egg hatched, and the young bird left the nest on the fifty-seventh day. It was noticed that about the twenty-seventh day the feathers on the wing just begin to show their green colouring and the breast quills appear orange with the green tip. Except for its less brilliant colouring the young bird resembles its parents, but the beak is blackish while the eye is entirely dark. Both the upper and lower eyelids are much lighter than those of the adult, and in the youngster appear almost to form a white ring round the eye. The diet of the Lorikeets here consists of milk sop, together with soft fruits such as pears, grapes, and peaches.

In an aviary occupied by three pairs of Alexandrine Parrakeets (*Psittacula nipalensis*) two pairs went to nest and laid three eggs each. The first pair hatched one egg, but the young bird lived only a few days. The second pair were more successful, however, for all three eggs were hatched and the young reared. Although other seeds were offered, the young were fed almost entirely on sunflower seed plus apple and seeding grass.

In a large dome-shaped aviary 45 feet high and 35 feet in diameter, occupied mainly by members of the *Platycercus* family, a pair of Indian Ringnecks (*Psittacula torquata*) laid three eggs in an upright log. Two young were hatched and safely reared. For a wonder no ill-feeling was shown towards them by the Broad-tails, but a great deal of interest was manifest, for both during the period of incubation and after the eggs had hatched, it was no uncommon sight to see a Rosella or a Pennant poking his head into the log to see how things were going.

In a series of aviaries erected specially for breeding the rare Australian Parrakeets, a pair of Elegant Grass Parrakeets (*Neophema*

*elegans*) laid four eggs in October, all of which were hatched and reared.

A pair of Turquoise Grass Parrakeets (*Neophema pulchella*) laid four eggs in their first clutch, and hatched two young; one cock and one hen. In the second brood only one cock was produced. The small number reared by this pair is probably due to the fact that the hen herself was only hatched the season before.

A pair of Hooded Parrakeets (*Psephotellus dissimilis*) were acquired during the season, and because it would have disturbed the birds in the neighbouring cages, a mound was not erected for them to nest in. The pair, however, soon got to business, and four eggs were laid in a log. The hen proved to be a very "flightie" individual, and came off the eggs at the slightest disturbance. After a time the eggs were removed and proved to be addled. Three weeks later she began again, and laid one egg on 10th November, and the next on the 12th, and so on up to the 18th, when the fifth and last egg appeared. But this also was a failure. During the first week in April five more eggs were laid, four of which were removed and placed under a foster-mother who later deserted them. The hen Hooded, evidently thinking it a waste of time to try to incubate only one egg, immediately set to work and laid three more, bringing her total up to seventeen for the season! At this stage it was decided to give the pair ample food and water, and only go near the cage every third day in order not to disturb the hen. This is one of the rare cases where neglect, or at any rate, semi-neglect, has met with success, for there are now young in the log two or three days old.

Of the Finches I will only mention the Chestnut-breasted Finches (*Donacola castaneithorax*), which laid five eggs in a nest which they constructed in some brushwood about 2 feet from the ground. Three young were hatched on the thirteenth day of incubation, and they eventually left the nest on the twenty-second day, but returned therein for several nights to roost. The parents are now building again in a box.

Several species of Pigeons were reared, including three Nicobars (*Calenas nicobarica*) from two breeding pairs.

Naturally there were many disappointments. One of our pairs of Bourke's Parrakeets were seen to mate, and the cock fed the hen

for several weeks, but they did not lay, probably owing to the fact that they had only recently been trapped in Central Australia. A great disappointment was the mysterious disappearance of a clutch of Red and Blue Macaws (*Ara chloroptera*), which vanished when five days old. We suspect cannibalism on the part of the cock, so next season he will be separated when his mate begins to sit. I can find no record of this species having been bred in captivity although it has hybridized with the Military Macaw. We should be very grateful if someone could enlighten us as to whether it actually has been bred.

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## THE BIRDS AT PAIGNTON ZOO

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

With each succeeding visit to Mr. Whitley's collection at Paignton one comes away more and more impressed with its magnitude or, rather, magnificence, with the marvellous condition of its inhabitants, and with the number of species (and hybrids) which are bred there, in many cases regularly.

I have on previous occasions attempted to describe the collection, but such attempts have been hardly more than impressions and can at the best have given but a poor idea of the whole. A recent longer visit fired me with the desire to improve on this, and give as full as possible an account of all there is to be seen in the bird line. This could only be done by going round the whole collection and listing the inhabitants of each house or aviary in turn—no mean undertaking, as the numbers of these are large and they themselves really call for proper descriptions—but that must wait another hand. Before going further I should say that the Zoo is situated about a mile north of Paignton front, and is open to the public at a charge of a shilling *plus* tax, as required by law nowadays. Birds are, I suppose, its speciality, but it also contains most of the ordinary Zoo inhabitants, from lions to Waxbills, while part is devoted to domestic breeds—Pigeons (nearly every known variety, I should think), Bantams, rabbits, and guinea-pigs. A notable feature is the very excellent labelling, and there is as well an illustrated guide to the whole domain, which planted with

beautiful shrubs and other plants, all labelled and easily identifiable, is indeed a marvellous place.

Taking the collection thus, house by house, is really the only way of getting at what it actually contains, and even this would have been impossible without the assistance of the owner, who came with me nearly everywhere, and ensured my seeing, or, at least, having every chance of seeing, everything, even in the thickest and largest enclosures; but for this assistance, I could not even have named many of the inhabitants, so many are the rarities. I only wish I could pass on even half the information about every one of them which is in their owner's head and also at his finger-ends, but that is beyond me, though what little I can remember I have tried to incorporate here, indicating such by inverted commas, thus tapping in a feeble way a minute portion of the volume of valuable data about birds which Mr. Whitley (and he alone) can supply.

I will now ask my readers to imagine that they are accompanying us on our round, which took a week and which began with the collections at the house and the newer aviaries which have been built or are being built at the Zoo, but which are not yet open to the public. These vary in design, but all the newer ones are intended to meet the special requirements for successful breeding and at the same time give the best possible view to visitors; this difficult combination has been attained in a wonderful way. Here I must mention that the names I give for the various aviaries are my own, given to make my descriptions clearer and easily followed, for few of them as yet have official names, and merely numbering each seemed an inadequate way of describing them.

#### (1) THE GREENHOUSES AT THE HOUSE

These are a long range of houses, in some of which a few choice Parrots live among all sorts of tropical plants, fish, and reptiles, the last including two sizeable alligators and a tropical turtle, which was found some years ago by a young lady, I believe, on the Paignton beach, and which has lived here ever since in a tub of salt water about its own size, changed every week, and in the course of the years grown considerably. Besides all these I think there are a few odd mammals,

for a couple of Lorises live loose in the first house and I think there is a Galago in another; but here, as with the rest of the collection, I must keep strictly to the birds, if I can ever hope to finish.

The first of these we come to is a Brown-necked Parrot (*Poicephalus fuscicollis*), which has been here about five years. This species I know well when in the Gambia, and this particular individual is one of those which has lived long enough to disprove my belief that the red head was a sign of youth, for it still has the whole crown red, a bright red with a tinge of pink. Mr. Whitley feels certain that this "is a sex difference and is a female distinction which makes her a more brightly coloured bird than the male, as is the case with other members of this genus". Next come two large wall-cages (about 4 by 4 by 5 feet), each containing a Hawk-headed Parrot in perfect condition, but in future I shall omit such descriptions, for nearly all the birds would merit such, so that perfect condition or words to that effect is to be understood for every bird except where otherwise noted. In the next division of the house are five more similar wall-cages, holding respectively an Eclectus cock, two Dusky Pionus, two Green Pionus (*menstruus* and *flavirostris*), two *Tanygnathus* ("? *lucionensis*, though not typical, as they lack the blue patch on the head and also look larger"); the last cage contains a pair of Great-billed Parrakeets, *T. megalorhynchus*, and an ordinary Parrot-cage houses a pair of Red-faced Lovebirds, the cock not all he should be in his owner's eyes, but looking fit enough to ordinary ones. The last bird-containing division contains a hen Meyer's Parrot and two rare Conures, *rhodogaster* and *leucotis*, each housed singly.

Beyond the greenhouses are two old aviaries which each contain a pair of Macaws, Hyacinthine and Lear's, paired for breeding, and just outside the house-door just now are three nestling Black-headed Gulls, which were hatched and are being reared by a Bantam hen, their food, however, being supplied at short intervals by their owner all day and for much of the night; the eggs came by rail from Lancashire, and all hatched, and the rate at which the young are growing is astonishing.

#### (2) THE GARDEN-POND ENCLOSURE

Contains one male Swan, one Snow Goose gander, one Snow- $\times$ -Emperor Goose female, some blue Decoy Ducks, three Demoiselles,

and one Stanley Crane. We can now cross the road to the Zoo proper, and commence with the

### (3) THE NEWEST PARROT-BREEDING AVIARIES

Eight compartments, containing pairs of Hyacinthine, Green-winged, and Lear's Macaws, and the following mated for hybrids: Goffin's and Roseate Cockatoos, Molucca and Great White Cockatoos, Citron-crested and Ducorps's Cockatoos, Molucca and Sulphur-crested Cockatoos, Roseate and Lesser Sulphur-crest. The second names are the hens and the same should be understood in similar cases later on.

(To be continued.)

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## AVICULTURAL NOTES

By THE EDITOR

The Avicultural Society of New Zealand, which is affiliated to our Society, is getting together a library of avicultural and ornithological books for the use of its members. If any of our members should have any books on these subjects that they do not require further, our New Zealand friends would be most glad of them, and would be glad to purchase some of the better type of such books.

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Mr. Webb's collection from British Guiana, though a small one, contains some very choice birds. On another page mention has been made of the Hoatzin, of which two specimens arrived alive though one soon died; but in addition to these there are three Humming Birds, namely, the Wood Nymph (*Thalurania fissilis*), Lesson's Emerald (*Agyrtia fimbriata*), and the Sabre-wing (*Campylopterus largipennis*). The Wood Nymph is the smallest and at the same time the most beautiful, its general metallic green dress being relieved by a violet-blue collar.

Mr. Webb has fed these Hummers entirely on a mixture of equal parts of Horlick's malted milk and Mellin's food, with about five parts of water, and they, or at any rate the two smaller ones, are in most excellent plumage and condition.

There is one example of the Cock-of-the-rock (*Rupicola crocea*), that wonderful orange-coloured bird that everyone has heard of but many have not seen alive. It was in 1910 that several examples, presented by the late Sir William Ingram, Bart., were exhibited in the old Small Bird House at the Zoological Gardens, and in THE AVICULTURAL MAGAZINE for September of that year their collector, Mr. W. Frost, published an article describing in detail the habits of these birds in the wild state.

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The old Tortoise House at the Zoo, which has for some time been known as the Tropical House, though it has contained nothing more exciting than a young rhinoceros, is now being transformed into a real Tropical House. One side of it will be for birds, and should represent a real bit of a tropical forest. In it, disporting themselves amongst the foliage and on the ground, will be Sugar-birds, Tanagers, Pittas, and such other birds as may be found to thrive in the hot, moist atmosphere.

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I should like to remind members that at this time of year copy for the Magazine is apt to be scarce. Aviculturists are too busy to write, and wait until the autumn and winter before recording their successes—or failures—during the summer. But as the Magazine has to be kept going throughout the entire year, I should be glad if members would let me have any notes that may be of interest.

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Dr. Hopkinson tells me that Mr. Whitley has at present in his "Zoo" at Paignton 134 different species of Parrots and about ten different hybrids (six Broadtails, etc., four Lovebirds).

The total Parrot population comes to about 270 head, without counting dozens or scores of Budgerigars and Lovebirds, and to this must be added the hybrids, i.e. about a dozen Parrakeets and dozens of Lovebirds.



See also *Esca & Derivatives*, 114 London

Natal Pigmy Kingfisher  
*Ispidina picta natalensis.*  
Plate presented by Mr Alfred Ezra.

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THE NATAL PIGMY KINGFISHER  
(*ISPIDINA PICTA NATALENSIS*)

By ALFRED EZRA, O.B.E.

Last May Mr. C. S. Webb brought over a very interesting collection of birds from Portuguese East Africa, and, as usual, in absolutely perfect condition. Among them he had two of the very beautiful Natal Kingfisher, of which we have a coloured drawing in this Magazine. It is only  $4\frac{1}{2}$  inches in length, of which the bill occupies fully 1 inch. Of course, I fell in love with these, and brought them home. They were fed on tiny pieces of meat and mealworms, and it was delightful to see them darting at the latter from their perches. A bath they loved more than anything, and I had to remove the water from their cages in the afternoons, as I was afraid of their overdoing it and catching a chill. They made most perfect pets, and I kept them for several months, but unfortunately lost them in the autumn, when I was away and they were not correctly fed. This bird is but a local race of the Senegal Pigmy Kingfisher (*Ispidina p. picta*), from which it differs mainly in its stouter bill, by the plumage, and the presence of a blue spot behind the ear. It is found from Tanganyika to Natal, while the Senegalese form inhabits the rest of

tropical Africa, and has never been imported alive. This Pigmy Kingfisher is not confined to rivers and streams, as many members of its family are, but is often found in thick woods and bush, sometimes far from water. It perches on trees, rushes, and also telegraph wires. It is purely insectivorous, darting at its prey from its perches. It never seems to dive for fish.

It is said to nest in holes in the earth, these sometimes being formed in the sides of the burrows of the Ant Bear (*Orycteropus*).

## THE TRIALS OF AN AVICULTURAL NOVICE

By J. E. SWEETNAM (Vicar of Taunton)

Only an editorial comment in last month's issue insinuating that even the demigods who habitually contribute to this learned periodical are subject to trials and failures, even as ordinary mortals, has emboldened me to suggest the inclusion of an article under such a heading.

Furthermore, when reading of Hoatzins, Turacos, and such-like rarities, which neither time, space, or pocket allow us to possess, one wonders if there may not be other impecunious lovers of the feathered tribe who would appreciate an occasional article better adapted to the narrowness of our brows!

Should the editorial cupboard be so bare at this holiday season that he is reduced to printing these jottings, they will certainly not offend in that direction, since the writer's aviaries—if two disused rooms with small outside flights, and a converted outhouse with a 15 × 5 ft. flight, can be dignified by such a title—contain nothing rarer than Cuban Finches and Australian Hard-bills.

From the latter source arose one of the many trials that beset me in the first year of my novitiate: when nest after nest was either pilfered or so disturbed that their rightful owners abandoned it in disgust, by a pair of those innocent-looking Long-tailed Grass Finches—

who, as they sit chattering with their heads together, remind one of a pair of parish gossips discussing the latest scandal, and seem to have a like propensity for interfering with the domestic arrangements of others.

Perhaps this particular pair were not without some excuse, since their owner was himself guilty of a reprehensible curiosity in regard to nests which not even Cutthroats could endure without protest. But, apart from these busybodies, nearly sixty birds of forty different species crowded into the space mentioned afforded abundant reason for the trials and failures of one who is now a sadder and a wiser man.

I believe Diamond Doves are regarded as practically fool-proof, but even they were not proof against me, though, in this one instance, at any rate, I contend the boot was on the other foot. For crass stupidity commend me to this species. My first pair almost ended my avicultural career, so distressed was I at their untimely end. They lived for two days in a strange aviary in apparent contentment and then, poor things, perished under similar conditions to the Ancient Mariner, although surrounded on all hands by an abundance of food and water.

Apparently they make no effort to protect their nests. My second pair lost two sittings to the parish gossips, and, when relegated to a small separate flight, refused to build at all, even though I was building on them to help pay my seed bill!

Has any reader sunk so low as British hybrids? If not, they will be well advised to preserve their integrity for, except one resorts to the crude method of caging the pairs, it is an exasperating business. If successful in avoiding a messaliance with such Mormons as the Yellow-rumped Serin or the Singing Finch, some other house-hunter is always liable to come along and "upset the apple-cart" whilst the hen, finding herself in the position of a married widow, with paternal as well as maternal duties thrust upon her, is off in search of food and exercise. I believe Canaries are recommended under such circumstances, but one can no more expect a Canary to understand the upbringing of a brood of Bramblefinch  $\times$  Chaffinches than a theological college to turn out assistant curates qualified to look after an aviary when their Vicar's absence places them in the position of the Curate-

in-Charge! And thereby hangs another tale of woe, too harrowing to record!

When there has been evolved a species of Silverbill or Zebra Finch immune from egg-binding, a Cutthroat that does not take its moral tone from the natives of its own habitat, and expose its unwanted progeny (mine apparently wanted none!), a sharp-tailed Finch that will condescend to incubate, or a Golden Sparrow that does not attempt to poise its eggs on a convex nest, I think I may become a successful aviculturist.

In moments of extreme depression I have contemplated abandoning all self-respect and keeping Canaries, but never abandoning a pursuit fraught with so many trials and so much pleasure. For surely the plutocratic possessors of miniature zoos can derive nothing like the same pleasure therefrom as some of us from our glorified cages.

It is unfortunate that even the records of the AVICULTURAL MAGAZINE do not cover that period, for if, as is probable, the science of aviculture was practised in the time of Job, he apparently possessed the requisite qualifications for success.

## NOTES FROM THE LINDORES COLLECTION

By J. C. LAIDLAY

The Editor asks for copy, and yet owns that aviculturists are too busy to write. Too true. Seven a.m. to 11 p.m. every day for months on end is busy. Then, this June, in the first two weeks, six inches of rain fell, over 600 young ones to tend to, most of which are sun-worshippers, and certainly we are busy. Most of the young being reared are the same we rear every year, so there is little of real interest to record. However, we have tried some new feeding methods which may be of interest to others. Firstly, we have added a portion of duckweed, about a tenth part to the young Eiders' ration, which I think undoubtedly has improved their general health, and with Common Partridges we have cut down their meals, and very small ones at that, to three times a day. I think more Partridges are killed by



*Photo by Mrs. Laidley.*

GREY-LAG GANDER KEEPING GUARD OVER THE SITTING GOOSE  
WHO WAS NEVER SEEN TO LEAVE THE NEST.

overfeeding than any other cause. We have one pen of White Pheasants. The hens here were bred four generations pure white, and are very inbred, so we got a new cock in that was bought as a pure white, but has some red on the breast, some twenty young ones were hatched, and three are marked like Melanistic, which makes one wonder whether the old saying that white and black are the same may apply here? Certainly I do not think Versicolour are responsible in any way for the Melanistic. To go back to the Ducks, as usual Mandarins and Wigeon have proved the easiest two varieties to rear, and Common Wild Duck one of the hardest. Carolina we have kept much longer off the water than in past years—result, broods now well on and averaging nines; seven pairs of Mandarins produced fifty-six young now mostly feathering; this pen always does best, I think owing to the pond being spring-fed and never freezing. Fertility is always better. Mandarin are very stay-at-home birds if bred on the spot, though wild-caught birds always leave, which made me very interested in the experiment of those released in London, which I thought at the time was rather asking for trouble. Here with rather large pens, about six acres each, and a lot of rank cover, we occasionally lose nests, with the result some young get reared by the Duck themselves, and grow up to prove a veritable curse, because they simply won't leave, and having full-winged birds about means inbreeding, and they have to be shot. At various times we have had Carolina, Mandarin, Garganey, Shoveller, Common Teal, Common Wigeon, Pintail, and Gadwall; thus full-winged if males, they get to know every pen, however far apart, and visit them all in turn, causing lots of fighting and general trouble. Hybrids, I am pleased to say, this season have only occurred in two cases, one brood of ten Chestnut Breasted Teal  $\times$  Falcated. This rather a pretty cross, and a single Red-crested Pochard  $\times$  Rosy-billed Pochard. Disease and illness so far we have been free of, and I think that owing to taking the young away sooner from the bantams has helped. Crowding into a coop which, however often it is moved, must become dirty, cannot be good. After leaving the bantams, we are putting the broods into a small house holding about fifty at a time, then from that into the open ponds with no protection or shelter.

Another point worth recording is that we have carefully watched

several species of birds when left to sit, and noticed that many rarely left the nest. Wild Turkeys sat for twenty-six days, and only came off once; Greyleg we never saw off; Falcated, weeds grew all over a sitting bird, and so on. So we have tried when taking the Bantams off the sitting boxes to keep the eggs as warm as possible, and put back the Bantams whenever they have fed.

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## NOTES ON VARIOUS RARE PITTAS

By SYDNEY PORTER

The Pittas are a strange but very homogeneous group of birds, with no near allies, which inhabit the hot tropical regions of the Old World, mainly the East Indies, the Malay Peninsula, and the South Sea Islands. They inhabit for the main part the dense hot humid tropical jungles and forests (though I believe a few are found at fairly high altitudes on mountains), usually in the vicinity of water, and they are seldom seen by any except the naturalist, who wanders into their home, or the sharp-eyed natives.

They frequent the undergrowth, living principally on the ground, where they find all their food, various insects, spiders, and ants, etc., which they procure by turning over the leaves and mould in very much the same manner as Thrushes or Blackbirds.

In spite of a very fine monograph being written on these birds, not a great deal is known about their wild life.

Many Pittas are migratory, which seems to me rather an extraordinary thing, for they are usually the denizens of the hottest and the most tropical countries of the world. One would think that it would not be necessary for them to move about, always having a constant supply of insect food near at hand, but as they do not traverse large stretches of ocean or land-masses, but simply move leisurely north or south, it may be some remote migratory instinct which is dying out, and which was necessary when climatic conditions were different from those of to-day.

The distribution of the Pittas is very extraordinary, and is one of the greatest puzzles to ornithologists, and one to which there is no satisfactory explanation. Many very closely allied birds, and often birds of the same species, live in countries very remote from each other, but in Borneo, for example, many very distantly related birds live in very close proximity. Borneo seems to be the headquarters of the Pitta family, and boasts of nine very distinct species which are certainly amongst the most brilliant birds in the world. Java possesses only one species, the lovely Blue-tailed Pitta mentioned later on in this article. One species is found in Japan, and another in Borneo, another which is closely related to the well-known Bengal Pitta is found in Central Africa, a region many thousands of miles from its nearest ally, and with great land masses intervening in which no Pitta could exist. One is found in restricted parts of China, and again in Formosa. Two very distinct species are also found in Northern Australia. A great many of the islands which lie north-east and east of New Guinea are inhabited by one or more very distinct species of these birds.

The most extraordinary of all, the Giant Pitta (*Pitta maxima*), a very brilliant bird, almost the size of a Partridge, inhabits the little-known island of Halmarheira, where unlike the rest of the family it lives amongst the crags and stones of the mountains. Nearly all the family, except a very few, are arrayed in the most brilliant of colours, most species having in their plumage patches of brilliant sky-blue feathers of a peculiar wax-like and almost luminous appearance. These feathers usually form either the tail or wing coverts. Green, black, blue, white, and yellow, usually in combination with the most vivid scarlet, are the main colours, and these are always pure and clear, and never shade from one to another.

In shape the Pittas resemble somewhat rather large and rotund Thrushes, with very long legs and very short tails, which are usually hidden when the wings are folded, making the bird look as though it had no tail at all. In some species the tiny tail is kept in constant motion, being wagged up and down with great rapidity.

Before much was known of these birds they were known to ornithologists as "Ant-thrushes".

Pittas have never been very common cage birds in this country, or anywhere else for that matter. Perhaps one reason is that they are difficult to procure, and again that they are still more difficult to keep by people who do not know how to attend to their wants, and it is with the object of throwing a little light on the management of these lovely birds that I offer this short chapter to the readers of THE AVICULTURAL MAGAZINE.

The Bengal Pitta (*Pitta brachyura*) is the most commonly imported, and may be picked up at a fairly reasonable price from time to time, when a consignment of Indian birds arrives in this country; but the rarer birds are usually only brought to England after a private expedition has been out to the East. Most if not nearly all the rarer Pittas landed here have been brought from the Far East through the agency of either Mr. Frost or Mr. Goodfellow.

Pittas have always been my favourites, for they combine many characteristics which make them delightful aviary birds, though at the same time they have many drawbacks. In regard to their attributes, they are pleasing in shape and colour; they usually get extraordinarily tame, and display unusual intelligence, and if properly looked after will live for many years.

Against this we find, as mentioned above, that with the exception of the Bengal Pitta, these birds rarely come into the market, and are consequently very expensive to buy. They cannot under any circumstances be kept together; even male and female of the same species have to be kept in separate aviaries. In fact, one pair of newly imported birds which I received were put into a small aviary, but as soon as the door was closed the cock began so to bully the hen that had I left them there the hen would have been dead in an hour or so. I know of no birds more pugnacious towards each other.

Pittas have no song, and if one wants to keep them in good condition they need unremitting attention. They are also unsuitable for cage life owing to the great rapidity with which they move. Their movements may look comparatively leisurely, but in reality they are extremely rapid, and the birds can cover a great space in a very short time with their great bounding hops.

In the first place, a well-lighted indoor aviary is necessary where

the temperature is kept between 60 F. and 70 F., and as the birds live mainly on the floor, they can be kept with impunity with any other small birds; in fact, I find that they will not harm the smallest Waxbill.

The feet of these birds often go wrong, which is not to be wondered at when we think that they have always been used to standing on the damp steamy loam of their native forests, and then when they arrive in this country they are usually placed on hard dry sand. It is necessary to have large shallow trays made of zinc. The ones I use are about three or four feet long, by two or three feet wide, and two or three inches deep, and are filled with damp leaf-mould which is changed every week. The mould requires damping every so often by watering it with a can with a fine rose. Several large stones and pieces of rotten tree trunk should be placed about, for unless these are given the beak and feet are liable to get overgrown. Also a shallow pan of water is needed, for nearly all the Pittas are semi-aquatic, and I have seen them stand for hours in the water, apparently just bathing their feet. Professor Newton, in his work, *A Dictionary of Birds*, disputes the right to call these birds "Water-thrushes", and says: "There is no evidence of their having aquatic habits," but I think there is, judging by the few wild birds I have seen, which were always in the vicinity of rivers and streams, and the ones I have had in captivity; for besides standing for long periods in water and catching small fish, etc., I have noticed that the Blue-tailed Pitta will play with the water. If any of my very tame birds hear the trickling of water they will come up and investigate.

Pittas require a rich insectivorous food, moistened with finely grated carrot, and mixed with chopped hard-boiled egg. They also require plenty of live food, such as live ant eggs, a few gentles, and mealworms, but not too many of these latter, as they are rather overheating. I find that the coming in of live wasp-grub just coincides with the moult of the birds, and they prove most useful in retaining the brilliant scarlet under-parts of the plumage, which fade unless the birds get the right kind of live-food.

All this may sound a lot of trouble, but it really is not when one gets used to it, and unless one is prepared to do this for the birds, I think that it is wrong to attempt to try and keep them.

Keep in an ordinary cage or aviary on hard dry sand and wooden

perches, the birds soon go wrong. Their feet get into a terrible state, so bad that the poor things cannot walk; the brilliant colours fade, and soon the birds are no more. I have even seen birds in public collections in this state, and the sight of the poor pathetic creatures trying to hobble along with feet swollen as large as marbles, has made my heart bleed for them.

Given good conditions and care there is no more charming bird than a Pitta. Intelligent and tame to a degree, unique in shape and colouring, few birds give more joy to their owner than one of these birds in good condition.

When frightened or trying to intimidate another birds, a Pitta will crouch down on its long legs and wave its extraordinarily beautiful butterfly-like wings, which are usually striped, and marked with pale blue, black and white. It is said that the birds will do this in their native forests to frighten away other creatures. They would certainly look very startling in the gloom of their forest home.

If a bird is rather wild when freshly imported, it will be found rather an advantage to fasten sheets of glass about a foot high all round the sides of the aviary if it is a small one, then the bird cannot knock its head on the wires. Otherwise nervous birds are rather apt to make a mess of themselves.

I have one bird now which is so tame that it will readily jump on to my knee for a mealworm. Pittas are usually very wild when freshly imported, but if care is taken and kindness shown, they will soon lose their fear and settle down, becoming remarkably tame and confiding.

As a rule, Pittas are the most silent of birds, and one will often have a bird for years and never hear it utter a sound, though some will at times utter a soft low whistle. The Green-breasted Pitta will, upon rare occasions, make a sound exactly like the short snappy bark of a Pekinese dog. At first I refused to believe that it was made by the bird, but afterwards I both saw and heard it call. This call is remarkably unbirdlike, and is usually uttered when the bird sees another Pitta for the first time.

Most of the Pittas seem to moult about August to October, and the moult is accomplished in a very short space of time, the feathers

seeming to drop out in large quantities. It is then very essential to give large quantities of live food. If well looked after, the plumage of these birds will assume a lustre and gloss seldom seen in any other bird.

I have not been able to study the lives of any of the Pittas of the Far East in a state of freedom, but I have been able to see something of the home life of at least one rare species, namely the Angolian Pitta (*Pitta angolensis*), a bird which I think few Europeans have seen much of in its forest home.

The first time I saw this bird was in a small tropical wood where a stream ran into a river. Everywhere was rank tropical vegetation, the place was damp and humid, and the trees were so thick that the sunlight never penetrated below. All at once I was startled by a vision of the most brilliantly coloured bird I had ever seen flying across my path. Seen on the wing, no bird appears more brilliant than a Pitta, most of the colours which are ordinarily hidden being brought into view, but on the ground or in a tree it is very difficult to detect, for many of them have green backs.

The Green-breasted Pitta (*Pitta cucullatus*). Many years ago, when wandering around a well-known bird store, I came across a cage with a very miserable and dejected occupant. It was a Pitta of some sort, but of what species no one could tell, for the simple reason that it was minus nearly all its feathers. It had been in its tiny prison for many months, for when it first arrived the price asked was too high, and it was passed by until, after being kept in the cage where its head rubbed against the top and there was no room to open its wings, it had become the pitiable object that I found it. But in spite of its condition it had large and intelligent eyes.

To prove its tameness, it was taken out of the cage and put on the floor, but it could not fly, because it had not wing or tail feathers!

After some bargaining "Lily Long", as she afterwards came to be called, became my property, but whatever price had been asked I would have bought her, even though it meant going without a new winter overcoat!

Visitors to my birdroom said as they watched her hop with those huge hops only known to the Pitta tribe, "What is that awful

creature? ", or " Whatever did you buy that thing for? "; but in a few months' time they had forgotten the poor little " scarecrow ", and when they saw " Lily Long " again, they failed to recognize her after she had assumed her new garb, and said, " What a beautiful creature, wherever did that come from? ", for the moult came quickly and at a time when we could get plenty of wasp-grub upon which our little friend lived. She (we call it " she " but we do not know to this day whether it is a male or a female, for it is impossible to tell the sex of most of Pittas by outward appearance), became a vision of beauty. Not only that, but the bird became tamer and more intelligent than any other bird I ever possessed. And now each succeeding year she seems to become more beautiful, the feathers more wax-like and sleek, the crimson more intense, and the beautiful pale blue feathers of the back and wings appear almost luminous.

She is always friendly, though somewhat shy of strangers. I have only to call and she is at my feet or on my knee with the stumpy tail bobbing up and down a hundred to the dozen.

The flight of this bird is remarkably silent and butterfly-like, and the beautifully marked wings then show up to their full advantage. In a state of freedom Pittas seldom fly about much except when migrating and, as though knowing what conspicuous objects they are in flight, they usually migrate at night. In its native haunts a Pitta only has to take a few hops and it is quickly out of sight in the dense undergrowth.

That this Pitta is semi-aquatic I have no doubt, for while it spends a great deal of the day in standing in water, it will catch small fish and gets excited as soon as it hears running water. In a small aviary with other birds I find this bird perfectly harmless, but it is always endeavouring to reach other Pittas in adjoining aviaries.

Practically nothing is recorded of the wild life of this bird. Robinson tells us in his *Birds of the Malay Peninsula* of the wild life of a closely related bird, the Lesser Blue-winged Pitta (*Pitta moluccensis*). " Vast flocks arrive from the north travelling down the Straits of Malacca on the west coast, and crossing the Gulf of Siam on the east. These migrants are found for a short time among the mangroves and on the small islands, and then seem to disperse inland to the low-

country forest, jungle, and scrub. They do not, however, ascend the hills, but frequent by preference the patches of forest, or even garden land in the neighbourhood of rice-fields. The diet is insectivorous, especially ants, but large snails are also eaten, and I am inclined to think that the huge accumulations of shells often at the bases of limestone cliffs, all with the apex broken in, are in part due to this bird which has the habit of selecting a particular rock for cracking the snail shell.

“In captivity the birds will live on boiled rice, plantains, and cockroaches, but they do not as a rule survive long, and are very wild, injuring themselves against the bars of their cage.

“They are not particularly shy, but run with great rapidity with their tails cocked up. In Tenasserin, Davison states that they perch much on trees and are very noisy birds, with a fine clear double note. In the migration season it is often heard late at night, but in Malaya the birds seem to keep mainly to the ground.”

With reference to the Green-breasted Pitta, he tells us that its habits are “exactly those of *P. moluccensis* with which it occurs, though a larger number seem to stay with us, possibly throughout the year. The bird frequents deeper forest, and is not seen so often near the villages, nor is it quite so common as its congener.”

The Green-breasted Pitta has a rather wide distribution for a Pitta, being found in certain parts of Eastern Bengal, Assam, Nepal, and the Malay Peninsula.

The Annamese or Saigon Pitta (*Pitta soror*). This is a very extraordinary bird, differing from most of the other Pittas which are usually arrayed in the most brilliant of colours, in having all the colours of the softest pastel shades, shading softly from one another; in fact, the colours are very difficult to describe owing to their softness and shading, but the chief colour of this bird is a very peculiar pinkish fawn with a mauve sheen, a colour which I have never seen in any other bird, the other colours being pale peacock green and blue. Sometimes, when the bird is angry or frightened, it will expose a patch just below the throat which at ordinary times is hidden. This is triangular in shape, with a row of white spots, and when the bird is crouching down with the head bent back, and this exposed, it looks exactly like a giant

toad with its mouth wide open. This, I am convinced, is a protective arrangement, and is done with the object of scaring away its enemies. It may also be used in the display of the bird. It is certainly a very extraordinary arrangement, the like of which is not found in any other bird.

My bird is the only one left of three imported into this country in 1928, from Annam, by Monsieur Delacour. It has never been imported before, and I doubt if it ever will be again, as its home is in a very remote and little known region.

Though perhaps not so tame as some of my other Pittas, it will readily come to one for a mealworm. It is a large bird about twice the size of the Green-breasted Pitta, and rather reminds one of a miniature Kagua, especially the large soft brown eyes.

This bird is kept in a large indoor aviary with various Jays, Barbets, etc., and I find that it can hold its own against any of the other birds. It is fond of digging in the leaf-mould for small insects, but in most of its habits in captivity it seems to differ in no way from the rest of the family.

So different in colouring and other characteristics is this bird from the rest of the Pittas that some years ago it was placed in a different genus, namely the *Hydrornis*, and called *Hydrornis soror*, but this has now been changed, and the bird is now known as *Pitta nipalensis soror*.

The beak and tail are much longer than those possessed by the rest of the family, the eyes are much larger in proportion to the size of the head, and the body is more rotund in appearance.

After the first moult this bird changed completely in colour; the dull fawn breast-feathers were replaced by ones of the most remarkable bright fawn-pink, the feathers of the crown, eyebrows, and nape became tinged with a beautiful glossy mauve-pink. After death these colours fade, and cabinet specimens give no idea of the real beauty of this extraordinary bird.

Red and pink are difficult colours to retain in captive birds after the first moult, especially in Pittas. If an abundance of live food be given, such as spiders, live ant eggs, the colours will be retained and the plumage will assume a remarkable gloss, seldom seen in any group

of birds. In fact, in some species the pale blue wing-coverts and tail-coverts attain such a lustre that I have been asked by visitors if they are luminous in the dark! For these patches resemble, when the birds are in perfect health and condition, the patches of phosphorescence found in various fishes and insects.

When in repose the Annamese Pitta stands perfectly upright with the back and tail at right-angles to the floor. It is a strange thing, but one never sees the picture of a Pitta standing in the correct position. They are usually portrayed standing with their backs horizontal and their tails exposed. No Pitta stands like that, and in all species with a short tail, this is hidden when the wings are folded, and so is the brilliant blue back. In a wild state a Pitta will, if it knows it is being watched, turn its back towards one, and watch with the head turned completely round. In this position it becomes almost invisible in the low bushes, for the green back tones with the foliage, and the oft-times striped head becomes invisible in the network of branches.

Nothing is known of the wild life of this species, but of a closely related bird, Oates' Pitta (*Pitta oatesi*) we are told that "it resorts to the gloomiest ravines, where the sun rarely penetrates even at midday, and feeds upon worms and insects. It seldom leaves the ground except to mount on a fallen trunk or low branch. The eyes are large and soft. . . . It is very industrious, turning over dry leaves in search of food . . . is likely to be found wherever there are damp evergreen forests."

This bird is figured in Elliott's *Monograph of the Pittas*, but the plate gives a very erroneous impression of what the bird is really like. This book, in spite of its being a very sumptuous and costly work and the only book written on the subject, is very disappointing. Most of the plates are very poor, and are obviously taken from very badly stuffed birds, and most are placed in impossible positions, and look more like those produced by the early seventeenth century artists than ones of little under forty years ago, when some of the finest ornithological illustrations were produced. I doubt whether the author or artists ever saw a live Pitta.

Monsieur Delacour tells us, in *The Ibis* for 1928, page 286, that this bird is numerous at Thua-Lun in Annam.

The Philippine Black-headed Pitta (*Pitta sordida*), like the previously mentioned bird, seems to have been very rarely imported into this country. Three were imported in 1929, and I believe mine is the only one left. There is no record of this species having reached Europe before, and that is why I add these meagre notes. Why this species is called "sordida" I do not know, for it is a pretty little creature and in no way dull-coloured. One of the smallest of the Pittas, it is dark glossy green above, the breast and underparts being a light almond green, the whole head glossy black, the lower back and wing-coverts being the beautiful pale blue so well known in the Pitta family, a patch between the legs and the under tail-coverts brilliant crimson, which is edged all round with black, while the wings are marked with black and white. From the foregoing it will be seen that this is a very strikingly-coloured bird.

It came to me a very poor creature, with swollen feet and a lump on one about the size of a small marble. After repeated soakings in warm soapy water and peroxide of hydrogen, this lump dissolved into a kind of jelly which easily came away, after which the foot was dressed with a special ointment, and in a few weeks the feet became quite normal again.

This bird greatly appreciates live ant eggs, upon which it mainly lives during the summer time. I think that these are the finest food for all Pittas, as they all greedily devour them, and I think they also live upon them to a great extent in the wild state.

I found this Pitta so fond of standing in the water that its feet became rather sore through it, so this had to be restricted to an hour or two a day. Unlike any other Pitta this one would sit down on its knees in the water.

The Black-headed Pittas, of which quite a few species are known, and of which *Pitta sordida* is typical, and which differ but slightly from each other, have their headquarters in the Philippines, and also in the islands which surround them, ranging as far as Borneo.

Not much is known of the wild life of this bird, so I may be forgiven for quoting from *The Ibis*, vol. iv, 10th series, page 617, where Mr. W. P. Lowe, speaking of a sub-species from Palawan, says: "The Black-headed Pitta though common is very seldom seen, as it usually prefers

the dense undergrowth of the forest. Occasionally I saw it in the bed of a stream, but on the slightest alarm it took refuge in the forest. At times when sitting quietly in the forest, one may hear it hopping about, and an odd glimpse of this lovely bird is obtained. They feed on centipedes and other insects."

Many pittas are said to utter a peculiar double whistle when in a state of freedom, but the only sound I have ever heard this bird make is a very low whistle, almost inaudible at a distance.

When in flight, few birds are more lovely than the subject of this chapter, for it is only then that the brilliant patches of shining blue are shown to their full advantage.

The Blue-tailed Pitta (*Eucichla cyanura*) comes from the great island of Java, and is the only Pitta found there. It belongs to the genus *Eucichla*, the Bar-breasted or Long-tailed Pittas, but even in these the tail is little more than three inches in length. This group contains seven or eight of the most gorgeous of this brilliant family, and certainly there are few birds in the world to equal them in beauty. Unfortunately, they are rare, even in the wild state, and only two species have ever been imported, namely, the rare and lovely Elliott's Pitta (*Eucichla ellioti*), which was imported by Monsieur Delacour in 1928, and this one, which I think has been imported four times. The first bird imported in 1919 went to the late Mr. Astley, another was imported in 1925, while no less than seven came in 1928, and six more in 1930, of which mine were a pair. This is, I think, the only record of any of these birds being imported.

The Blue-tailed Pitta is truly one of the world's most beautiful birds, and to my mind even more lovely than Elliott's Pitta mentioned above. Seen for the first time in the sunlight one is left with a sense of amazement that a bird could be so beautiful. In spite of the variety and the brilliance of the colours, the bird does not offend one's æsthetic sense, for the colours are toned down by the presence of a rich dark brown. These birds are remarkably quick and alert in their movements, and the long loose breast feathers are continually puffed out so that the bird almost resembles a ball, as it often sways from side to side.

John Whitehead tells us when bird collecting in Java that "the

coffee-plantations formed my best hunting grounds, and there I collected numbers of a beautiful Pitta (*Eucichla cyanura*), the breast of this species being a golden yellow banded with blue stripes. . . . Fairly common in the coffee plantations near Lawang where the absence of undergrowth allows of free movement. The sexes apparently separate during certain seasons as in one plantation I could only meet with males, while in another more distant I procured females in number. This species takes to the lower branches of trees when alarmed. These Pittas and many other birds shot near Lawang had numbers of long flat white worms under the skin, especially about the thigh-joints; these worms were rolled up in round discs". It was the presence of these worms that killed one of my birds. For only a few weeks after I had congratulated myself on being able to obtain a true pair of these rare and exquisite birds, I lost the hen. She was absurdly tame, in fact, only the morning she died she had been having a game with me pecking and pulling my fingers and playing "hide-and-seeek" round a plant pot in her aviary. I was never so sorry as when I lost this charming and beautiful creature. A post-mortem revealed the presence of these same worms all over the body.

In Elliott's *Pittidea* we are told that "this Pitta is a forest-loving bird, often seen in old coffee plantations from 600 to 3,000 feet; and in places overgrown with shrubbery and reeds, and it frequents the gloomiest spots, remaining on or near the ground."

I find that this Pitta differs in several respects from the rest of the family, in so much that it is far more arboreal, spending quite as much of its time on the branches as on the floor. I have never heard the cock utter a sound, but the female used to make a low wheezing sound when puffing out the breast feathers.

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## THE BIRDS AT PAIGNTON ZOO

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

(Continued from page 203)

## (4) THE PRIVACY AVIARIES

Twelve compartments. Nos. 1 to 4 contain Lovebird hybrids, Barbary Doves, odd lots of Budgerigars, two cock Californian Quail, and two Chukor hybrids; 5 and 6, hybrid Doves, "bred originally from a ? Red-eyed cock and a hen Barbary; they are now, after at least six generations, to all intents and purposes Brown Barbaries, and still breed true among themselves, though an occasional normal Barbary may appear." In No. 7 are a pair of *Cinnamopteryx* Weavers, which hatched young last year, and an odd Guinea (Triangular-spotted) Pigeon. No. 8 a lot of Budgies and five Rufous Pigeons (*rufina*). Nos. 9-11, Budgies and Doves, Barbary and White. No. 12, a cock White Barbary Dove and a hen Snow Pigeon with a few Budgies.

## (5) CHINATOWN

Four streets of compartments, each about 5 by 4 by 2 feet, with the floor at waist-level, but built up from the ground; they are unheated and partly open above to the air, and are designed for breeding Munias and the like. Besides, the enclosure contains six aviaries, about 15 by 6 feet, a quarter shelter, three-quarters flight; of these the first contains a Pheasant-Domestic Fowl hybrid, bred last year at the farm on the moor, the father a visiting wild bird. This is a bird which really catches the eye, though he can hardly be called beautiful. With him are two hybrid Parrakeets paired for further developments, a Mealy Rosella- $\times$ -Pennant cock with a Yellow-collared- $\times$ -Rosella hen, the last bred here, the other by an Exeter enthusiast. No. 2, a pair of Derbyan Parrakeets with an odd Gold- $\times$ -Amherst Pheasant hybrid cock. No. 3, a pair of Barraband's Parrakeets, and a similar Pheasant hybrid. No. 4 a Yellow-rumped Parrakeet, mated with a Pennant hen, and a Red-legged Partridge with a Chukor hybrid hen. No. 5, the same hybrids as those in No. 1, but vice versa, the hen being the Mealy- $\times$ -Pennant. No. 6, a pair of Blossom-head Parrakeets and a Chukor cock, with a Red-leg hen.

*Chinatown Proper*

*Street 1.*—Four of its eight compartments are not yet occupied; the others house respectively a pair of the North American Blue Grosbeaks (*carulea*), a Turtle Dove paired with a hen Barbary Dove, a White Java Sparrow cock with a *Pectoralis* hen, with another pair for this cross the opposite way next door.

*Street 2.*—Two invalid Stanley Parrakeets which scalped themselves in a nocturnal panic, a Nonpareil Bunting, two Diamond Doves, two pairs of Red Mountain Doves, and an odd White Java Sparrow occupy five compartments, two are empty, and in the eighth are two Spice-Birds (*nisoria* not *punctulata*), one Sharp-tailed Munia, and four Tricolour Mannikins. Two of the last have distinctly chestnutty breasts, not the normal pure white. "This variation has persisted through two moults."

*Street 3.*—The first compartment holds a hen Blue Grosbeak (*cyanea*), waiting to be paired with the big all-blue Argentine Grosbeak, which has been here and unidentified so long; No. 2, a hen Rainbow Bunting, "at least two years old, but still with the breast a very bright yellow-green, almost too bright for a hen's"; No. 3, a pair of Lovebird hybrids; No. 4 a Cape Sparrow cock with a hen Saffron Finch; Nos. 5, and 6, two Cape- $\times$ -House hybrids, still separated by a division; No. 7, a pair of Pileated Finches; No. 8, empty.

*Street 4.*—A pair of Abyssinian Lovebirds, the hen on eggs; No. 2, a pair of Peach-face Lovebirds; No. 3, pair Masked Lovebirds. The other five compartments are filled with hybrid Lovebirds. These and Budgerigars are all over the place wherever room can be found for them. They breed regularly, and even more readily than Budgerigars. Six crosses at least have been bred; two, to two or more generations, when they breed true and would therefore appear to be functioning as real *species*. Mr. Whitley has a beautiful plate showing the six crosses drawn by a local artist; may we hope that this is a prelude to a full account by him of these and his many other hybrids?

*Street 5.*—Not yet finished, but two compartments hold Lovebird hybrids, and the third a pair of rare Parrotlets, smaller and a lighter green than the ordinary "Blue-winged Lovebird", which are believed to be *viridissima*. They are sitting on eggs.

## (6) THE CHINATOWN COVERED AVIARIES

Seven covered aviaries, each measuring about 12 by 10 feet. No. 1 contains a cock of the very rare Emin's Sparrow, a ruddy brown bird very like a Golden Sparrow in shape, paired with a hen Cape- $\times$ -House Sparrow hybrid. With them is an odd hen Snow Pigeon. No. 2, three last year's Gouldian Finches not yet in full colour, a perfect Lazuli Bunting (*Passerina amana*), only very rarely seen in captivity, and hard to keep even alive. This is the only specimen I have seen "in the pink". A pair of *Starnanas* Doves also inhabit this abode. No. 3, the "Bengalesery", where a crowd of these birds are nesting; they seem to be distinctly larger than the Bengalese one ordinarily sees. No. 4, one Tricolour Mannikin, one Bengalese, four Chestnut-breasted Finch- $\times$ -Bengalese hybrids, and a Rufous Pigeon paired with a white Barbary Dove. No. 5, four more Chestnut-breasted hybrids and half a dozen white Barbary Doves. No. 6, one Bar-shouldered Dove (*humeralis*).

## (7) FIRST NEW BLOCK

Eight large aviaries with outer and inner (heated) flights, each with a smaller inner compartment, here distinguished as (a). The first contains a pair of variable squirrels from Siam, whose coats vary through the year from white through pinkish to brown; at present they are white. It is interesting that there is another animal from Siam, recently arrived and in another part of the Zoo, which seems to be going to show the same characteristics; this is a Palm-Civet, which on arrival was white except for brown-tinged ears, but now shows a brown tail and a grey-brown line down the spine. Aviary No. 2 contains a young Pileated Parrot; No. 2a a Red-bellied Conure (*P. vittata*), "but not typical, for the groins only, not the whole belly, are red." No. 3, empty; 3a, a cock *Psittinus*. No. 4, a Whitley's Conure, with a Sun Conure (*solstitialis*) hen; 4a, a pair of Green-thighed Caiques. No. 5, a Blue-fronted Amazon cock with a Green-cheeked hen; the Blue-front is an enormous bird, and abnormally coloured, as it has very large yellow shoulder-patches and much more yellow on the head than usual; 5a, a pair of Noble Macaws. No. 6, a Blue-headed Parrot (*Pionus menstruus*), paired with a hen *flavirostris*; they have a chick;

6a, one Hahn's Macaw. No. 7, a pair of Lesser Vazas; 7a, a cock Meyer's Parrot, with a hen *fusicapillus*. No. 8, a cock Blossom-head and a hen Moustache Parrakeet; 8a, pair of Quaker Parrakeets.

#### (8) SECOND NEW BLOCK

Eight compartments, containing (i) four Amazons (*collaria*, *viridigena*, *albifrons*, and *leucocephala*), the last, the Cuban Amazon, caged alone; (ii) a Salle's Amazon, with a Cuban hen; (iii) two Slenderbill Cockatoos; (iv) Lesser Sulphur-crested Cockatoo and a Leadbeater; (v) two Amazons, a Spectacled (*albifrons*), and a Green-cheeked (*viridigena*); (vi) a Bare-eyed Cockatoo cock and a Roseate hen; (vii) one Greater Sulphur-crested Cockatoo; (viii), a pair of Great Black Cockatoos (? Goliaths).

#### *Adjoining Paddock*

Four Magpie Geese, recently arrived; "probably only one is a female." With them are three Screamers.

#### (9) PARROT RECEPTION ROOM

A large apartment containing about forty cages, ordinary and (if I may say so) extraordinary, containing a wonderfully varied Parrot assortment with some other birds. No. 1, pair of Musky Lorikeets. 2, two Swift Lorikeets. 3, two Porphyry-crowned Lorikeets, "one adult, the other a young bird; these six birds are some of those recently brought over by Dr. Hamilton." 4, a Cockatiel. 5, a Blue-cheeked Barbet. 6, two hybrid Lovebirds, Black-cheeked- $\times$ -Masked. 7, two Malabar Starlings. 8, a Red-eared Bulbul. 9, two Stanley Parrakeets, one abnormally coloured. 10, the hybrid Royal- $\times$ -Superb Starling bred here last year; it resembles the Royal more than the Superb, and the breast colour is a yellow, midway between the colours of the two parents, while the tail is slightly shorter than its father's, though that may alter as the bird has not quite finished moulting yet. No. 11, one Red-eared Conure. 12, two Conures, a Cactus and a Brown-throated. 13, a Dusky Pionus. 14, a Triton Cockatoo eating his chest-

feathers. 15, a Queen of Bavaria Conure in perfect order, but an ex-feather-eater of the worst type. 16, a hen Grand Eclectus. 17, a cock ditto. 18, a cock Red-sided Eclectus, lately Miss Knobel's. 19, a biggish Conure, "Weddell's." 20 and 22, two Petz's Conures. 21 and 23, two *Brotogeris*, Orange-flanks. 24, a Blue-rumped Parrot (*Psittinus*). 25, one *Pionopsittacus mitratus*; "she had fertile eggs in 1927." 26, a Senegal Parrot. 27, one *Palaeornis longicauda*. 28, one Hahn's Macaw. 29, two Conures, a cock *leucotis* with a hen *emma*. 30, one *emma*. 31, a Conure mostly green, but otherwise of the *emma* type, "a *P. ruficola*, and probably the only one in captivity." 32, one Red-faced Lovebird. 33, a Jendaya Conure. 34, a Blue-bonnet Parrakeet.

Five large floor-cages contain (i) a Pileated Parrakeet (*spurius*), (ii) a Goliath Cockatoo, (iii) a pair of Swainson's Lorikeets, (iv) several Chukor Partridges, (v) an American Green-backed Bittern (*Butorides atricapillus*), awaiting treatment for an injured beak.

(To be continued.)

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## CORRESPONDENCE

### RARE FINCHES

SIR,—In the January number of the Magazine Miss Chawner mentions having seen in Germany an example of the South American small Grosbeak, *Neorhynchus nasesus*, which was supposed to be a first importation.

I do not think this is quite the case, for last July (1930), Captain Hammond showed me a bird which he had had for a year, and which had been identified at the British Museum as a *Neorhynchus*, probably *nasesus* (or should it be *masesus* ?), though it did not quite agree with that or with the other species, *devronis*, and might be an undescribed one. It was a brown bird, rather resembling in looks and bill a small hen *Guiraca*; I believe this bird is still alive.

At the same time and place I saw another very rare Finch, a *Sporophila ruficollis* Cab., which entirely unknown alive, is, I believe, only represented by two or three skins anywhere. This was also identified at the Museum and is an ochre-brown bird, with a grey and black mingled front, about the size and shape of the average *Sporophila*.

Perhaps their owner may be able to give us further details about these two extremely rare little seed-eaters.

E. HOPKINSON.

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### BREEDING QUAIL-FINCHES IN AUSTRALIA

SIR,—I have been looking out for records of breeding the Quail-finch in different parts, and found none in Australia. If there is such a record, I would be pleased to hear of it.

Some five years ago I had one pair of Quail-finches, and was most desirous of breeding them on account of their beauty and curious walking habits, being ground birds and only occasionally perching. So I set out to try breeding from these two for further study; they nested twice with only two eggs to each clutch (eggs white, almost round, but were all infertile); and then, to my great disappointment, one morning I found the hen dead in the nest. I had been trying ever since to procure this species again, but it was only last November that I obtained a few pairs, and once more had hopes of their breeding. I built more aviaries, planting fox-tail grass, and in the shelter placed a dead privet tree for a pair of Cordon Bleus to nest in. These reared two fully-fledged chicks, but one since died.

This old privet tree has a large bunched root, and I noted on 16th February male and female Quail-finch in this aviary carrying dried grass to the privet root, and they finally finished a double-room domed nest, lined with white feathers, and the hen laid three eggs by 3rd March. Incubation commenced in earnest, both birds doing their equal share in nest-building and incubation, but the male would sit on guard in the front porch each night. On 17th March I heard feeding

squeaks of the male, and with the aid of a mirror on 25th March I could see three slatey coloured chicks with three phosphorescent warts on each side of their beaks, which I believe are used for night feeding, as I often heard the feeding going on at night time. But on 5th April only two could I find outside, and none inside the nest. However, I found the other apparently drowned in the water vessel, but after carrying it in my hand for ten or fifteen minutes, thinking of a burial service or a museum specimen, it started to grate its beak. I rushed it into the kitchen, placing it in some warm wool, and giving drops of warm Bovril for an hour or two. I must say the parents were searching high and low for their lost chick during its absence. It has been mentioned to me that young Quail-finches leave the nest at two days old, similar to the ordinary Quail, but such is not the case.

At normal times the Quail-finches are fed on Hungarian and red millet, but on hearing the young being fed, I dug up all the ant eggs and chopped all the spiders, crickets, and grasshoppers I could find, and they were readily looked for. I had run out of mealworms. I am glad to say the three youngsters are now healthy and fully-grown, but have not quite attained adult plumage. They are now nearly six weeks old, and clearly show sexual distinction, being one cock and two hens.

In between the New Year and the present date I have bred four Pectoral Finches, three Olive Finches, one Cordon Bleu, and another Quail-finch from the same parents out of a two-eggs clutch. I believe two eggs to be the normal clutch, as in the case of the Crimson-crested Finches, which I found would lay two eggs only on every occasion for three years.

Trusting I will hear of similar luck from other members.

G. PACKER.

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#### MONSIEUR DELACOUR'S COLLECTION

SIR,—Perhaps it may interest other members of the Avicultural Society to know that if they are in France they can visit Monsieur Delacour's collection of birds and other animals at the Château de

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#### MONSIEUR DELACOUR'S COLLECTION

SIR,—Perhaps it may interest other members of the Avicultural Society to know that if they are in France they can visit Monsieur Delacour's collection of birds and other animals at the Château de

Clères any day of the week from 2 o'clock. Not knowing this, I had bothered him with a letter asking permission, to which he had kindly replied, saying that if I could postpone my visit to after a certain date, he would take me round himself.

Unfortunately I had only one day to spare, and that was a very wet Sunday, with a blustery wind, either the day or just about the day of the earthquake in England.

If Clères is approached by road from Rouen, there is no difficulty in finding the Château; the neat hedge on the high road does not conceal the wire-netting. I arrived there about 1.30, and, as the car drew up, a man in a blue uniform came forward. I inquired if I could go in, and he replied not very intelligibly that I could not till 2 o'clock. "But I am in a great hurry," I explained, "and I have a letter from Monsieur Delacour in my pocket giving me permission to come." He smiled at me affably, but made no attempt to help me, and I was beginning to wonder if such a stupid-looking being was of much use as a keeper, when my chauffeur, who had meanwhile gone to the lodge-keeper's lodge, returned to say I might go in at once. So, thinking he would like to see the Park too, we started off unaccompanied, and beginning with the magnificent collection of wild Duck that are separated off from each other in a river that flows through the grounds, were just making our way across to see some Wallabies when a whistle made me pull up. "Did you hear that?" I asked the chauffeur. "Perhaps someone is whistling to us." "More likely one of the monkeys," but raising my umbrella I saw a man hurrying towards us. "Have you got entrance tickets?" he asked. "No," I replied, "I didn't know there were any. The man in uniform at the gate merely told me that I couldn't come in till 2 p.m., but as we are in a hurry to get back to Paris, the concierge kindly let us in. Monsieur Delacour wrote to say I might come when I liked."

"There is no man in uniform at the gate."

"Yes, a blue uniform."

"That is one of the inmates from the asile in the neighbourhood."

I readily believed him, remembering the man's expression!

My interlocuter, who had first spoken to me in French, turned out to be an Englishman, Mr. Fooks, in charge of Monsieur Delacour's

collection. He very kindly accompanied us, and showed me the magnificent aviaries, the collection of tropical birds in the greenhouse, etc., and we were further accompanied most of the way by a pair of Gibbon monkeys who leapt from tree to tree, and then made a frieze of themselves against the sky on the top of a wall.

I am too ignorant to say anything of Monsieur Delacour's collection, and readers of THE AVICULTURAL MAGAZINE have already had opportunities of reading about it. I was especially interested to see some Parrots, a lovely pair of black Cockatoos, three or four Macaws of different kinds, and an African Grey, all sitting out in the rain, soaked through, and to hear that they were left out like that day and night till the autumn, when they were put in an unheated room. I don't believe the climate at Clères differs much from the English climate; anyhow, as I live in the South of France, I am going to try the experiment with my many Parrots, for whom heat has always been provided in the winter. It can be uncommonly cold on the Riviera, but, of course, nothing comparable to Clères in the Seine Inférieure. Altogether I spent a very happy couple of hours at Clères under Mr. Fooks' kind guidance, and, to complete my joy, one of the Black Cockatoos sat on my arm, so that I could see it at close quarters. What is happiness, the cynic may ask? Well—when you have wanted to see something very badly, and never have, and then suddenly do—I think you experience the real thing. I am sure I did.

M. R. WESTMACOTT.

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#### A REMARKABLE HYBRID

SIR,—Miss Robinson of Camberley is to be greatly congratulated. She has bred what I believe to be an absolutely new hybrid, that is, a Bronze Mannikin  $\times$  St. Helena Waxbill.

I have been to see it, and feel sure that it is this cross. The mother (the Waxbill) is sitting again on four eggs, but the father still keeps his eye on his infant, though that is now strong on the wing and well able to feed and look after himself. The father has been four years with

Miss Robinson, an odd bird which has never had a mate till his choice of the Waxbill this season; the Waxbill has been there more than a year. As there are other Waxbills of the same sort there, why on earth did she select the Mannikin? Two young were hatched, but only the one left the nest.

In shape and length of tail the young bird resembles the Waxbill, except in its stouter build, this apparently being the only feature it has inherited from the father; general colour earthy-brown, paler below and with an ochreous flush over the centre of the belly, forehead red-brown and a small red eye-streak a more orange-brown. A small white nest-pimple at angle of bill still shows.

The above is a rough description, but the breeder promises a full account of the event for the Magazine, and will, I expect, give a better description.

A Bicheno Finch has also been reared in the same aviary, and another pair of St. Helenas have eggs there.

The Waxbills are the smaller, rather darker birds which now come in. Are they the true *E. a. astrild* from South Africa?

E. HOPKINSON.

A postscript to my note of yesterday. There is a cock Violet-eared Waxbill, I think, in Miss Robinson's aviary. This may be the father of the hybrid, whose looks at any rate certainly would suggest this father rather than a Mannikin. The latter may have merely taken a sort of kind-uncle interest in the youngster, as bachelor uncles do.

E. HOPKINSON.

The owner of this interesting bird writes as follows:—

A Bronze Mannikin cock which I purchased four years back in a small mixed consignment of birds from a breeder who was giving up his aviary, has fully compensated me for the patience I have exercised in his favour. Many times had I looked at the quaint little solitary fellow who had no mate of his own blood and kin and threatened to dispose of him. Last year he courted a Grassfinch hen, and together they set up housekeeping, building a nest in which she deposited four eggs, all to no purpose however.

This season he transferred his affections to a St. Helena Waxbill hen, and so successful has been this alliance that I have now in my aviary, flying strongly, my first hybrid—Bronze Mannikin  $\times$  St. Helena Waxbill. I am told on good authority that this is probably the first time that this cross has been bred and any notes I can give will make interesting reading.

A clutch of four eggs were laid, all of which were fertile. Incubation ceased in the case of two, judging by their appearance at the end of a week. The remaining two hatched 7th June, but, alas! one died just on the point of flying, the other chick proved very strong, and both the parents fed it assiduously; if anything the Mannikin cock was the more persistent feeder, and kept constant guard by the nest, making short work of any intruders.

The young bird, so far, resembles mostly the St. Helena: plumage uniform mouse brown (above darker, below clearer yellowish brown washed rose colour), tail black-brown, streak from beak orange (beak is the shape of the Mannikin), forehead red-brown.

The parents have gone to nest again and are now sitting on another clutch of eggs, so my hopes rise high that the second adventure will be even more successful than the first.

I have reared this season the Bicheno Finch, and the pair are again sitting on four eggs. I have also a nest full of St. Helena's about ten days old; I am not sure yet how many.

The other birds included in my small collection are Diamond Sparrows, Grassfinches, Green Avadavats, Violet-eared Waxbills, etc.

Last season I reared a number of Zebra Finches, and any success I have had is due to the ever-ready help and advice I have always received from the members of the Avicultural Society, some of whom have gone to endless trouble to put me on the right road in this interesting and most fascinating hobby.

ELSIE ROBINSON.

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## CROSSOPTILONS BREEDING AT ONE YEAR OLD

SIR,—It might prove of interest to our readers of the Magazine to learn of my Brown-eared Manchurian (Crossoptilon) Pheasants breeding at the age of one year. These birds, ten of them, were hatched in May, 1930, and were allowed to run together throughout the winter and spring of this year, and in passing through their pens on 20th April I was surprised to find an egg in this pen. Two days later another hen commenced laying, and a day later a third hen laid. Any information I had been able to acquire led me to believe that it was not unusual for year-old hens of this species to lay, but the eggs never proved fertile. As sufficient eggs were collected to make up a setting they were given to a Bantam hen, and to my surprise every egg hatched. The eggs from the young hens continued highly fertile and each fertile egg hatched. The last egg was laid on 11th June, although the parent stock continued laying until 3rd July.

It was noticeable, however, that the last two hatches did not contain fertile eggs. This might have been caused by the removal and sale of two pairs of these birds during the period of laying. The eggs from the older birds continued to be fertile, although not of the high percentage of fertility of the younger ones, throughout the season.

LAWRENCE C. HASINGER.

INDIANA, PENNSYLVANIA.

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## AVICULTURAL NOTES

BY THE EDITOR

Dr. Hopkinson's Selective Index to the past numbers of the AVICULTURAL MAGAZINE is in the press, and will be ready soon. It will be a most useful volume to all those who keep birds, for they will be able at once to refer to former references to any particular species. The price has been fixed as low as possible, namely at 10s., at which it is hoped our members will not be slow in ordering copies and so help to pay off the somewhat heavy expense of printing the volume.

I have referred on more than one occasion to the Blue specimen of the Masked Lovebird which the Zoological Society possesses and to our hopes of reproducing this colour variety, and now I am able to record the successful rearing of young Blue birds from his progeny. So far this year there have been two nests from two pairs of the Blue-bred birds of the first generation, the first of which produced two Blues and one Green, the second four Green and one Blue. For some obscure reason the parents in both cases appear to have plucked the feathers from the young birds while in the nest; and so we took the youngsters and my daughter hand-reared them, with the result that we have those of the first nest now practically adult and almost fully feathered, and those of the second nest coming on well.

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I cannot yet fathom this plucking in the nest by these Lovebirds, and should be glad of the views of our members, especially of those who have bred *Agapornis personata*. One finds a nest full of fat youngsters nearly ready to shift for themselves, with fully feathered heads but practically naked bodies. In one case the wing-feathers of the eldest youngsters were complete, and on inspection of the nest two flew out, though featherless except for their heads and wings. These, having left the nest, are now feathering. The other three, of which one is blue, we took for hand-rearing, and they are now well covered.

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Messrs. Boosey and Brookshank will have the sympathy of the members in their loss of an aviary-full of Gouldian Finches at the hands of a burglar or burglars, especially as several nests of young birds were destroyed in the process. Otherwise I hear that the Keston Foreign Bird Farm has had a most successful season.

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It is not easy to breed birds successfully in a public institution such as the Zoological Gardens. It is not that the birds mind the public, so long as they keep the right side of the wire partition and do not

insist upon giving monkey nuts to insectivorous birds, and suchlike foolish practices, but the trouble is that the stock is always far too great for the very limited number of aviaries and overcrowding is fatal to prospects of breeding. Nevertheless, we have to record one notable success in the hatching and rearing of two Illiger's Macaws (*Ara maracana*) in one of the new outside aviaries of the Parrot House, which Dr. Hopkinson will kindly note for the next edition of his *Records*. In another of these aviaries two young Rock Peplars have been reared.

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A fine brood of Malabar Parrakeets has been reared in Mr. Ezra's aviaries, where there is also a brood of three young Queen Alexandras in the nest. Young have also been reared from the Blue cock Alexandrine and from a pair of Barrabands.

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## A REMINDER

There are quite a number of members who have forgotten to pay their subscription for the current year, which became due on the 1st January. It is hardly necessary to remind our members that it is impossible to keep the Magazine running if subscriptions are not paid, and it should not be necessary for the Secretary to have to send reminders to individual members. We hope that all who have not yet sent in their subscriptions will do so promptly and, in order to save themselves trouble in future, we would strongly recommend the filling up of a Banker's Order, which can be obtained on application to the Honorary Secretary.

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Printed by G. & J. Spedan Lewis, Ltd., London.

*Edward's Manakin* ♂.  
(*Chiromachæris manacus*)  
*Superb Manakin* ♂♀.  
(*Chiroxiphia pareola*)

From living specimens presented to the Zoological Society by J. Spedan Lewis.



Edward's Manakin ♂  
(*Chromophaea manakini*)  
Superb Manakin ♀♀  
(*Chiroxipha parvula*)

These young specimens presented to the Zoological Society by Captain ...

# THE AVICULTURAL MAGAZINE

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AVICULTURAL SOCIETY

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## TWO RARE MANAKINS

The Manakins, contained in the family Pipridæ, are small birds, generally more or less brilliantly coloured in the male sex, which inhabit the tropical forests of South America. They feed principally upon berries and fruits. There are some fourteen genera and about seventy species.

The Manakins are little known to aviculturists, and the arrival, in August, 1929, of some five or six examples was a matter of considerable interest. These were purchased by Mr. Spedan Lewis and presented to the Zoological Society. They proved to belong to the two species depicted in the accompanying plate, though at the time all were in immature plumage of a greenish colour. All but three died within a few weeks of their arrival, but one pair of *Chiroziphia pavoletta* and a cock *Chromocharis manacus* appeared to thrive though the hen bird did not survive for many months. The two cock birds, however, moulted well and assumed their full adult plumage as depicted in the plate, which is drawn from life. Edward's Manakin was one of the smartest little birds imaginable; with tight plumage and extremely rapid movements, it was a most striking bird. It died for no apparent reason when to all appearances in most perfect condition twenty months after its arrival. The cock Superb, now two years in the Zoological Gardens, is alive and well as I write.

These are birds of the damp tropical jungles, Edward's Manakin being found in Guiana, Amazonia, Venezuela, Colombia, Ecuador, and Peru, while the countries occupied by the Superb Manakin are given as Guiana, Lower Amazonia, Ecuador, Brazil, and Bolivia.

D. S-S.

## THE NESTING OF THE HALMAHERA HANGING PARROT (*LORICULUS AMABILIS*)

By The MARQUESS OF TAVISTOCK

Some years ago a collector, Mr. Mayer if I remember rightly, brought over a few pairs of this delightful little bird, and sent me a couple on approval. I was rather "off" Hanging Parrots at the time, owing to a series of discouraging losses from kidney trouble due, as I eventually discovered, entirely to the giving of Nestle's milk in their syrup, instead of Horlicks; but I was so taken by the fascinating mites, which were in excellent condition, that I decided to give them a trial. The Halmahera is a very small bird; in fact, the tiniest Parrot I have seen alive. The cock is green with a red rump, a neat red cap, a touch of orange-red at the wing butts, and a red spot on the throat. The hen lacks the red cap, and the spot on her throat is very minute. The hen has a dark eye, but the cock's iris is whitish. Both sexes have very small black beaks, legs and feet the colour of the centre of a carrot, and the under surface of the wing- and tail-feathers the pretty pale blue shade which is almost universal throughout the genus.

I kept the pair in a large cage for a time, and then turned them into a large outdoor aviary with the shelter well heated during the cold months. In 1929-30 they spent a lot of time in the flight, even on cold days, but last winter they hardly left the shelter, although the winter on the whole was milder. The birds are fed on Sunbird mixture—honey, Mellin's food, and Horlicks, together with sweet grapes, and in summer they seem fond of the pollen from flowering grass heads.

They have a weak, sibilant cry quite inaudible at any distance, and do not, in the day-time at any rate, hang upside down as the Blue-crowned is fond of doing.

Although my pair had come over in the same small cage, they long displayed the most profound aversion to one another, and I gave up all hopes of their ever attempting to breed. It seemed a case of mutual incompatibility of temperament of the worst kind. For more than two years the hen would not allow the cock to come anywhere near her, even when he was in breeding condition; then he turned the

tables upon her, and for nearly two years would not allow *her* to come anywhere near *him*! It was only this spring that I began to see them sitting within a few feet of each other, and refraining from hostile demonstrations. A miniature grandfather-clock nest was put up in the outside flight, the "head" of the box down to egg-level being covered outside and inside with natural bark, an arrangement which exercises a marvellous fascination for nearly all members of the Parrot tribe. In June the cock began to feed the hen and in July she started to carry grass into the box, tucking a load into the feathers of her rump and flanks, after the fashion of a Madagascar Lovebird. (Strange that two groups of little Parrots so utterly dissimilar in structure and habits as the *Loriculi* and *Agapornis* should have evolved some species which have adopted this curious labour-saving habit when collecting nest-lining.)

Three eggs were laid and the hen sat steadily for nearly three weeks, being fed at the nest by her mate with much devotion. He had a habit of shaking, or rather vibrating, his tail very rapidly when he was busy inspecting the welfare of his home. The ending was disappointing. One afternoon I noticed the hen off longer than she should be, and on examining the eggs, found them to be infertile.

Halmaheras, in common with all other Hanging Parrots I have kept, have one slight drawback. Their claws need regular cutting and often get overgrown. The operation is difficult and tiresome for all concerned. The Hanging Parrot flies on to the wire-netting, gets tangled up, and as soon as you take it in your hand, seizes the mesh in a vice-like grip. Eight little toes and eight overgrown nails are wound round the wire, apparently two or three times, and as soon as, with infinite trouble, you have disengaged one claw, another, previously unfixd, again catches hold! All the time you are deeply concerned lest you should pull the bird's leg too hard and hurt him, and he is deeply concerned with hurting you as much as possible with his small but sharp beak!

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## THE VALUE OF A BREAD AND MILK DIET

By H. MOORE, F.Z.S.

Just a few notes upon a bread and milk diet. Upon the summit of the Tadworth plateau very few birds do really well, and I do not except our native species. For instance, Goldfinches and Bullfinches, both British and Russian, do poorly here in outdoor aviaries, at least they do with me. No matter how they are fed they appear to lose colour a week or two after arrival here, and many do not survive for long. I have now ceased to attempt acclimatizing these species. In the garden at liberty Starlings, Chaffinches, Thrushes, Tits, and Blackbirds do well, but the other species I am sure are becoming more rare each season. Eight years ago there were a dozen Nightingales in full song within sound of my garden. One used to pirouette and sauce me each morning early, using my garden fence as his platform. Unfortunately all have now disappeared, and for three years no Nightingale has sung within hearing of my premises—the pity of it.

Chaffinches and Starlings are increasing enormously in this district, but certain birds, at one time extremely numerous, appear to be dying out. There are Linnets, but not flocks of them as there were a few years ago. The same with Red-polls and Greenfinches. Wagtails and Robins are getting scarce, and one seldom sees the Wren and the Long-tailed Tit these days. Some local enthusiasts blame the Little Owl for this shortage of bird life, but then why and how do the Starlings and the Chaffinches escape the depredations of this night-prowling alien?

For many years I completely failed with Gouldians outdoors here. This year I have managed to acclimatize (or partially) two pairs. Both have built nests, but I have seen or heard of no young as yet. They are nesting, it is true, but they do not appear quite happy. I feel somewhat guilty each time I enter their aviary. I have allowed them plenty of space, a large bath, and heaps of good food. They are very conservative, however, and I have never caught them in the act of bathing. They eat well, but millet and grass in seed, with a little green plantain appears to be all they choose from a varied menu supplied them. Zebra Finches afford me the same anxiety and trouble. This season, however, I have managed to rear two youngsters which are

“now on the perch” with their parents. This gives me hopes of eventual success with the Gouldians.

There is one class of bird which does really well up here in these clouds. Strangely enough they are birds from tropical environments. I refer to all the various species of Love-birds. Winter and summer they do extraordinarily well, keeping their plumage, their colour, their vitality and their general health in amazing manner considering the vast difference of climate they are asked to withstand. Now I am going to give Love-bird enthusiasts a hint. The most valuable addition to the ordinary diet for Love-birds is bread and milk. I know I am going to bring down the wrath of many far more expert and knowledgeable aviculturists upon my head, but truth is truth, and what science most needs and demands is truth based upon experiment, investigation, and practice. I have had Love-birds outside here upon this plateau amid arctic conditions. When my Masked Blackcheek hybrids were hatched there was deep snow covering the entire aviary, and snow even upon the roof of their nest-box. There were five nestlings, and each one reached maturity, as did a further nest of four hatched some time later in the season. One of these hybrids is now at the Natural History Section of the British Museum. I notice that the authorities there name the Masked Love-bird as the Yellow Collared Love-bird. Here is the fact then, all my young Love-birds and also Budgerigars are reared upon bread and milk in addition to their usual seed diet, and I never lose one except by accident. Since discovering the value of bread and milk no young have died in the nest with me; all have been reared. Even in this cold and damp climate I use no cod-liver oil or other addition to diet. Just seed and bread and milk. My Love-birds and Budgerigars will leave millet on branch for bread and milk. Earlier in this letter I reported the arrival of two young Zebra Finches. Both have been plentifully supplied with bread and milk by their parents. What made me try this unusual diet? The fact that I had brought delicate Soft-bills to England from South America and the West Indies upon a diet of bread and milk and fruit. They kept so well on this diet that I was impressed by the diet and as an experiment tried it out upon my Lovebirds and Budgerigars with huge success. I have not published my experience sooner because I wanted to give it two or

three years' further trial. That trial is now complete to my satisfaction. At the present time I have young Peach-faced, Fischer's, Black-cheeked and Masked Love-birds all reared upon bread and milk, and a rare picture they look, as full of health and vitality as newly caught Smelts.

Possibly this diet is suitable to the unsatisfactory climatic conditions appertaining here at Tadworth, Surrey, but would not be found so valuable elsewhere. Upon that point I can offer no advice; my experiments have been carried out at Tadworth and nowhere else. However, no one will ever dissuade me as to the extreme value of a bread and milk diet to any species of birds wise enough to eat it.

[We should like to ask Mr. Moore if he has used fresh milk or one of the brands of preserved or tinned milk? The former, while probably the most valuable, is very apt to turn sour in warm weather, with perhaps disastrous results.—Ed.]

## THE BIRDS AT PAIGNTON ZOO

By DR. E. HOPKINSON, C.M.G., D.S.O.

(Continued from Page 227.)

### (10) LATEST AVIARIES

These combine perfect view for visitors and yet plenty of privacy for breeding birds. The inhabitants of the ten divisions are as follows:—

1. Two cock Ashy Doves and a Pintail Nonpareil with a hen Gouldian Finch for mate.
2. A pair of Red-winged Ground-doves (*Chamepelia rufipennis*), and a pair of Gouldians.
3. A pair of Passerine Doves and a cock Gouldian paired with a hen Masked Grassfinch.
4. Three or four Bengalese, and a male Senegal Dove paired with a hen white Barbary.
5. A cock Indian Stock-dove (*eversmanni*) and a hen white Barbary, a Painted Quail cock with a hen Rain Quail, and a pair of Cherry Finches (*Aidemosyne modesta*).
6. A pair of Pigmy Ground-doves (*Ch. minuta*) and a pair of the Borneo *Munia fuscans*, a first arrival about eighteen months ago.

7. A pair of Plumed Ground-doves, a white Barbary mated with a hen Indian Stock-dove, and three pairs of Zebra Finches.

8. Two cock *Sturnænas* and a cock Red-headed Finch.

9 Three Diamond and one Zebra Dove, a cock Pintail Nonpareil and a hen Blue-headed Parrot Finch (*trichroa*).

10. A *Sturnænas* cock paired with a hen Red Mountain Dove, and a pair of White Java Sparrows.

#### (11) SECRETARY-BIRD BLOCK

A sort of antechamber contains two African Scops Owls (*leucotis*), the male recovering from an accident, a Black-headed Gull also injured, which, when picked up unable to fly near here, was found to have been ringed abroad two years ago. Three Cape Blue Gallinules (*P. madagascariensis*) complete the tally.

The big central enclosure and shelter is given up to the Secretary Birds (three), still very nervy birds, though they have been here a year or more, and the seven aviaries adjoining are occupied as follows:—

(i) Six Indian Stock-doves and a pair of Vulturine Guinea-fowl awaiting a place for turning out.

(ii) Two Curassows, a *Mitua salvini* hen, which is laying, with a ? cock *M. mitu*; and six Mynas: one Bank (*ginginianus*), two *tristis*, two *fuscus*, and one *Sturnopastor contra*.

(iii) A pair of *Columba arquatrix*, one *Alectoris melanocephalus* and two Chukor hybrids, one Pagoda Myna hen, one *Spodiopsar cineraceus* (? a cock), and two Sacred Kingfishers.

(iv) Four Glossy Starlings "probably *purpureus*; at any rate they are not *purpureiceps*", and two Long-tailed Glossy Starlings, one the ordinary *caudatus*, "which is now only rarely imported, the other a definitely blue bird, quite different from the green of *caudatus* and of robust build, which is probably *eytoni*." A cock Arabian Chukor (*melanocephalus*) and a hybrid hen also share this compartment.

(v) Another big Chukor and hybrid and two black and white Butcher-shrikes (*Cracticus cassicus*) "which are fine whistlers, better than a Piping Crow".

(vi) A pair of Vulturine Guinea-fowl and the Whistling Thrush (*Myophonus flavirostris*) brought by Mr. Frost last autumn, which is

every day and in every way growing more and more like the old Temminck's Whistling Thrush in another aviary here.

#### (12) THE FALCONRY

Contains a Greenland Falcon and a Goshawk.

#### (13) THE AVIARIES FACING BRICK-WORKS

No. 1 houses a cock Bluebonnet mated with (and very attentive to) a hen Redrump; they have a chick or chicks; No. 2 a Turquoise cock; No. 3 an Elegant cock with a Bluebonnet hen.

#### (14) THE AVIARIES OPPOSITE

No. 1 A pair of Piping Crows (*leuconota*).

No. 2 a pair of the blue and black "Beechey's Jays" which have been imported recently on several occasions. "What are they really?"

No. 3 a pair of Motmots, a Sun-bittern and an Indian Courser with a Yellow-winged Sugarbird in a cage.

No. 4 a pair of the "*purpureus*" Glossy Starlings, and a Burmese Roller with a Lort's Roller in a separate division. The last species was bred here in 1929, one young bird being reared. "It is impossible to keep Rollers together, even pairs, once they get fit, and even breeding pairs will kill one another, the hen usually being the killer, but occasionally it is the other way, but then only when the cock, after much forbearance, at last has to turn and to defend himself, when he may make a thorough job of it. This hunting of the cock away by the hen is probably only a natural instinct to ensure his not exercising his curiosity when she is off the nest, and perhaps being tempted to taste the eggs. The hen comes off with a rush and if the cock is anywhere near, goes for him like a tornado; in nature he would put a good distance between his raging partner and himself, but in an aviary often a fight must ensue. If nothing serious happens the hen will return to the nest and almost immediately call up her mate, who comes at once and feeds her; later on too he does his fair share or more in feeding the young."

No. 5. Three Royal Starlings and a pair of Black-headed Fruit-pigeons with a pair of Necklace Tanagers in a cage.

No. 6. A pair of Bartlett's Bleeding-heart Pigeons and a pair of Fairy Bluebirds.

No. 7. A pair of Twelve-wired Birds of Paradise.

No. 8. A pair of Red Birds of Paradise; the hen built a good cup-shaped nest of grass and ivy-stalks on the top of a nest box in the open flight, but the cock pulled this to pieces in a day or two; she had, however, started building again before I left, this time in the second flight into which the cock seldom comes.

No. 9. The flight has been given up to the Paradise Birds; inside are a Princess of Wales Parrakeet, an elderly cock with a Barraband hen for mate, a Pagoda and a Malabar Myna, and one of the new Ground-thrushes (? *interpres*) from New Guinea, a most attractive bird now that it is in good condition. The sub-divisions contain a hen Dayal and a Crested Myna (*tristis*).

#### (15) THE OPEN AVIARIES

Six compartments containing (i) a Carrion Crow, a Hoodie and an all-black Muscovy Drake; (ii) a Monal cock; (iii) two pairs of Mandarin Ducks, a Cayenne Rail (*Aramides cajanea*), and a Tiger-bittern; (iv) empty; (v) and (vi) pairs of Monal. "It is here that the Monals have been breeding the last two or three years."

#### (16) THE NEAR-BY PADDOCKS

(i) A number of this year's hybrid Ducks, mostly from Messrs. Ezra and Delacour; (ii) two Australian Cranes; (iii) one Common Crane, one White-necked, two Siberian and two Crowned Cranes (the black-necked); (iv) three Kagus, all cocks, and some Screamers.

#### (17) "THE BIRD-ROOM"

Cage 1, a pair of Hanging Parrakeets. 2, a Blue-winged Pitta. 3, 4, 18, 24, and 25, five white Zebra Finches, "which are so spiteful that they have to be kept singly." 5, one Tricolour Mannikin, two or three Zebra Finches, one Long-tailed Grassfinch, one Heck's Grassfinch and one Yellow-rumped Finch (*flavipygma*). 6, two or three cock Cordon-Bleus and one hen, two pairs of Blue-breasted Waxbills, and one hen Violet-eared. 7, two Rufous-backed Mannikins, one Lavender Finch, three St. Helena Waxbills "of the smaller race" (? *rubriventris*)

a pair of Spotted Firefinches (*rufopicta*), which look to me a rather different red (lighter and pinker) than that of the birds found in Gambia; the last bird is a recently imported Fire Finch of some sort with brick-red upper front parts and apparently a black or blackish belly, but as he is very rough still, one cannot be certain. I think it is *rhodoparia*. 8, four Chestnut-breasted Finches, one Long-tailed Grassfinch, one Heck's Longtail, two *Munia fuscans*, and two of the very rarely seen *M. leucogastroides*. 9, four Gouldians, two Bichenos and a hen Pectoral Finch. 10, one Hecki- $\times$ -Spicebird hybrid, two Chestnut- $\times$ -Bengalee hybrids, one of which "is a good singer", and two Tricolour Mannikin- $\times$ -Bengalee hybrids. 11, the giant all-blue Grosbeak (*Cyanocompsa* ? sp.), a South American bird, blue all over and at least a size larger than the other imported *Cyanocompsa*. 12, a cock North American Blue Grosbeak. 13, a Red-headed Finch cock with a hen White Java Sparrow. 14, a cock Blue-winged Sugar-bird. 15, a White Zebra Finch cock with a normal hen. 16, a Pagoda- $\times$ -Malabar Myna hybrid, "one of those bred two years ago". 17, an Ani, tailless, "having been badly knocked about by some Jays, and here to recuperate." 19, a hen Blue Rock-thrush. 20, a cock Ornate Tanager, "the father of the next." 21, the hybrid Tanager, *ornata*- $\times$ -*episcopus*, "bred here two years ago". 22, a Bell-bird not too well. 23, a cock Red Cardinal, one of the yellow-marked variety or race. 26, a cock European Rock-thrush. 27, a White-winged Parrakeet (*Brotogeris virens*). 28, a Blue-streaked Lory. 29, a Perfect Lorikeet. 30, a Racket-tail Parrot. 31, a *Brotogeris tuiipara*. 32, A *Psittinus* hen, head a sort of puce colour. 33, a hen Ruppell's Parrot, the blue and yellow very brilliant. 34, a Moutache Parrakeet, a feather-eater. 35, a long wall-cage contains a White-crowned Starling and a Cuckoo-pigeon (*Macropygia* ? sp.). Flying loose is a Wattled Starling, which lost an eye in a fight with a Troupial, "the wattles develop anew every year."

#### (18) THE BIRD-ROOM PASSAGES

Cage 1, a feather-eating Scarlet Macaw. 2, a pair of Olive Finches, one Bicheno Finch and a cock Zebra. 3 and 4, five Lovebird hybrids. 5, a white Zebra Finch. 6, two Crimson Finches, young cocks or

possibly hens. 7, a cock Red-headed Gouldian. 8, a pair Blackcheek Fischer's Lovebird hybrids. 9, a cinnamon Blackbird, rough and recent. 10, an unidentified Babbler from China recently received with another, which is in one of the outside aviaries.

*Cages beyond Bird-room.*—1 and 2, a mixed lot of common Waxbills, etc., recently presented. Most show the darkening of plumage so often found in long-caged birds of this kind, but which is hardly known here. They include Avadavats, Zebra and Orange-cheek Waxbills, Cutthroats, one hen Red-headed Finch, Green and Grey Singing Finches, and an ordinary Canary. 3 and 5, Abyssinian Barbets. 4, a young cock Blue Grosbeak (*cyanea*), a Cape- $\times$ -House Sparrow hybrid and a brown Dove *Leptoptila* ? sp. (is it *reichenbachii* ?). 6, a Ringneck Parrakeet. 7, a big green Barbet, a *Thereiceryx*. 8, a Yellow-headed Marsh-bird, *Agelaius icterocephalus*, a rare and here specially interesting exhibit, as there is an example of the much larger but more or less similarly marked *Xanthocephalus xanthocephalus* near-by to compare with; I had always confused these two birds in my mind. 9, a Koel in the dark-green juvenile plumage. 10, two Magpie Mannikins only rarely seen nowadays; another pair are nesting in one of the smaller outside aviaries.

#### (19) HOMEWARD PASSAGES

A series of large wall-cages tenanted as follows: Nos. 1 and 2, a pair of Fischer- $\times$ -Peachface Lovebird hybrids and another pair of some other cross. 3, one St. Helena Seed-eater, one Yellow Sparrow, one masked Grassfinch, and one Pectoral Finch. 4, a Lazuline Grosbeak, *C. parrellina*, one of the small lot recently imported by Chapman, one cock Gouldian, and a brown *Icterus* not yet identified (? is it *pyrrhopterus*). 5, a Nonpareil cock, two Spice-birds, two cock Zebra Finches, and a White Java Sparrow. 6, a very noisy, green Red-fronted Parrot of sorts, rough from feather-eating. "It is a Wagler's Conure." 7, one *Conurus leucophthalmus*. 8, a Ring-necked Parrakeet. 9, two Jendaya Conures. 10, a Red-masked Conure. 11, a cock Yellow Weaver (? the Half-masked); it has a black mask and the front half of the crown also black with a dash of rufous behind that. 12, Lovebird hybrids. 13, Firefinches, etc., among them a very dark (cage-blackened)

Avadavat and a similar Zebra Waxbill. 14, one Blue Grosbeak cock (*cyanea*), a cock Greenfinch, "which has been here for years," a cock Saffron Finch, and a Giant Whydah just showing colour. 15, a cock Yellow-backed Whydah also coming into colour; this is one of my Gambian birds which must have been here six years or more, and there are two more, a pair, in one of the big aviaries. About 1925 I brought a good many home, and all but one went to different collections. Are any more of these still alive? The one I kept died soon, but a single cock I brought home many years before lived in perfect condition to be 11 years old. This compartment also contains a cock Black Tanager and a *Cinnamopteryx* Weaver, probably a young cock. Nos. 16 to 18, Budgerigars. 19, a pair of Pileated Finches, a hen Nonpareil, a very large bird, and a cock Chaffinch. 20, Lovebird hybrids. 21 to 23 (the compartments near the Squirrels) contain White Doves and Lovebird hybrids, and in the aviary opposite are two Guans, "probably *Penelope purpurascens*," a Cariama and a Cornish Chough, all tame. The number of really tame birds (tame at any rate with their owner) and the general steadiness of so many is another remarkable feature of the collection.

#### (20) THE PARROT PASSAGE-AVIARIES

1, a Blue and Buff Macaw. 2, a Spix. 3, empty. 4, a Molucca Cockatoo. 5, a Citron-crested with a Bare-eyed Cockatoo. 6, a pair of Greater Sulphur-crested Cockatoos.

The wall-cages opposite contain nine Fischer- $\times$ -Peachfaced Lovebird hybrids, one pair mated, a pair of Blackcheek- $\times$ -Masked hybrids, a Nyasa cock paired with a Peachface, and an Abyssinian with a Masked, while the last cage holds a Yellow-headed Marsh-bird, *X. xanthocephalus*, twice the size of the *Icterus icterocephalus* in the bird-room passage.

#### (21) THE "BOTHIE"

G.H.Q., whose C.S.O. is the apparently almost-always-on-duty Miss Salter, who with a staff of girls has charge of all the birds. This is the centre from which all parts of the Zoo can be reached with ease, and it is besides a combination of reception room for new arrivals and an observation ward for invalids. Its cages contain four *Pioni* (two *menstruus*, one *flavirostris*, and one *fuscus*) together and all very tame;

of *flavirostris* there are three different varieties in the whole collection. In the long cage opposite them is a Red-billed Hornbill, "but not *erythrorhynchus*, its beak-arch is too marked; it has been here a long time, and is believed to have come from Uganda." Two Tawny Owls, a very rufous Barn Owl caught here, and two Little Owls occupy three more cages, and two sick Conures (*hæmorrhous* and *rubrolarvatus*) the worse for wear or fighting complete the present total, though this varies almost from day to day with new arrivals and removals from other places. While I was there two new Coots of sorts and some Babblers, etc., came in on approval, but only the Coots were considered worthy of addition to the collection. "They appear to be *F. armillata* from South America."

#### (22) BOTHIE AVIARIES

The first contains two Wallace's Birds of Paradise still in moult, the second a Twelve-wired Bird of Paradise, a young cock coming into colour, the third a Red Lory, ? a hen, and a young Nicobar Pigeon, not paired for hybrids, but here because the first would have killed or been killed by her proposed mate next door, and the second recuperating after a bad knocking about by its parents and other birds in the aviary where it was born. In the fourth division is a Red Lory cock and a Black-capped hen.

We now enter the public part of the Zoo and will start with :—

#### (23) THE MACAW PASSAGE

Twelve very strongly-wired indoor aviaries with an inner smaller compartment in each (1a, etc.).

No. 1, a Red-Collared Lorikeet. 1a, a Cayenne Araçari.

No. 2, a Superb and a Beautiful Spree, "probably both cocks".  
2a, a rare Toucanet, *Andigena bailloni*.

No. 3, empty. No. 4, a Toco Toucan.

No. 5, a Western Black Cockatoo cock. 5a, a Diademed Amazon.

N.B.—"The only Amazon with feathered nostrils."

No. 6, another cock Black Cockatoo. 6a, a Blue-fronted Amazon.

No. 7, a Great Black Cockatoo. 7a, the unique *Pyrrhulopsis koroensis*.

No. 8, a pair of Illiger's Macaws. 8a, a cock Grand Eclectus, a good talker.

No. 9, an Orange-winged Amazon cock with a Bluefront hen. 9a, a Noble Macaw.

No. 10, a Scarlet Macaw (*macao*). 10a, a Severe Macaw. \*

No. 11, a Blue and Buff with a Military Macaw. 11a, a Spix's Macaw.

No. 12, pair of Hyacinthine Macaws who have an outside flight which looks almost lion-proof; being most sociable and interesting birds, they are great favourites with the visitors.

#### (24) THE BIG GREENHOUSE AVIARY WITH OUTSIDE FLIGHT

Two Pileated Herons, *Pileolus pileatus*. The display of this bird is most attractive; one of the birds is nearly always ready to show it off, contorting his neck, erecting his back-plumes, and blushing blue, accompanying the performance with groaning coos.

Two Boatbills (*Cancroma*), "one just beginning, after two years, to change from the brown into the grey plumage."

One White and one Scarlet Ibis, five or six Nicobar Pigeons, which breed here regularly and a Burmese Roller, "which has been here since 1923 or 1925; another, a hen, which came here at the same time and had a broken beak (only half an upper mandible), has only just died."

#### (25) THE EARLY AVIARIES

Nine large thickly-planted outside flights of varying size and heated inner chambers.

No. 1, the pair of Australian Thick-knees, which reared a young bird in 1929.

No. 2, two Red Cardinals, the cock, one of the bigger real North American birds which we hardly ever see nowadays, those imported being usually the smaller brighter red birds from Mexico, the hen probably one of the yellow marked variety; some Senegal Doves, a Cayenne Plover, seven years here and a very wild Tinamou, which has been here twelve and is still unidentified.

No. 3, the *Limnopardalis* Rails which were bred here.

No. 4, a lot of the "Brown Barbary Doves" (see Section 4) breeding

freely; "If mated brown to brown only an occasional normally coloured Barbary appears, if brown and normal, the progeny are about half and half, either brown or normal: no intermediates." This aviary also contains a Cayenne and an Ypecaha Rail.

No. 5, a pair of Yellow-backed Whydahs from Gambia (six years ago at least), the cock Pagoda and hen Malabar Myna which bred the hybrids, a *Porphyrolophus* Turaco, and a pair of Indigo Buntings, which have been here for years without ever attempting to nest, though this is the big heavily planted aviary in which the Roulrouls and Rails were bred.

No. 6, two Nutmeg Pigeons, two *Geotrygon chrysis*, a Lesser Grey Shrike and two Grey Mynas (*cineraceus*). Inner compartments house: (a) one Duyvenbode's Lory, recovering, like the two next, from his recent journey from the East; (b) one White-rumped Lory; (c) one Blue-streaked Lory; (d) a Queen of Bavaria Conure, a wicked feather-eater, and (e) an albino Piping Crow, "which is it, black-backed or white-?" How can one tell?

No. 7, two Goura Pigeons, *Coronata* and *Sclateri*, the young Australian Thick-knee bred here, now two years old, two *Gallirex chlorochlamys*, a pair of Superb Sprees, a hen Yellow-backed or Red-collared Whydah, probably the last, and some Saffron Finches, old and young, "though the parents usually kill the young, if not removed at once, directly they go to nest again." 7a, a cock Pigmy Falcon. 7b, one *Pyrhulopsis splendens*. 7c, various Budgies.

No. 8, one *Gymnoschizorhis* Turaco, *personata* or *leopoldi*, a pair of Bank Mynas and two Kagus. 8a, a Many-zoned Hawk. 8b, a pair of Pigmy Falcons, "which have often had eggs, but never hatched." 8c, a Red-masked Conure, rather rough.

No. 9, one Purple-Crested Turaco and one Donaldson's; four of the Pagoda- $\times$ -Malabar Mynas bred here and a hen Maroon Oriole. Inside are two compartments full of true green Budgies.

(To be concluded.)

THE NESTING OF THE HARRIS SPARROW  
(*ZONOTRICHIA GUERULA*)

By W. SHORE-BAILY

This rather large Sparrow, with its jet-black crown and throat, and its snowy underparts and yellow beak, is certainly one of the most handsome of the American Sparrow family, but what made it particularly interesting to me was that little or nothing was known of its nesting habits, and when my friend Professor Rowan, of the University of Alberta, told me that he might be able to send me a few birds, I was very naturally thrilled with the idea.

This bird nests in the far north, to the west of Hudson Bay, and as it is an early breeder the young have usually left the nest before the ice is broken up, and it is possible for white men to reach the country. The first nest was discovered by Seton on 5th August, 1907, and it contained three fully-fledged young. Up to the present year, no authentic eggs were known in collections, but I hear from Professor Rowan that some eggs have been taken this summer at Fort Churchill. In the winter these birds migrate to the Missouri Valley and Texas.

Early in November last year I received a letter from Professor Rowan saying that he was sending over half a dozen pairs of the Sparrows to be divided equally between the "Zoo" and myself. The birds duly arrived quite safely: they were then in their winter plumage, and I found it quite impossible to sex them, so had to hope that they would turn out to be true pairs. The weather, when they arrived, was rather inclement, although probably not nearly so bad as that they have to put up with in the States. Still, I thought it would be safer to winter them indoors. They stood the confinement very well, and when I turned them out in the middle of March, they were just beginning to get the rich black feathers on their heads and throats. Two of them died, I think from pneumonia, and the remainder showed no sign of interest in each other, skulking for the most part alone on the ground and beneath the low-growing shrubs, and when I went abroad for six weeks in May, I was still uncertain as to whether there was a true pair amongst them. On my return I found that they



NEST OF THE HARRIS SPARROW IN MR. SHORE-BAILY'S AVIARY.

were all in full breeding plumage, but there was still no sign of either of them having mated, and it was not until the second week in June that I noticed one of them carrying building material. The cock now began to sing steadily, and between whiles cleared one of the other birds, presumably another cock. I now started a hunt for the nest. Not knowing the birds' habits it was more than a week before I found it, and then only by chance, as I flushed the bird from my feet quite unexpectedly. Even then I could not find the nest, as the ground cover was very thick. Finally I found it by concealing myself, and watching the birds' return. The nest, which was made of nettle-roots and moss, lined with fine grass, was in a depression in the ground, the top of the nest being level with the ground, and entirely hidden from view by the growing vegetation. The eggs, four in number, were greenish-white, marked all over with fine reddish-brown spots and heavily zoned with the same colour. Readers will no doubt be horrified to hear that I promptly took the eggs and nest, but as these have certainly never been seen in Europe before, I was anxious to exhibit them at the next meeting of the British Ornithological Club. I quite expected that the birds would go to nest again pretty promptly, and I watched most carefully for signs of their doing so. As far as I could see nothing happened. The cock did not sing, and none of the four birds seemed to take interest in each other, spending most of their time hidden out of sight in the thick cover. Nevertheless, I spent a good deal of time hunting the ground for a nest without success, and finally, as two of the birds had gone out of colour, I gave up all hope of having another nest this year. However, the third week in July my son told me that he was convinced that two of the Sparrows had a nest, and from their demeanour I thought that he was right, as both birds were keeping up a continuous chirp, something like the "pink-pink" of our Chaffinch. We decided that he should go in and look, whilst I kept an eye on the birds from outside the aviary. He had not been in the aviary a minute before I noticed one of the birds fly out of the centre of a thick bush of box. On looking closely we found the nest in the middle of the densest part, about 4 feet from the ground. It contained two young ones, about four days' old, covered with jet-black down. The old birds appeared to be feeding the young principally upon spiders

and other crawling insects, but when they were about a week old I provided mealworms, which the old Sparrows readily took to them. They left the nest when about fourteen days' old, hiding themselves in the thick bushes, where they were fairly well protected from some very heavy rainstorms that we had at this time. When they were on the wing, I noticed that the cock bird was devoting himself entirely to the smaller of the two young ones, leaving the hen to look after the other. I have never known this to happen with aviary birds before, as I have always found both parents to feed the young ones indiscriminately. From the time that the young ones flew, the hen neglected to come for mealworms, feeding her young one on seed only. The cock, on the other hand, came regularly five or six times a day for his supply, almost taking them from my hand. The song of the cock is two short whistles, one an octave higher than the other, and is not very musical. I only heard it for about ten days, when they were first nesting.

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## AVICULTURAL NOTES

BY THE EDITOR

The Zoological Society's Park at Whipsnade is not well adapted to aviculture, but at the same time there are a few items of avicultural interest to be recorded. A pair of Quaker Parrakeets at liberty have taken up their abode close to the entrance to the park and built a beautiful nest of sticks amongst the ivy. No one has been up to investigate, but as one of the birds is nearly always in the nest while the other keeps guard near by we are looking forward to the appearance of young Quakers in due course.

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Wood Lawn Bird Sanctuary contains, among other introductions, some Brush Turkeys, and in the spring I was able to round these up, when I discovered that they consisted of four hens only, the cock originally placed there having evidently disappeared. Most fortunately just then Mr. Chapman imported a few of these birds, and I was able

to secure a good cock bird. He was pinioned and for a time confined in a wire enclosure close to the favourite haunt of the hens. He was then liberated and, within a few weeks, had formed a mighty mound, scraping up leaves and debris from many yards round. The hens have been seen to visit this mound, so we are in hopes of chicks, though the season is far advanced.

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A number of Chukor Partridges were obtained from India in the spring, and no sooner were they turned out than they commenced to lay eggs. These were collected and placed under small hens, with the result that some thirty have been reared.

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"Within the last twelve months," writes Mr. D. Dickison in the *Emu*, "a number of Chestnut-eared Finches (*Taniopygia castanotis*), apparently escaped from private aviaries, have established themselves in the vicinity of Gardiner's Creek, on the outskirts of the eastern suburbs of Melbourne. They congregate in small parties of from four to eight birds, and usually prefer the open field to the tea-tree scrub along the creek. One cold day last August I noticed a pair take shelter in an old nest in a furze bush, and on being disturbed they returned to the nest almost immediately. Another nest was found during February this year with the female sitting on five heavily-incubated eggs. Five young ones were hatched out a few days later, and after remaining in the nest for nearly a fortnight they began to make short flights into the neighbouring bushes, but would always return to the nest at night to roost."

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The common Partridge is not generally regarded as an aviary bird, but it becomes extremely tame and will readily breed and, providing a good supply of fresh ants' eggs can be obtained, there is not much difficulty in rearing the chicks. It will even breed in quite a small aviary as Mr. Laidlay has found, for he writes me: "I had a pair of Partridges, not very good ones, which I put in an aviary with some

odd cock Golden Pheasant—a very small place of about 12 by 12 feet. The hen laid fourteen eggs, and I see they have seven chicks. Six of the remaining eggs were ready to hatch, but the hen left the nest. Only one was clear. Do Partridges usually breed as readily as that ? ”

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## CORRESPONDENCE

### A HAND-REARED STARLING

SIR,—A week ago I picked up a fledgling Starling unable to fly, and carrying him home I put him in a small cage and tried to feed him. For the first day or so I had to open his beak and feeding him was most difficult. After the second day I could not find enough worms and grubs to satisfy him. When he was hungry he would call, and if he was not attended to *at once* he became very angry. He loved his cage, which I had changed for a larger one, and slept at night in a box filled with hay. He was always lazy in the morning and would not take his first worm until he had stretched his wings, flapped them violently and generally got over the cramped position of the night. After a week he could fly, and after his 9 o'clock feed he flew out of the open back door. I felt very sad after he had gone, and never thought to see him again, but at 1 o'clock I heard his call, and running out saw him on the shed roof by the back door. He literally hurled himself into my arms *yelling* for food and rubbing himself under my chin. He flew into his cage, ate a huge meal from my fingers, and then had a bath, sitting on my hand to preen himself. He was very tired, and stayed till the next morning, when he flew away again. but he comes back every hour and a half, and yells outside till I go and feed him, then off he goes into the trees. His flight is strong. He perches on my hand in the garden and is absolutely tame. Last night he slept out, but came in when called by name, "Jackie," by my bedroom window. He makes no attempt to feed himself ; yesterday I tried to teach him, but he would only look for grubs between my fingers and between my lips. I have given him alternate feeds of "Stamina," worms, and grubs, and raw mince. His baby fluff has almost disappeared, and the yellow shrunk

from his beak. It seems marvellous to me that he did not get lost when he went out the first time, and that he knew the house from the others standing near, as he had never been out before, and he flew straight out and away almost at once into high trees, disappearing completely.

CHRISTINE IRVINE.

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### PARROTS' NESTING SITES

SIR,—I have on several occasions noticed a rather interesting fact in connection with birds of the Parrot family, especially Cockatoos, which are normally very destructive to all wooden objects within their reach. They will not, at any time of year, seriously damage a nest they really like the look of as a possible breeding place. If a new nest is bitten to pieces almost as soon as it is put in, you may take it that, in the birds' opinion, a nest of that type is only fit for exercising beaks on, and you will have to try and devise something more natural and attractive to the Cockatoo mind. Some Parrot-like birds are much more sensible than their owners, and simply refuse to breed in a nest in which their instinct tells them the young would never flourish. Others, however, once they have been forced to use an unsuitable nest, will go on using it, losing their young, even when more wholesome accommodation is provided, the impulse to return to a familiar nesting site being stronger than the impulse to choose the most healthy nesting site.

TAVISTOCK.

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### OLD GREY PARROT LAYING EGGS

SIR,—I have in my possession a Grey African Parrot who was brought from the Canary Island by a clerical friend of mine about sixteen years ago, and it was then six months old and thought to be a male bird. To my surprise *he* laid an egg (without any yolk) about the size of a Pigeon's egg, but somewhat larger, which, of course, proved conclusively that the supposed "he" bird was a hen. I wonder

if any of your readers have had a similar experience. At one time the bird used to talk freely, and we counted no less than eighty distinct words which were uttered by her, quite distinctly at one time or other.

“MEDICUS.”

[For some unknown reason the majority of imported Grey Parrots are hens, and it is not uncommon to hear of such birds laying eggs after many years of cage life.—ED.]

#### PURPLE-HEADED GLOSSY STARLINGS BREEDING

SIR,—I think it may be of interest to know that a pair of Purple-headed Starlings I have, hatched two young ones a few weeks ago. One lived about a week, when I found it dead on the floor of the aviary. The other lived over a fortnight. I had no idea the hen was sitting, as she nested in a box covered with bark, and fixed high up. She was able to slip out of the nest without being seen when she heard footsteps. The first sign I saw of young was that the old birds did not eat the mealworms, but held them in the beak till I was out of sight of them, and then I saw them enter the nest. Am I right in supposing that Purple-headed Starlings have not been bred in England? If they have, I should be glad of hints as to how to feed them when they have young, as I think mine may nest again.

WINDSOR D. PARKER.

#### THE WHITE-THROATED FINCH AT LIBERTY

SIR,—I wonder if any members have tried giving the White-throated Finch or Patativa liberty? I have one who behaved so badly in the bird room that I was obliged to cage him and bring him downstairs. He seemed to like prison, and sang unendingly. I let him out in the room and he behaved well with an old and very tame Canary. They both breakfast with us, the Patativa off orange or banana placed on the table. Then they both take a bath on the floor and return to their cages. At tea both meet on the cakestand and quarrel over our bread and butter. One day Patativa got out by mistake. I put

his cage out, and before tea he was home again. Now I let him out in the garden, and he delights in chasing Sparrows and eating flowering grass seed. I think, too, he sampled a neighbour's raspberries. But he always returns and allows himself to be carried indoors by tea-time. If his cage is left open in the evening and I am out I always find him asleep on a spray of rose or a carnation arranged in a large vase on a pedestal in a corner of the room, and he never moves however close I go to him. Outside he sings, raising his little crest, and is in no way bewildered or upset. I am very anxious to find a hen for him, but so far have been unsuccessful.

CHRISTINE IRVINE.

[A subsequent letter reports the disappearance of this bird, probably taken by a cat or Owl, but it is to be hoped that the experiment will be repeated by the liberation of say three or four pairs of these birds after they have become accustomed to their home by residence in an aviary.—ED.]

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#### BREEDING THE MASKED LOVEBIRD AND SWAINSON'S LORIKEET

SIR,—Referring to our Editor's remarks on the nesting of the Masked Lovebird, I have had pretty much the same experience just lately.

My old pair of Masked Lovebirds were purchased late in 1927, and have reared young each year, always producing chicks that were perfectly feathered when they left the nest.

This year, however, they have two chicks which flew during the second week in July: these youngsters were fully feathered on the head, wings, and tail, but all the rest of the body was only covered with a fluffy grey down. They could fly like Swallows directly they left the nest, but they certainly looked freaks. One of them is now perfect in plumage, and the other nearly so.

I suspected that the parents had plucked them, but on examining the nest I could not find any trace of feathers in it, so I am inclined to think there is some other cause for the trouble.

The parents have always nested in an old coco-nut husk, hung up

in the aviary shelter ; although I have given them all sorts of nest-boxes which I thought suitable, they evidently thought otherwise, and always used the husk.

My Swainson's Lorikeets laid two eggs early in June, and hatched both, incubation lasting twenty-one days. They were perfect parents, and the chicks were coming on fine until they were twelve days' old, when for some reason or other they both died. I have had this pair of Lorikeets three years, always in glorious condition, but this is their first attempt at rearing a family, and I am naturally very disappointed. They have always been fed on the Mellin's food, honey, and condensed milk mixture, with also a small pot of pure honey. They seem to care very little for fruit, excepting grapes, and never touch seed at all.

We have had awfully wet and cold weather here all the "summer" : perhaps that was the cause of the young dying ? Or, maybe, some of our members can point out where I have gone wrong. Even Budgies have not done so well here as usual, every nest having two or three dead in the shells, and foreign Finches have been a failure altogether.

H. A. COLLIN.

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#### DEATH OF AN OLD GOLDFINCH

SIR,—I have just received news from my brother of the death of a British Goldfinch, from old age, at 16½ years. "Joey" was caught by me almost seventeen years ago, as a young bird not in full colour, and for many years lived in a small aviary with other finches. Being so long in captivity he became very tame and confiding and was a general favourite with all. Time had dealt very gently with the old fellow, and he was singing almost to the end, although for the last month he was rather feeble, sleeping a great deal. The last day of his life he refused to eat and died during the night. This record goes to show that although he was never a hardy bird he lived to a ripe old age because of the care and attention bestowed on him by his owner.

A. MARTIN.

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THE NEW BIRD HOUSE AT ST. LOUIS.

GENERAL VIEW OF THE FRONT OF THE BUILDING, TAKEN FROM THE FLIGHTLESS WING, LOOKING TOWARDS THE MAIN BUILDING.



GENERAL VIEW OF ONE OF THE AISLES. THE GLASS CAGE FRONTS CAN BE SEEN CLEARLY.

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THE NEW BIRD HOUSE AT ST. LOUIS

By HENRY M. KENNON, Curator of Birds, St. Louis Zoological Park

One of the recent outstanding events in the St. Louis Zoological Park was the opening of the New Tropical Bird House. In this building John E. Wallace, the architect, under the supervision of George P. Vierheller, director of the gardens, has made a radical departure from the stereotyped bird house of the past, incorporating in it the best features of the old type of building as well as many new and practicable conceptions, designed to display a large collection of tropical birds to the best advantage; and has constructed a bird house which, both in beauty and in practicability, will stand as a model for many years.

The building is 203 feet over its greatest length, and is 123 feet in depth, and comprises the tropical house proper and the flightless wing. It abuts upon the present elephant house which, in the near future, is to be converted into the Parrot wing.

The architecture is of the Spanish type, to conform with the other permanent buildings of the garden, and is finished in cream stucco with terra-cotta ornamentation. All ornamentation, both exterior and interior, carries out the bird motif, in harmony with the purpose of the building. Of particular note are the two large semi-circular plaques in natural colours, over the principal entrances of the building. The plaque over the entrance of the tropical house depicts a group of both Old World and New World Flamingoes, while the one over the

entrance of the flightless wing portrays a family group of Ostriches. Capitals and cornices are decorated with such birds as Penguins, Cockatoos, Owls, Peacocks, Doves, and Wild Ducks.

The tropical house contains fifty-nine cages, ranging in size from 4 ft. 7 in. by 7 feet, for small birds, to a large group cage 24 by 26 feet, which at present contains a group of Macaws and Cockatoos. There are ten other large group cages for the display of larger or more outstanding birds. Three of the latter cages have floors of natural earth and are planted with tropical plants of various kinds, as well as being furnished with naturalistic pools, so that the cages present, as nearly as practicable, a habitat setting for the birds.

One of the greatest innovations in the house lies in the cages. All cage fronts are constructed of plate glass bordered by narrow strips of different types of wire mesh, depending upon the types of birds confined therein, thus giving not only a clear, undistorted view of the bird, but permitting the public to enjoy the song as well. This border of wire also permits free ventilation of the cages without danger of draughts. On all cages where the size of the glass will permit, the glass is pivoted, allowing it to be revolved, so that both sides of the glass can be cleaned from the outside. This is one of the most practicable features of the entire house, for, contrary to general belief, we have not had a bird escape from the house since it was opened.

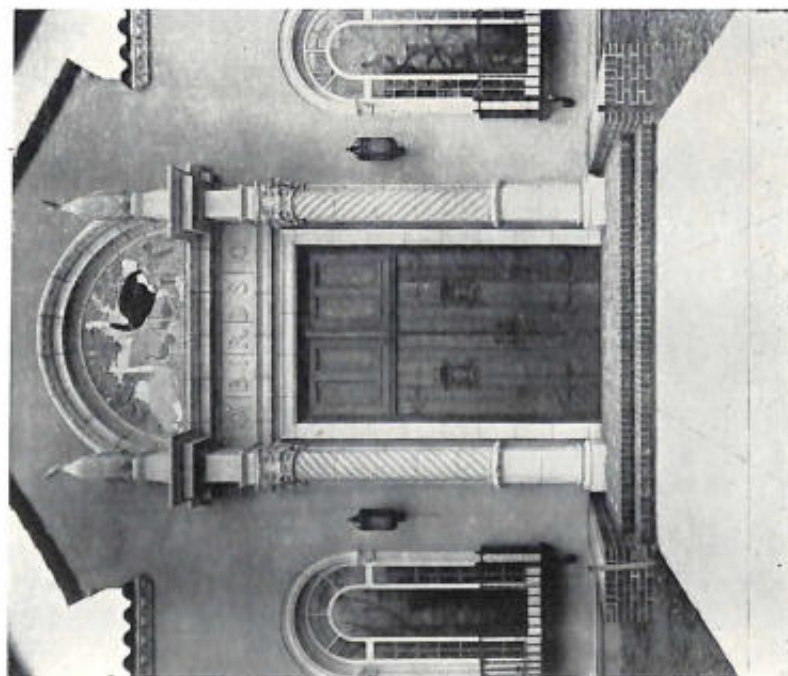
Instead of the usual straight perches across the cages, in all cases trees, set in movable bases of concrete and rock, are used. In addition, in many of the cages, trees growing in pots or tubs are introduced to carry out the habitat idea.

The partitions between the cages are of translucent plate glass, permitting the transmission of light, but preventing pugnacious birds from trying to fight their neighbours.

As one enters the building he is struck at once by the beauty of the entire lay-out, and is pleasantly surprised by the entire absence of any disagreeable odour. He meets a vista across a tropical swamp, through a large flying cage, and into the large group cage for Macaws and Cockatoos. The swamp is also a habitat setting, planted with ferns, palms, and other tropical foliage and containing a series of cascades and pools, affording a very beautiful setting for a group of



DETAIL OF THE PIVOTED GLASS CAGE FRONT. THE GLASS IS OPENED TO SHOW METHOD OF OPERATION. NOTE THE WIRE GRILLS ON EACH SIDE OF THE GLASS. THE METHOD OF LABELING IS ALSO SHOWN.



MAIN ENTRANCE TO THE FLIGHTLESS WING OF THE NEW BIRD HOUSE, ST. LOUIS ZOOLOGICAL PARK. THE TERRA COTTA PLAQUE OVER THE ENTRANCE IS PLAINLY SHOWN.



THE SWAMP SCENE. AS ONE ENTERS THE BUILDING, HE MEETS A VISTA ACROSS A TROPICAL SWAMP, THROUGH A LARGE FLYING CAGE AND INTO THE LARGE MACAW CAGE.



ANOTHER VIEW OF THE SWAMP. TWO OF THE FLYING CAGES ARE SHOWN, AS WELL AS THE CAGES ACROSS THE AISLE SPACES.

*To face p. 203.]*

tropical wading birds. Living turtles and fish add to the faithfulness of the picture. Separated from the swamp only by a partition of almost invisible copper screening, the large flying cage, also planted suitably, contains a group of many species of Finches and Wyardahs, many of whom are nesting in the cocoa-nut shells placed in the living trees. The opposite side of this cage is of plate glass, facing the glass front of the Macaw cage. One's impression is that he is observing groups of birds at liberty, since there are no obtrusive bars to break the sweep of vision, and more particularly since the front of the swamp is separated from the public only by a low railing.

All lighting in the building is obtained from skylights placed over the cages themselves, thus putting the birds in the most brilliant light and the public in the subdued light.

The flightless wing contains seven cages of sufficient size to accommodate such birds as Emus, Rheas, and Cassowaries, as well as cage space for the smaller flightless birds.

The air in the building is changed by a battery of fans sufficiently large to meet every emergency of ventilation. By their use the building is kept entirely free from objectionable odour, and the air is sweet at all times.

Due to the experience of M<sup>e</sup>. Vierheller and the ability of Mr. Wallace, the Tropical Bird House in St. Louis ably demonstrates that beauty of building and exhibits may be happily combined with entire practicability for the keeping of large and varied groups of exotic birds.

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## COCK-OF-THE-ROCK AT ST. LOUIS

By HENRY M. KENNON, Curator of Birds

The St. Louis Zoological Gardens are fortunate in being able to display a collection of four male Cocks-of-the-Rock (*Rupicola rupicola*) in the new bird house. Two of the birds have been in the collection for over a year, while the others were added early in the spring.

The Cock-of-the-Rock is a beautiful and striking bird. It is about the size of a Pigeon, crested, and giving the general impression of an

intense orange colour at the first glance. The crest is composed of a double row of fine feathers, orange, tipped with chocolate-brown, and is capable of being drawn down so as to completely hide the beak. The contour feathers are white with tips shading from a blood red, through a deep orange to a pale yellow, giving the impression of a deep orange overlying the white under-coat. Flights and tail-feathers are a deep chocolate-brown, edged with orange and white. The upper wing coverts have truncated tips, but the vanes extend backward with the effect of a very long fringe. Back coverts and upper tail coverts are also fringed. Eyes are a light brown, with a black iris, feet and legs orange, the beak is orange shading into a light horn at the tip.

The collection is placed in a flight cage, with living plants. They are not active birds, but they enjoy a large cage, so that they may fly when they are so inclined. They are fed on a mixture of Mocking Bird food, grated hard-boiled egg, grated carrots, scalded ants' eggs, and banana in the mornings, and a feed of straight fruit, usually cherries or grapes, in the afternoon. Mealworms are given those who will take them three times a week in winter and once a week in summer.

The birds are all finger tame, and are trained to come to the keeper's hand for their afternoon feed. This gives an absolute check on the condition of each bird each day. If a bird is moulting, or off its feed for any reason, it may be coaxed into taking more food by offering it various dainties.

There has been no serious fighting, though they are prone to dispute for places on the keeper's hands. They fight much like Cocks, springing up in the air, but their object is to grasp the opponent with their powerful claws. The tip of the upper beak is quite sharp, and they are capable of inflicting a sharp bite.

The birds have distinct personalities. They are quite jealous of their human friends, and sulk like spoiled children if they consider that one of the group is receiving more than his share of attention. When sulking they draw the crest down over the beak, half-close their eyes, and crouch on the ground with their backs to the keeper. Generally they require quite a bit of coaxing before they will regain their good humour.

The call resembles, to a certain extent at least, the call of the



CHARACTERISTIC POSITIONS OF THE COCK-OF-THE-ROCK. THESE ARE TWO OF THE FOUR SPECIMENS ON DISPLAY IN THE NEW BIRD HOUSE OF THE ST. LOUIS ZOOLOGICAL GARDENS.

Peacock, and is quite loud, but they seldom exercise their voices unless their morning feed is late.

As a zoological exhibit, the Cock-of-the-Rock is excellent. Our collection, in competition with an exhibit of birds containing many rare and unusual birds, attracts great crowds to the cage. As a member of a private collection, his tameness, beauty, and amusing ways should make him the greatest attraction if one's purse could stand the original cost.

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## BREEDING OF THE EUROPEAN BLUE ROCK-THRUSH (*MONTICOLA SOLITARIA*)

By MAURICE AMSLER, M.B., F.Z.S.

I think I was first fired to keep this species by reading the late Herbert Astley's *My Birds in Freedom and Captivity*. In this book he gives a very charming account of taking a nest of these Thrushes in the Alps, and of the subsequent history of one male, which he reared and kept in a cage. There is also a beautiful marginal drawing of a cock Blue Thrush, executed by the writer.

My first two pairs came to me in July, 1914, from a dealer in Austria. These birds, owing to the upheaval of the War which followed within a month of their arrival in London, did not get the necessary attention which they required, and were unfortunately left out of doors during that very cold winter. My notes at this time are very meagre and beyond the fact that they died I have no further details. One incident remains clear with me and it is that the Austrian did not cash my cheque until quite a year after the war was over, when the Austrian Exchange was so low that he must have become a millionaire in kroner.

My next attempt to obtain a true pair was during a short stay in the Maritime Alps in the spring of 1920. None of the Italians were at all anxious to part with their birds until the day of my departure, when I received two or three messages through my hotel keeper, offering me birds at exorbitant prices. Two birds, a supposed pair, were actually brought to the hotel. Both were in dark travelling cages, but as they appeared quite lively I determined to buy them,

and after a little haggling they became my property. When I reached home, I found to my disappointment that the hen bird was in reality a female of the Pied Rock-Thrush, and therefore of no use to me. Monsieur Delacour, with his usual generosity, shortly afterwards very kindly gave me a cock of the species. The Pied Rock-Thrush has already been bred in captivity and the history of these two birds, therefore, does not enter into our story.

The cock Blue Rock-Thrush lived with me for many years and won prizes at our local shows, but for one reason or another I was never able to obtain a satisfactory mate for him.

It was not until some three years ago, when Blue Rock-Thrushes appeared in some numbers on the dealers' lists, that I was able to obtain a true pair.

The cock came from Captain Rattigan and was absurdly tame. He was obviously hand-reared and, although a full adult and therefore at least two years old, he always gaped like a nestling when offered any tit-bit such as a mealworm or a spider.

The hen came from Monsieur Plocq, the well-known French aviculturist, and on her I built great hopes as she had already nested and incubated a clutch of eggs single-handed, when in his possession, the eggs naturally being infertile.

All who have kept Thrushes and closely allied species know that it is very rare that the cock and the hen can be kept together in a cage or even in an aviary, except during the height of the breeding season, and in my opinion this dictum applies with special force to the Rock species, both Asiatic and European, as evidenced by a number of marital murders which have taken place here.

These two birds were therefore kept apart during the autumn, winter, and early spring.

Another pair which I fortunately bought as a second string were similarly treated.

In the spring of 1930 each of the hens was turned out into a separate aviary, and their respective cocks were placed with them, but were confined to their wicker cages until such time as the hens appeared thoroughly at home and presumably stronger on the wing than the cocks. The latter were then let out for a few hours each day, and a

sharp look-out kept in order that no bullying should take place. It was an easy matter by means of a few mealworms to make them re-enter their cages, where they were safely shut up for the night.

A short course of this treatment soon proved that there existed a condition of armed neutrality and the cocks were given their entire freedom.

For some reason or another first the cock and then the hen of the first pair developed some wasting disease and died, to my great disappointment. Both birds, when examined after death, showed a large number of minute grey lice at the bases of their quills. Whether these were the cause of death or not I am not certain, but I am inclined to think that these parasites multiplied merely because the birds had been unfit for many days, and had not taken the trouble to bathe and keep themselves clean.

The other pair survived the 1930 season but showed no signs of breeding. The hen was very wild and spent much of her time hiding in a large nest-box. Shortly before their autumn moult was finished, I caught them and caged them up separately for the winter.

The hen was turned out into a fair-sized aviary in April of this year. This aviary she shared with a pair of Siberian Bullfinches and several pairs of Budgerigars. The cock was caged in this aviary as already described, and was let out for an hour or two daily during the early part of May.

On 12th May the hen was noticed to be building in a wicker Canary travelling cage hung up high inside the shelter.

Just about this time the cock had been kept entirely caged up for a few days on account of his bullying tactics, but fearing that the hen might lay at any moment, and wishing to avoid clear eggs, I liberated him, with the result that the almost completed nest was promptly pulled to pieces. A deep cigar-box was hung up close to the site of the previous nest and a new nest was built and completed by 20th May. This time the cock refrained from his destructive work.

On 24th May I found the hen sitting on four eggs. They were the size of those of a Song Thrush, a very pale blue in colour and completely unspotted. I made quite sure that the birds had not mated and that

the eggs were infertile, but my man reminded me that I was of the same opinion a few years ago when we bred the Hermit Thrush. I therefore left the hen undisturbed, and she in her turn did her duties most maternally, in fact I never once saw her off the nest during the whole of the incubation period, neither was the cock ever seen to feed her. The cock, who was always extremely tame and inclined to be aggressive to anyone entering the aviary, became very much more so, in fact he was almost dangerous, and would fly on to one's shoulder or hand and peck vigorously. I hoped that this increased savagery was perhaps due to an instinct prompting him to drive all and sundry from the nest, and on examining the eggs after they had been incubated eight or nine days, I was delighted to note that they had become of a somewhat leaden hue and that they therefore doubtless contained embryos.

On looking into the nest again on the 4th June—a day of rejoicing in this town—I was thrilled to find four vigorous chicks of a dark salmon colour with small areas of black down.

Both parents were extremely secretive in their food duties, and we had many a long wait, peeping through a specially made screen, before we established the fact that both birds were feeding the young. There appeared to be a certain rivalry in these duties, as a handful of mealworms was immediately followed by a scramble between both parents to possess themselves of a dozen or more each, which were taken to different ends of the aviary and there carefully beaten up and killed before being taken to the young. Indeed, after a time it became obvious that the hen was not being allowed to do her share. If this was pure gallantry on the part of the male he had a peculiar way of showing it. Also the cock appointed himself inspector of nuisances, scavenger, etc., and as far as I could judge carried out all the duties associated with the care and cleanliness of the nest, a task which is no light one, with four vigorous growing Thrushes.

On 14th June one chick was found dead on the ground. He was considerably smaller than the three in the nest, who were now ten days' old and were covered with dark brown quills with still some black down on their heads.

On the 20th I have a note that the cock was doing most of the

feeding and that the three young were fully feathered, and of a "mouse-brown" colour.

On the 21st the three youngsters, who were about two-thirds the size of their parents, left the nest.

This was a great day for the cock who, I verily believe, became maniacal with feeding fever. I had, of course, to supply a large amount of insect food and he was never without a supply in his beak. Neither would he allow the hen any share in the care of the young.

By the evening of the first day I found two of the young looking very ill indeed, and I strongly suspected from the look of their eyes that their father had set about them, and tried to kill them because they would not take any more food.

The cock was again caged up but, unfortunately, the hen had apparently been discouraged, and she proved to be a poor feeder. I was on the horns of a dilemma. If I kept the cock caged, the young might die of starvation. If I let him out he would feed the young, and then would jump on them and peck them, because they refused to take more. I was determined that one at least of these young should be reared by the parents, so chose the strongest-looking of the three, and placed him in the wicker cage previously occupied by his father.

The other two we tried to hand-rear, as they appeared very weak, and were being neglected by both parents. In this we failed, although I have frequently hand-reared much more difficult species. I expect the injuries they had received proved too much for them.

The young bird in the cage progressed quite satisfactorily as he received ample food from his father through the cage bars, but was safe from any subsequent attack when he had had enough.

Within two days of leaving the nest all three of these young birds had shown an inclination to feed themselves, and would pick up live ants and their eggs from the aviary floor. By throwing a handful of eggs and ants into the cage I very soon induced our youngster to feed himself, and by 30th June, nine days after he had left the nest, he was caged up with twelve Blue Robins a little more advanced than himself, who very shortly taught him to bathe and to feed on the insectile stock mixture.

His colour at this date was a plumbeous grey, with very slight streakings on the breast, and even at the present date, 8th August, I find very little to indicate the sex of this bird, who has grown into a fine specimen quite as large as either of his parents.

Shortly after the removal of our survivor, the hen again tried to build, but the cock once more pulled the nest to pieces, and this ended any hope of a second brood for this season.

If all goes well in 1932 I shall take the first brood at ten or twelve days' old. There should be no difficulty in hand-rearing. Possibly the cock will not be so excitable and over-zealous if they have the good fortune to rear a second nestful.

Dr. Hopkinson tells me that he can find no record of this species having been bred previously in captivity, either in Great Britain or Europe. Whether the feat has been accomplished before or not, I do not think there is any likelihood of the market being flooded with aviary-bred Blue Thrushes.

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## MORE NOTES ON BLUE ROBINS

By MAURICE AMSLER, M.B., B.S., F.Z.S.

A recent request on the part of our Editor for notes on this species must be my excuse for the following account of successes and failures for the seasons of 1930-31. Personally, I should have thought that I had sufficiently written up this species for some time to come.

I started the 1930 season with two pairs—No. 1 pair the old originals who have been here since 1926, and No. 2 pair which some readers will remember were given their liberty in 1929 and which reared some eight youngsters in that season.

To cut a long story short nine young were reared to independence, but of these five died during the late summer of some wasting disease, possibly enteritis. I shall have more to say about this later.

My liberty pair hatched out and reared their first nest in their little aviary, the door of which was left constantly open, parents and young being caged up just before the young were ready to fly. As soon as the latter were independent the old birds were put back into

their aviary and, of course, shut in. A week later I made the mistake of putting the five young in an adjacent aviary, with the result that the cock, recognizing his offspring, spent much of his time feeding them through the wire netting. Here I made a fatal mistake. Thinking the old birds would stay, both on account of their nest-box and also because of their young, I opened their aviary door prematurely, with the result that the cock spent that night somewhere outside. Had I been as wise then as I am now, I should have put the hen in the cage inside the aviary and used her as a decoy, but I felt almost certain, after their behaviour of last year, that neither bird would stray.

The following day the hen left her nest where she was about to lay, joined the cock who had reappeared, and within an hour or two both birds had gone. They had completely forgotten both their young and my box of mealworms. I hunted for them and I advertised for them. The result of the latter was a number of messages saying that the birds had been seen, but descriptions given me would have suited anything from a Blue Tit to a hen Blackbird, and never tallied with that of a Blue Robin.

No further news did I get of my truants until some four weeks after their escape when both birds were quite definitely seen and described to me by the Matron at the Eton College Sanatorium. A workman who lives quite close to that building, and who is a keen bird watcher, declares that he saw the pair with four young on several occasions during September and October. These young appeared less and less frequently, and it is possible that they either strayed or met with untimely deaths, probably the former.

The last news I had of my birds was in February of this year, when one or other was again seen at the Sanatorium. I lent the Matron a pair of Blue Birds in a cage which were hung up each day close to the spot where the old bird had been seen, but he never repeated his visit and I fear is lost for good.

We know that Blue Robins are migratory in their own country, and it is interesting to note that one at least of the escaped birds presumably remained in the neighbourhood and survived the whole of a fairly mild but distinctly changeable winter.

This year I started my season with three pairs of birds. The old

pair as usual, and two of my own hens bred in 1930, mated to cocks which I had obtained by exchange.

One of these young pairs showed signs of carrying while still caged up in February. I gave them a nest-box and building materials. A nest was quickly built and five eggs were laid. As the cock never attempted to feed the hen according to the invariable custom of this species when mated, I suspected that the eggs would be clear, which in fact they proved to be.

Later this same young pair laid again in an aviary. Their eggs were transferred to a Robin's nest and were successfully reared. A later clutch was treated in the same way and three chicks were again brought up.

My second young pair were unproductive, for the reason that the cock died early in the Spring.

The old pair laid early in April, the first clutch being again placed under wild Robins. But I have to record failure here owing to the fact that the wild birds' eggs were much more advanced than those I placed in their stead.

The second clutch in mid-May were also placed under Redbreasts, and on this occasion I was unable to catch the wild birds when the time came to take the nest, with the result that these had to be hand-reared.

During the latter part of May, I strongly suspected the old cock Blue Bird of interfering with a nest of Roller Canaries, but on more careful investigation I found, to my amazement, that he was feeding these young birds with mealworms. Whether this is suitable diet or not for birds of the Serin tribe these youngsters thrive amazingly. Even after they had left the nest for some days the Blue Bird continued his attentions, but he then found it much more difficult to administer the mealworms to the young Canaries when perching than he had when they were still in the nest. Each mealworm, after being thoroughly broken up and given to the Canary was usually dropped to the aviary floor two or three times before it was successfully swallowed.

Seeing how keen this cock was to feed young, I determined to give the pair a chance of rearing their own young. Their next clutch of

eggs was therefore left to them, and on 22nd June five young were hatched. I determined that if the young began to disappear or die I would transfer nest-box and parents to a large cage.

On the 29th I found one chick dead in the corner of the box and on the following day the birds and young were transferred to a cage, my idea being that in confined quarters the old birds would have no outside temptations, and nothing to think about but the feeding of their young. The experiment was successful to a point but the young were late in leaving the nest, and were under-sized when they did so. None of them was fully reared, the cause of death in one case being reported as enteritis.

I have lost this season at least four youngsters from a disease which I cannot diagnose unless it be a form of avian poli-neuritis. The bird appears to have a stiff neck, the head being turned markedly to one side. It loses its power of flight and the legs become weak and stiff. Unless destroyed they often linger in this state for many days. Although my feeding is identical with that of previous years this is my first experience of this type of disease amongst young softbills.

I read somewhere, earlier in the season, of a breeder who mentioned the loss of a young Blue Robin from some injury to its neck, and I strongly suspect that this bird died of the disease which I have just described.

To refer back to the loss of young birds last season—when five birds out of nine died when two or three months old, and also to three or four which died this year, all very much wasted and suffering from what one must call enteritis—I feel certain that the condition is at any rate partly due to an over generous supply of mealworms, and I think it would be wiser in the early stages of the birds' independent life to withhold the supply of mealworms as soon as possible, although there is no objection to the youngsters being given half a dozen each daily. We have noticed that my own youngsters of this season have improved very greatly since we adopted this procedure.

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## VARIOUS SOFTBILLS

By the MARQUESS OF TAVISTOCK

During the years that I confined my avicultural ventures entirely to Finches and Parrakeets, I regarded those people who kept the choicer species of insectivorous and fruit-eating birds with a reverence akin to awe; much like that, indeed, with which the angler with the humble worm may be supposed to view the expert performer with the dry fly. But having now begun, not without much initial fear and trepidation, to keep a few softbills myself, the conviction is slowly but surely gaining possession of my mind that, if anything, the boot is on the other leg. There are some very difficult softbills, certainly, as there are also seed-eaters, that are well-nigh impossible to keep in health; but as far as I have been able to observe insectivorous and nectar-feeding species, even those with a reputation for being somewhat tricky, are far less subject to that trinity of unpreventable ills—pneumonia, septicæmia, and enteritis—which make the summer and autumn months a time of sickness and casualties in any large mixed collection of Parrakeets not kept in close confinement. It may sound strange, yet it is undoubtedly a fact that where I am now living King Birds of Paradise thrive better than King Parrakeets and Sunbirds flourish where Redrumps or Grass Parrakeets die within a few weeks. Sugar Birds and Fairy Blue Birds prosper, but Gouldians, Avadavats, and Orange-breasted Waxbills do not.

My only Tanager—a Superb—who, I suppose, comes mid-way between softbills and Finches, is in lovely condition, sharing an aviary all the year round with an old Hodgson's Slatey-headed Parrakeet and his Plum-head mate. Last winter I was somewhat puzzled by a curious lump of feathers that appeared on the Tanager's abdomen and had he seemed at all out of sorts I should have feared a growth or injury. The phenomenon was explained by a friend with more experience of Colliste Tanagers kept under open-air conditions, who told me that he had found that they grew an immensely thick crop of feathers, much as some tropical mammals produce quite heavy winter coats in temperate climates. I should, however, add that, while the Tanager has access to the open air even in the coldest

weather, the shelter itself is heated. He is fed on fruit, mealworms and Sunbird mixture, the withdrawal of the latter from the menu producing disastrous consequences in the case of three other specimens of the same species which had thrived as long as they were similarly fed. Under indoor conditions, I believe that Sunbird mixture proves too fattening, but it is essential for birds kept outside. I have at present three species of Sunbirds, all of them in aviaries. The Malayan Green Sunbirds (*Anthothrectis simplex*) I am getting rid of. They are too "simplex" to be worth the bother of preparing food for, the hen (?) being the colour of a Hedge-sparrow, while the cock (?) is only adorned with an inconspicuous mask of yellowish green on the breast. They seem hardy enough. The dealer actually sent them a long journey in a cardboard box with no syrup and only half a stale orange for nutriment. Although this treatment would have killed any ordinary Sunbird ten times over, they reached me but little the worse. The day after their arrival I turned them into a large cage, which so cheered the hen that two days later I was only just in time to prevent her from murdering her companion. *A. simplex* has a rather wicked-looking reddish eye which apparently does not belie its character. Like other Sunbirds it is very fond of spiders and small insects.

Two cock Purple Sunbirds, the kind gift of Mr. Godfrey Davis, have occupied aviaries for some years. One is showing signs of age, though still in good health and spirits. He lives quite happily with a pair of Porphyry-crowned Lorikeets. The other is in the prime of life and full of impudence, and next season I hope to mate him with a nice hen Mr. Godfrey Davis brought back for me this summer. Until recently he has shared an aviary with a pair of Worcester's Hanging Parrots, who kept him in his place when he tried to be cheeky. After the escape of the cock Worcester I put a Golden-backed Hanging Parrot with the hen, but the Sunbird recognized him as a stranger at once and began to take liberties with him, finally making himself so unpleasant that the Golden-back was quite afraid of him, and I was obliged to put him with an old Princess of Wales who ignores him, but whom he dare not molest. When in eclipse plumage from July to mid-winter he is not very striking, a nondescript greyish brown

with a yellowish white breast and a dark line running down the middle. In his wedding garment of glittering blue-black he is a very handsome little fellow indeed with quite a cheery song. When in pursuit of spiders he sometimes settles on the ground and even hops about, a mode of progression that looks strange in a species usually strictly arboreal.

The little Scarlet Sunbird (*Sipa rajah*) is one of the treasures of the collection and is, I believe, the first to be imported. He arrived last winter and now shares an aviary with a hen Broadbill. He is quite a tiny bird, smaller and much more slender than the Purple, and now that he is through the moult is very lovely. His head and mantle are crimson changing into scarlet on the throat and upper breast. The wings and rear part of the body are brown, while the crown, tail, and two long lines of feathers running downwards from the angle of the beak are dark, metallic blue. There is a spot of yellow near the base of the tail. I was a little afraid that he might lose his red colour, but Asiatic Sunbirds, I am told, are less prone to do so than the African species and in any case the sole right of hunting a fair-sized aviary for insects and spiders should provide him with all the live food he requires. His partiality for spiders almost proved his undoing for, while endeavouring to swallow a largish one I had given him while he was still in a cage, he as nearly as possible choked himself!

His companion, the Broadbill, has alas! been many times widowed. These beautiful birds are certainly *not* easy to keep. The cock who came over with her two years ago did not survive many weeks. A particularly fine specimen that reached me last winter was, through a sad accident, roasted to death at the same time as a promising Red-and-black Broadbill—a quaint, Barbet-like bird insectivorous in diet. A third cock did well for a time and then got aspergillosis, I am afraid from mealworms kept in a box with mouldy vegetable matter. A fourth lived long enough to join the hen in the aviary, but succumbed to jaundice during the summer. Although criticized by some people for their sluggishness, Green Broadbills are quite active and interesting when they are *not* kept in a cage containing only two hard perches at opposite ends. Strictly arboreal in their

habits they are almost helpless on the ground and some individuals cannot learn to bathe from a dish. They will, however, bathe in a leafy branch that has been well sprayed with water or they may enjoy being sprayed direct, if tame. When kept in an aviary Broadbills need *firm* branches with rather stout twigs; if caged, a number of perches a few inches apart are said to encourage exercise. The only food my Green Broadbills would ever touch was chopped banana and mealworms. The fruit should be cut into clean, firm sections and not mashed, or the bird's beak gets messed up. A little hard-boiled egg sprinkled over the fruit is said to be beneficial. Broadbills are very gentle birds and seem incapable of inflicting any injury on their companions. Although he survived much longer than any of the others imported at the same time, my Hose's Broadbill has also joined the majority. *C. hosei* is a very striking bird, larger than the Green Broadbill, with some deep blue in the centre of the breast and extraordinary black spots curiously arranged on head, nape, and wings which resemble nothing so much as ink blots. The shape of the head, the rather long neck, and the drooping hackle on the rump are almost suggestive of a fowl and one of my children remarked that the bird "looked rather like a green chicken". On first arrival the Broadbill seemed exhausted and out of condition from the hardships of his journey and began to look miserable whenever the temperature dropped near 70° Fahrenheit. By keeping him at an even 85°, however, I soon got him into tight plumage and better spirits. He hopped about actively in the long cage in which I placed him, sometimes attempted to bathe, and devoured large quantities of chopped banana, pear, and pumpkin, refusing mealworms. The only call I heard him utter was a Dove-like cooing. We discovered after a while that he was infested with tapeworm parasites, which doubtless lowered his vitality, although for some time he seemed to be thriving and made good progress with a healthy moult. In February, however, to my great regret, I heard that he had died suddenly of enteritis, and I rather suspect that during my absence the temperature of the room in which he lived was allowed to fall too low. Fairy Blue Birds, with me, as with others, have so far proved exceedingly easy to keep and there is little doubt that this handsome bird is one of the most

desirable of the larger foreign softbills. For the benefit of those to whom the species is not familiar, I may say that *Irene turcosa* rather resembles a short-legged Thrush with a stout black beak and a red eye (brown in immatures of both sexes). The adult cock has the upper part of the head and neck, the mantle, rump, and very long tail-coverts the most gorgeous turquoise blue with a wonderful gloss, just like enamel, the remainder of the plumage being black. The hens and immature males are a uniform grey-blue of a shade that recalls the plumage of a Blue Rock Thrush. Unfortunately hens seem to be very rarely captured, a consignment of young birds, all moulting into male plumage with the regularity of Plum-headed Parrakeets! Last winter I obtained what I hoped were a pair, a belief strengthened by the fact that the "hen" was very much the master and bullied the fine old cock as long as they were caged together. After a few months, however, "she" began to grow black feathers and I changed "her" for another supposed female. Although it was still early in the year I had judged it safe to transfer the adult cock from a cage to a warmed shelter communicating with an outdoor flight. In this rather gloomy residence he continued to thrive, though for months he never came out into the open. When the new bird was in good order I turned it in with him. At first he displayed great terror, obviously remembering the bad treatment he received from his former cage mate before I separated them, but as the new arrival did not seem disposed to molest him I left them together. They agreed fairly well and in the end the old cock made himself master. His companion proved of a more venturesome disposition than he and came out into the flight fairly often. I even saw it sitting outside singing during a snowstorm—not a bad effort for an unmoulted fairly recent importation! While not in the first rank as a songster, the Fairy Blue Bird is not without vocal merit. The usual call-note is a loud "Twit!" and the song, which is uttered by both sexes and appears to be an expression of content or pleasureable excitement rather than a challenge or love lyric, consists of a rapid series of cheery, loud twitting and bubbling notes with an occasional soft note interspersed.

Just when I was hoping that I possessed a satisfactory pair, black feathers again began to appear on the throat of the supposed female.

This time I was able to obtain, by exchange, a certain hen which had been some years at the Zoological Gardens. Knowing the nasty habit that the different sexes of many medium-sized softbills possess of murdering each other when they are associated out of the breeding season, I looked forward to the introduction of the lady with some trepidation. The meeting, however, went off most pleasantly. The cock at once recognized the genuine article and showed as much pleasure as he had previously shown alarm at the hooligan young fellows whose society we had inflicted on him; and the hen, although she rules the ménage, behaved with becoming good humour.

The lengthening days of spring eventually tempted the cock Blue Bird to forsake his retirement and display his gorgeous colours in the open. I fixed up some thick branches inside the aviary shelter and in the flight and hung supplies of twigs, moss, and feathers where the birds could easily reach them without going on to the ground, for the Fairy Blue Bird is as strictly arboreal as a Broadbill and just as clumsy and unhappy on a flat surface.

Towards the end of June the hen began to carry nesting material about but did not appear to settle down, and I had rather given up hope of anything happening when early in August the aviary attendant missed her and found her sitting on two eggs in a rather untidy moss nest on a branch in the aviary shelter. She sat very steadily for nearly three weeks, coming off two or three times a day to feed and preen herself, her appearance being greeted by a loud burst of song from her mate. One day, however, she seemed to be losing interest in her home and on looking at the nest I found only one egg, the other having completely vanished. A few days later she deserted altogether and looking again I found the egg cracked. It contained a partly-formed chick. The result was disappointing, but it is perhaps something to have obtained fertile eggs so soon after the bird's arrival.

*Irene turcosa* is not difficult to cater for, feeding on insectile mixture, chopped lettuce, and almost any kind of fruit, wild or cultivated. Mealworms are not greatly relished, though I have seen the female eating wasps and large flies. I have not tried my birds in mixed company, but others have not found them unduly spiteful.

A pair of Yellow-winged Sugar Birds and a pair of Royal Starlings are fairly new arrivals; both so far have given no cause for anxiety. The Starlings share a large aviary with Black Cockatoos, who show no disposition to molest them.

My most venturesome plunge in softbill aviculture was to invest last winter in a pair of King Birds of Paradise. The wonderful combination of red velvet and white in the cock's plumage makes him, to my mind, the loveliest of his genus. The birds had moulted in captivity, the hen coming from America, where she was said to have shown an inclination to nest; while the cock had been some time on deposit at the Zoo. I was none too sure how things were going to progress. One friend told me that King Birds of Paradise usually died suddenly when in perfect plumage; another that they came out in patches of red of different shades if subjected to changes of temperature when moulting. A third that they fought far worse than Robins and two were never seen together in a wild state, unless quarrelling!

While remaining fully prepared to find one or both dead or maimed to-morrow morning, I am glad to say that so far they have not given me much cause for anxiety. On first arrival I housed them separately in long flight cages where they took plenty of exercise, feeding them on insectile mixture, grated carrot, fruit, and about half a dozen mealworms each per day. The hen is tame and will take food from the hand, but her mate is more suspicious. The birds did very well in the quarters provided for them and improved in appearance. In only one respect did the cock disappoint me. I had read that the King Bird of Paradise, when displaying, bursts into a lovely liquid song recalling that of a Skylark. So far my cock has only burst into a noise that suggests a Parrakeet being netted during the progress of a cat fight!

In May the birds began to moult and the hen, who finished first, was transferred at midsummer to one of my movable outdoor aviaries. The cock joined her in July and to our relief there were no unseemly squabbles; indeed they seem very good friends. I have had only one bad fright with them. One morning, on looking the birds over soon after letting them out, I could see no sign of the cock King. Closer

search revealed him on the ground motionless in the wet grass. "That," said I to myself "is the end of breeding King Birds of Paradise!" I went in and caught him without difficulty as he seemed unable to fly, but when I put him in a cage in the hospital he jumped about so alertly that it seemed difficult to detect much the matter, save that his bowels seemed a trifle out of order. A couple of mealworms were eaten as soon as I was hidden, but still I expected that time would reveal something seriously wrong. However, it did not, and in a few days it became evident that he was perfectly all right. I then began to wonder if the hen had been giving him some of the Robin treatment, but my aviary attendant was sure that they were on good terms. I put him back in the aviary, feeling certain that she would go for him on seeing him again if there had been any domestic trouble. But when he was let out of the cage he flew into the shelter and on seeing the hen addressed a long greeting to her in a series of conversational cat-calls, to which she listened with amiable attention. I can only conclude, therefore, that long grass is a phenomenon as puzzling to Birds of Paradise as to Hanging Parrots and that, having entered it to bathe as a substitute for wet leaves, he became somewhat dragged and utterly confused. I have now cut the grass and there has been no further trouble of any kind. Unfortunately, as is common with the genus when kept in aviaries, the birds live largely in the shelter, the cock even more so than the hen. Even in this summer that phenomenon the sun, so abhorred by Birds of Paradise, has been sufficiently in evidence to keep them largely in retirement.

My own brief experience and more prolonged observation of what goes on in other collections, public and private, strongly inclines one to the opinion that the secret of success with all Paradise Birds is plenty of fresh air, plenty of exercise, and a rational and not too rich diet. In collections like Mr. Whitley's, I see year after year the same old friends belonging to species that are often reputed to be hard to manage. In other collections where the birds are closely confined and kept in a stuffy atmosphere, there are frequent gaps and changes.

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THE NESTING OF DERBYAN AND LAYARD'S  
PARRAKEETS

By the MARQUESS OF TAVISTOCK

Although complete success in breeding has been attained by Dr. Patrick in California, the fine Parrakeet introduced to aviculture by Mr. Eustace's efforts has not proved so easy to manage as some of us at first expected and hoped. Although quite indifferent to winter cold cock Derbyans, especially, seem difficult to moult in an outdoor aviary and only careful watching and a well-appointed hospital room averts disaster during the late summer and autumn months. My cock, although to all appearances a vigorous bird, has got ill some time or other during the course of each successive moult. Hens appear more robust and my present female has never had anything the matter with her since her arrival. She was, and still is, exceedingly nervous, but the cock is quite friendly and will take food from the hand and display to a human acquaintance.

During the summer of 1930 the pair were looked after for me by Mr. Boosey at Keston. They showed some inclination to breed, but never really settled down. Last winter they were transferred to one of my movable aviaries at Peasmarsh and amused themselves, after the manner of their kind, by destroying their perches with an assiduity only equalled by Cockatoos. In April I gave them a grandfather clock nest-box, which was completely ignored, but the introduction of a taller box of similar type with the top covered inside and out, down to the nest level, with natural bark, met with more favourable notice. It is an interesting fact that Derbyans, in common with all other Parrot-like birds that are tremendous wood-eaters, do not seriously damage a box they really like the look of as a prospective nursery. If your birds, on the introduction of the nest, start gnawing huge cavities all over it, you may take it as a sign that in their opinion a thing like that is only good for exercising beaks on and you must employ your ingenuity in providing something more pleasing to the psittacine æsthetic sense.

When beginning to come into breeding condition the cock Derbyan has a habit I have not noticed in other members of the genus of driving

the hen about rather in the manner of a Pigeon, and then stopping after a while and showing off to her.

The display is very comical. The cock begins by drawing himself up and turning his head sharply to right or left, tilting one eye slightly towards the heavens. Then he makes as though he were about to rub his beak on the perch and repeats both actions, frequently turning round as he does so. As he works himself up to a greater pitch of excitement he begins to squirm about in an extraordinary fashion, standing first on one leg and then the other, and clawing at the back of his neck with the disengaged foot. He also brings up food from his crop and the hen may lean forward expectantly, but more often than not she is disappointed, as he seems to take a delight in tantalizing her with regurgitational efforts that produce no practical result. At the climax of the display he may either remain more or less rigid or make a slow, deep bow like a Malabar Parrakeet, while the pupil of his eye is reduced to a mere pin-point and the iris blazes like white fire. When the hen is feeling in a responsive mood she begins, towards the close of the display, to butt the cock roughly, but affectionately, in the chest and keep rubbing her head against him. Unfortunately, although he seemed very much in breeding condition, and displayed continually for nearly six weeks before the hen laid at the end of June, I do not believe the cock ever actually paired with her. She sat steadily for the full time but the two eggs proved to be infertile.

Derbyan Parrakeets are very handsome birds and are possessed of character and intelligence. A tame cock I sent to the Zoological Gardens always recognizes and greets me, distinguishing me from among countless visitors, even though I did not make a particular pet of him while I had him. Unfortunately, however, to the two drawbacks of destructiveness and occasional delicacy, a third must be added—an exceedingly loud and raucous voice!

For several years I have had one or two specimens of the rarely imported Layard's Parrakeet of Ceylon, but little success has attended my efforts at breeding. For some years I had a single adult male, but before others of his species were obtained he had died of old age. A second cock suffered from fits and did not survive very long, but the two hens that accompanied him had strong constitutions and most

savage tempers. The older one paired with a cock Plum-head and had a nest of infertile eggs before she made her escape while attacking the aviary attendant, an Owl ending her career before she could be recaptured. The younger hen was also provided with a Plum-head mate and for several years used to inspect a log as though intending to nest but never got as far as eggs. She, in common with nearly all my Asiatic Parrakeets of the Ringneck family, got her toes frost-bitten during the very severe cold of the winter 1928-9, but, though spoiled as a show bird, she was not permanently lamed. In 1930 I required the Plum-head as a mate for a hen of his own species and purchased "a magnificent cock Plum-head" from a dealer. The miserable specimen that arrived was not very well received by the Layard and as soon as the poor creature got ill she decided to terminate so unprofitable an alliance and slaughtered him before the aviary attendant noticed that trouble was brewing.

Last autumn I obtained two more cock Layards and succeeded in getting one moulted and acclimatized during the course of the winter. When he appeared in good fettle I caught the hen and put her in his aviary. She was furiously angry at the indignity of being netted as she likes to pose as a really dangerous bird, and I am sure tells her neighbours that we are all mortally afraid of her! The cock began to display and make himself agreeable in the most polite fashion, but she glowered sulkily at him and when he came within reach made a savage rush at him and soon began driving him about so ferociously that I deemed it wise to remove her lest he should share the fate of the Plum-head. As soon as I released her in another aviary she went and examined a nest-box to show me that her objection to my matrimonial plans were just to spite *me* and not because nesting was not yet in her mind!

After waiting several weeks I made another attempt, this time turning the cock into her aviary, so that her dignity might be preserved and she might have no excuse for being out of humour at the critical moment. When the cock called to her and began to display she answered him and for a moment seemed inclined to be friendly; then, realizing, I am sure, that if she relented she would give satisfaction to her hated owner, she turned on him as viciously as before. Again

and again he tried to pacify with fair words and courtly gestures and by bringing up food from his crop, but she got more and more furious and soon he was badly scared and flying for his life. Thinking that perhaps he was personally distasteful to her I removed him and introduced the other cock. He, too, tried to make himself agreeable and he too was soon in danger of his life. Thoroughly disgusted with the little vixen and knowing that, like the Duchess' Baby, "She only did it to annoy because she knows it teases"—for she was quite in breeding condition—I told the aviary attendant to inflict upon her the punishment reserved for dangerous wife-beaters and cut her wing so short that she could only fly with difficulty. The next time she went for the cock she gave herself a nasty fall which was no more than she deserved, though any chances of nesting appeared definitely removed until 1932; a shy breeder even when full-winged, it seemed certain that she would do nothing with her lower flight curtailed. It was several weeks before she and the cock were on reasonably friendly terms, but at the end of May I was rather surprised to see him feeding her and the provision of a nest of the same type as the Derbyans' aroused a somewhat lukewarm interest. However, as her usual time for moulting was already at hand, I still felt sure that nothing more would be done. About the middle of June I was very disappointed to hear that the cock Layard had died suddenly of pneumonia—that tiresome scourge so prevalent in summer, so rare during the colder weather—and as I had given the second cock to Mr. Ezra I was once more left without breeding hopes or prospects. I thereupon made up my mind to get rid of the hen also, as I was weary of her abortive pretences at nesting and of her most evil temper. (It is curious how one grows tired, even of a rare bird, if it has a thoroughly unpleasant character!) But Mrs. Layard, aided by the evil spirits with which she is undoubtedly in league, was more than equal to the occasion. Regardless of the fact that she was recently bereaved; regardless of the fact that her wing had been cut at the beginning of the breeding season; regardless of the fact that she was long overdue to moult; regardless of the fact that during the course of five years' happy matrimony with Plum-head No. 1 she had never been able to lay; even as I hardened my heart against her, the little

beast rushed into her nest, laid four eggs, and sat on them with unflagging devotion for more than the full period of incubation—for they proved infertile! Now, of course, as she is a potential breeding hen, I shall have to keep her, and a look of triumph is mingled with the unutterable malice of her glance as every morning she races to bite me when I put in her food and curses me as I change her water!

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## M. A. DECOUX'S AVIARIES AT GÉRY (H<sup>TE</sup> VIENNE)

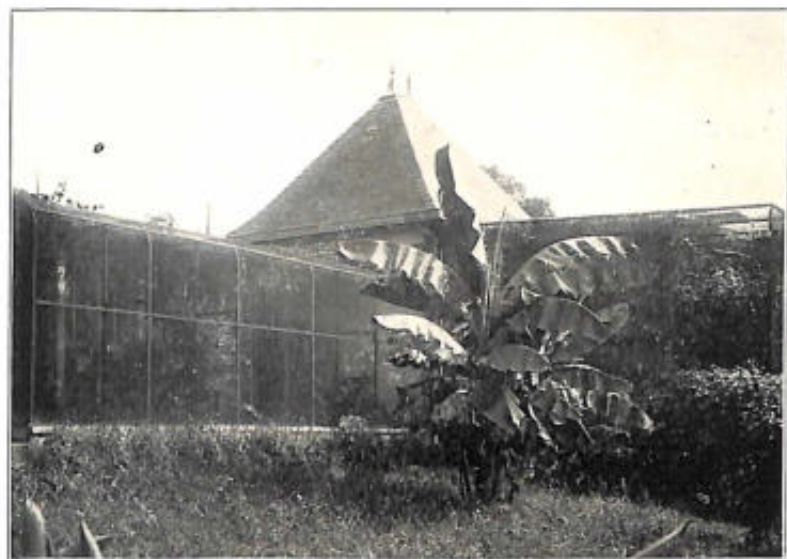
By J. DELACOUR

M. Decoux's collection of birds is certainly well known to the readers of the AVICULTURAL MAGAZINE, as during the last twelve or fifteen years it has been described several times and many accounts of the keeping and breeding of rare birds in his aviaries have appeared in our pages.

In 1928 (p. 259), Mr. Ezra gave us a short description of the collection; I shall only add a few comments and point out additions made since.

M. Decoux started keeping birds as a boy, more than twenty-five years ago, always specializing in small ones, such as Passerine Birds, Parrakeets and Pigeons. Of a more careful and studious aviculturist I do not know, nor of a more successful one in keeping in perfect health and breeding these groups of birds. His successes have been so numerous that I can only say here that they apply to different species of Tanagers, *Turdida*, *Timeliida*, and to numerous true Finches and Weavers, without mentioning several species of Parrakeets and Doves. This season, M. Decoux has bred the following birds:—

PARRAKEETS.—Crimson-wing (seven from two pairs); Red-rumped, Stanley's, Yellow-bellied (five); Bauer's (two broods, one in February); Mealy Rosellas (three); and many Nyasa, Black-faced, Fischer's and Masked Lovebirds; hybrids Fischer's and Peach-faced; and various shades of Budgerigars. Swifts, which were reared successfully last year, failed to rear the first brood, but are nesting again.



MONS. DECoux's AVIARIES AT AIXE-SUR-VIENNE.

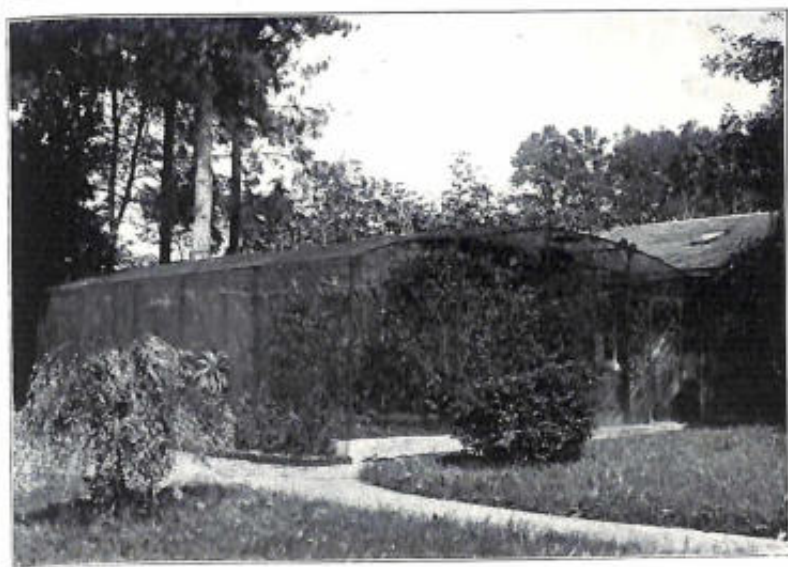
FIG. 1.—AVIARIES FOR LORIES AND WAXBILLS.

FIG. 2.—INSIDE OF A DOVE AVIARY. (BRONZE WING PIGEON ♂)

[To face p. 286



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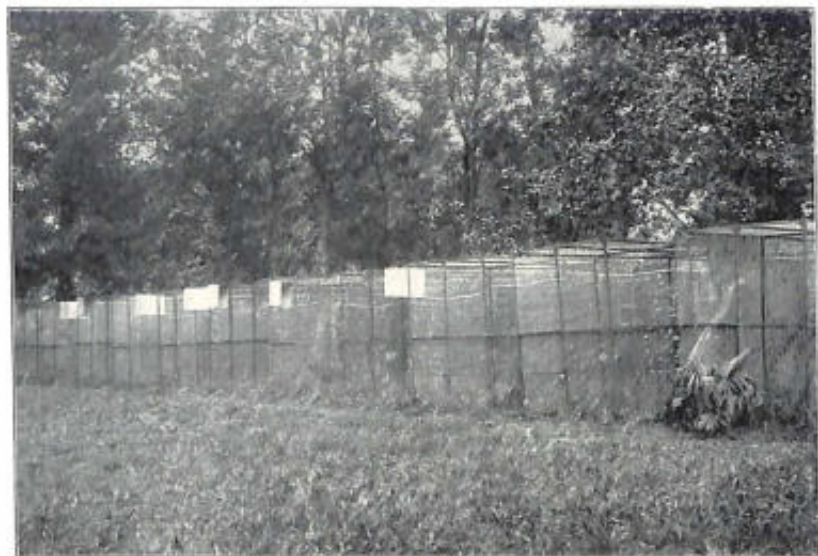
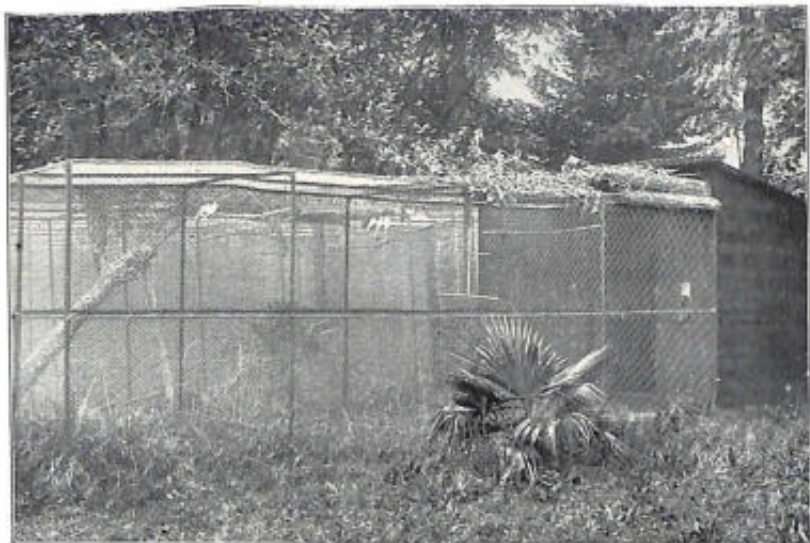


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MONS. DECOUX'S AVIARIES.

FIG. 1.—AVIARIES FOR SMALL BIRDS.

FIG. 2.—DOVE AVIARIES.



MONS. DECOUX'S AVIARIES.

FIG. 1.—A MOVABLE AVIARY. (WHITE BUDGERIGARS.)

FIG. 2.—A RANGE OF MOVABLE PARRAKEET AVIARIES.

*To face p. 287.]*

PIGEONS AND DOVES.—Wonga-wonga; Bronzewings; Bleeding-Heart; Dwarf Turtle Dove; Crested Pigeon; Mauge's; Peaceful; *Chrysis*; Diamond; *Caniceps*; S en egal, etc.

PASSERINE BIRDS.—Red-crested Finch; Virginian and Green Cardinals; Black-breasted Siskin (*Spinus ictericus*); and hybrid with Canary; Superb Spreos; Blue Robins; White Bengalese; Zebra Finches, and a few other Waxbills and Australian Finches; although the damp season and various accidents hindered the breeding of this category of birds this year. Shelley's Spreos made a nest, but did not lay.

Among birds recently arrived at G ery, I should mention Black-crested Yellow Bulbuls; Racket-tailed Drongos; Crimson-crowned Whydahs (*Coliuspasser laticauda*); White-rumped Bicheno's Finches; Tambourine and Bartlett's Doves; Crimson-backed Waxbills; Brush Bronzewinged Pigeons and Grayson's Doves, Motmot, etc.

The aviaries at G ery, are scattered through the gardens in small groups. All are well built of slender iron posts and fine mesh netting, with substantial, but unheated shelters, with the exception of a few. On the left of the house, one finds first a row of six roomy flights, some thickly planted, others bare, according to whether they are occupied by Doves and small birds, or by Parrakeets. Some way further on, there are many movable Parrakeet aviaries, designed after Lord Tavistock's plans but made of iron instead of wood, and therefore more permanent and also more pleasing to the eye.

On the right side of the house, in a flower garden, there are several small isolated aviaries for small Parrakeets and Doves. Then comes a block composed of one large and high flight, with a spacious indoor house, thickly planted, where Waxbills and other small birds live in numbers; this is the first aviary that M. Decoux built, many years ago, and where scores of species have reared their young. On each side there are five and six small compartments, each containing a pair of small Lorrikeets, Parrakeets and often also some Finches; these are heated in the winter. In a meadow there is a large flight, full of thick trees and bushes, where many pairs of different Pigeons and small birds breed freely; not far from it one sees several more Parrakeet aviaries. The installation is completed by a good-sized

bird room, well heated, with several fixed aviaries and many cages. Thereto M. Decoux removes a few of his most delicate birds during the winter and in it he also keeps all his pets and cage-birds, such as Tanagers, Sugar-birds, Sun-birds, various Starlings, Toucans, Jays, and other middle-sized and small insectivorous and frugivorous species, and also song birds. All the birds are most carefully watched and tended under their owner's constant supervision; and remain in perfect condition.

If one thought that the climate of this part of central France is favourable to bird-keeping, he would be greatly mistaken; the Limousin province, where Géry is situated, is very comparable to the more hilly part of northern England for aspect as well as climate. Standing at an altitude of about some 1,000 feet, it is a very pretty country of rolling hills, with numerous hedges, woods and isolated trees, damp and rather cold the greatest part of the year, with a very uncertain summer. Under such circumstances, the credit of breeding difficult birds is just as great for M. Decoux as it would be in Derbyshire or Yorkshire, for example.

A remarkable point is that, at Géry, there are nearly always quite a few pairs of breeding birds kept together successfully, such as one pair of Parrakeets, one pair of Doves and some of small birds, or in other cases, pairs of four or five different species of Doves in the same aviary. The results, however, are satisfactory, as the birds are watched carefully and also associated according to habits, and even to individual temper. Care is taken to avoid associating closely related species or those with similar habits.

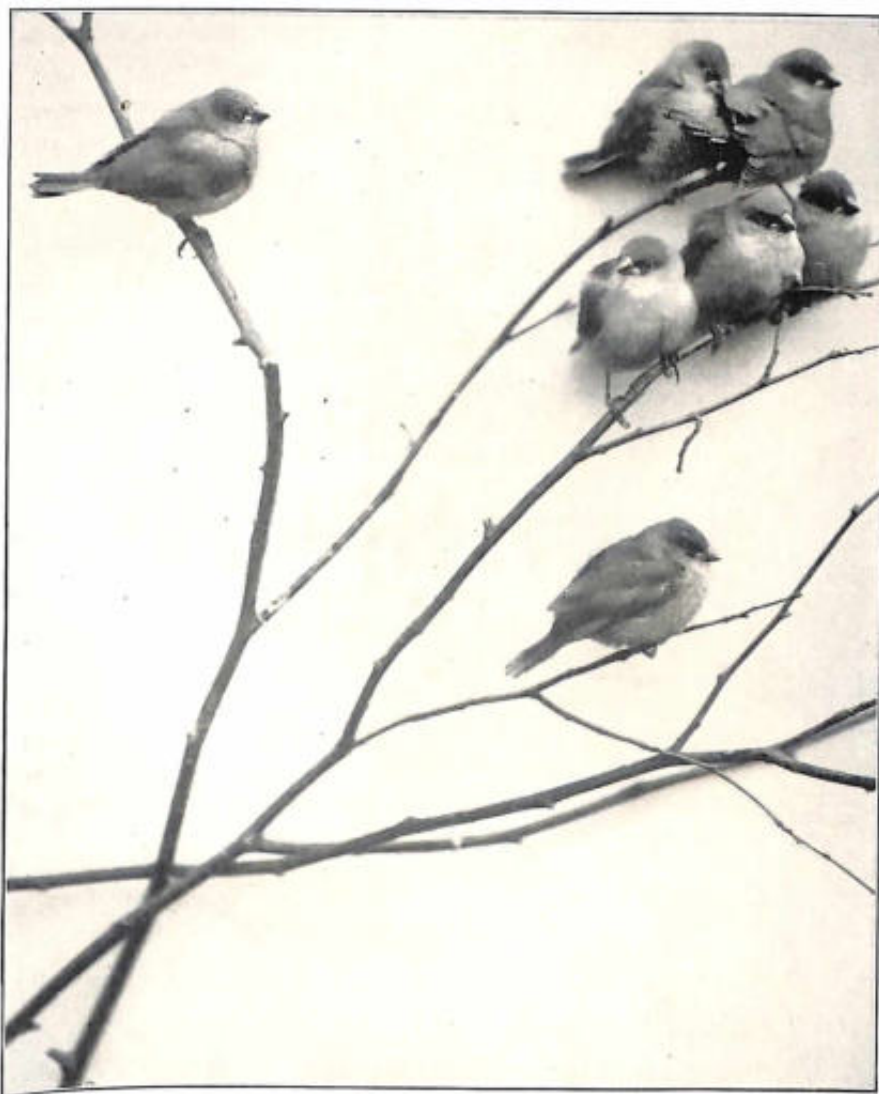
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## CORRESPONDENCE

### BREEDING HYBRIDS AND ST. HELENA WAXBILLS

SIR,—Your readers will, I am sure, be interested to know that my second nest of Hybrids—Bronze Mannikin—St. Helena Waxbill—has come through successfully, and this time I have three young birds which have just left the nest, and look very strong and flourishing.

I hope later on to submit a photograph of them for the Magazine.



"WE ARE SEVEN." YOUNG ST. HELENA WAXBILLS.

Meanwhile, I am sending a photograph of a nest of young from my pair of St. Helenas. You will see they are a fine sturdy lot of youngsters. The nest was built in the outside aviary, in a wooden nesting-box. The whole clutch of eight eggs was hatched, and when one forward youngster left the nest I thought it safer to move the nest-box into the Bird-room. I imagined I had three or four young birds at the most, you can imagine my astonished and delighted feelings when in the middle of the operation the whole family decided to leave the nest and investigate the outside world. As they flew out, one after the other, it literally seemed to be raining young birds, and I wondered if my eyes were deceiving me, or whether I was dreaming. Anyway it was a fact, and I counted up eight, with agitated parents helping to locate them.

Is this almost a record number? I lost one bird, I suppose the last one to hatch, as he was decidedly smaller. The other seven are all in the photograph.

The parents have been wonderful in feeding, and, for my part, I have made it my duty and pleasure to help them in their arduous task. Early rising to procure live food, which mainly consisted of the meadow ant egg (there was always a good supply of this food in the aviary), in fact, I must have been a source of curiosity, being always armed with a trowel and tin box. In addition to this I gave sponge cake and egg, with green fly brushed into it, and plenty of seeding grasses.

I have a nest of four Bichenos, which have left the nest to-day, so I am quite pleased with my breeding results this season.

ELSIE ROBINSON.

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#### RARE FINCHES

SIR,—In the August number of the Magazine Dr. Hopkinson mentioned two Finches which he had seen in my possession in July, 1930. Both birds are alive and well although the *Neorhynchus* has now been imported nearly three years.

The *Neorhynchus* is certainly not *nasesus*. When I first obtained the pair (the hen died before Dr. Hopkinson saw the cock) I compared them with the skins at South Kensington. In *N. nasesus* the cock is

a grey or rather black and white bird about the size and very similar in marking to the little White-throated Grosbeak. My bird is much longer on the leg, slightly larger and is distinctly brown, the mantle and rump being almost chestnut, the flights and tail feathers being edged with very dark brown or black. The hen was not nearly so bright and had a dark horn-coloured beak, the cock's beak being black. The only two species of *Neorhynchus* represented at South Kensington are *nasesus* and a much smaller sub-species of almost exactly similar colour.

The other bird mentioned in Dr. Hopkinson's letter, *Sporophila ruficollis* is a very fine songster for his size and is one of those satisfactory birds which always seems to keep in paint-like plumage. He came into my possession about a year and a half ago with a very fine specimen of *Sporophila minuta parva*, the smallest of all the Grosbeaks. I sold this latter bird to our member, Miss K. Gamble, who still has it, I believe.

*S. ruficollis* is undoubtedly a fully mature cock. South Kensington has only one skin of this little Grosbeak and that is, I should say, an immature cock. I cannot say if any of the other collections of skins are better provided with specimens. The colour and marking of *S. ruficollis* is so very distinctive and different to that of any other of *Sporophila* that once seen no mistake could be made in identification.

Another bird which I have obtained since Dr. Hopkinson visited me is a Finch-like Cowbird, *Molothrus fringillaria*, known, I believe, as the Pale Cowbird. South Kensington boasts only one skin of this bird, obtained in Mexico about 50 years ago. A shorter and more robust bird than most of the *Molothrus*.

I shall be pleased to show these three birds to anyone interested if they care to call and see me but they are not for sale.

E. F. E. HAMMOND.

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#### IN A CORNISH AVIARY

SIR,—Is this a year for hybrids? In the spring I put into one of my aviaries a pair of Fawn and White Bengalese with a pair of Zebra Finches and various other paired-up Waxbills, also one odd cock Nutmeg Finch—I hope you won't ask me which species of *Munia* he

belongs to, I know there are three or four ; I purchased him with a few odd Waxbills out of sheer pity. The Bengalese for two or three months kept very much together, when the Nutmeg Finch got bolder and demanded admittance to the nest. A fortnight ago four charming brown birds were flying about the aviary, with Father Nutmeg and both Bengalese taking great care of them. In shape they take after their Bengalese parent, but the brown is of the father; they are paler underneath, there is no lace marking.

Of the Gouldians I purchased last April and May only two pairs survived, the first pair went to nest as soon as I turned them out into their outdoor aviary, giving me five in the first nest and six in the second. The hen was sitting when I took away her mate to send to Paignton Show, where he gained "v.h.c.", notwithstanding having reared eleven youngsters! Good old fellow. I thought it would give his wife a rest. The second pair were decidedly troublesome; Mrs. Gouldian would have nothing to do with the home that was made for her, so after a while out she went to end her days a grass widow. I put in another hen, and she has proved successful, four young being reared.

The Gold-breasted Waxbills and Avadavats have reared few this year; as a matter of fact all were reared, but so few eggs were laid, doubtless owing to the lack of sunshine—that sentence will startle a few who think Cornwall is all sunshine. Ask the holiday-makers! However, one pair took 2nd at Paignton, and were in gorgeous colour. The Bengalese were not so prolific, either, one nest seemed to be sufficient for three months, then a second, and that's all!

The Violet-eared Waxbills were admired by all who saw them from April till now, and they gained a 1st at Paignton. I put them into the show hoping the other birds would inform them of their parental duties, but opposite them were wise old Parrots—hence "nothing doing!"

The Pectoral Finches had four chicks, but failed to rear them—very disappointing; also the Nonpareil Buntings dropped their young ones out of the nest one a day. The second nest went the same way. Somebody tell me why, please! The trouble in Cornwall is there are so few ants about, and when found never at the right time.

The young of the Zebra Finches have nearly all turned out cock birds—no doubt owing to the wet weather the ladies would not venture forth! However, one pair went to Paignton and took 2nd, the 1st prize going to a very nice pair of White Zebra Finches so unique that I should like to possess a pair. I may add that Paignton was my first show, and I am very pleased at having secured the "Whitley" Challenge Cup for 1931.

The charming little Orange-cheeks have had their ground floor nests drowned out twice, but the third appears to be more successful.

I think that is all—except that I have the most darling White Marmoset, which ranks equal to all my birds, and in the future I should delight in a pair of Wallabies (Bennetts) like I saw hopping about in that paradise of bird-lovers, Foxwarren Park.

(Mrs.) K. DRAKE.

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#### A HUMMING-BIRD MORE THAN THREE YEARS IN CAPTIVITY

SIR,—We have just lost our Ricord's Emerald Humming-bird, *Riccordia r. ricordii*, which lived here for 3 years 4 months and 5 days.

This certainly is the best American record, and I have been carefully through the AVICULTURAL MAGAZINE and various other sources of information to see if there is a really definite European record to exceed this. I have been unable to find one, but neither can I find anything definite about the results of the Marquess de Segur.

I am sorry to trouble you in such a trivial matter, but wonder if you know off-hand what the best European records are.

It will be of interest to you, I am sure, to know that our male Long-tailed Bird of Paradise, which was in immature plumage when collected in 1928, has now assumed full adult colouration. He is a magnificent creature, and I wish that you could see him.

LEE S. CRANDALL.

[This is certainly a splendid achievement and a record.—ED.]

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John Day & Son, London

Turquoise Parrakeet  
*Neophema pulchella*, ♂♀

# THE AVICULTURAL MAGAZINE

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## THE TURQUOISINE GRASS PARRAKEET

This delightful Parrakeet, not very much larger than a Budgerigar, was at one time, fifty years or so ago, a comparatively common bird in European aviaries, where it bred freely: in fact, the edition of the Zoological Society's List of Animals, published in 1883, gives a dozen references to the species breeding in the Zoological Gardens between 1860 and 1882. But from that time onwards it became scarce, and the only reference in the next edition is of a male and two females purchased in 1884, since which time it appears to have completely died out as an aviary bird.

When in Australia twenty-three years ago everyone who was best able to judge told me that the Turquoise was believed to be extinct. I remember travelling by train between Sydney and National Park, when my Australian companion, pointing from the carriage window, told me that when a boy he and others used to journey out to the district through which we were passing to shoot Turquoisines for "Parrot pie"! But none had been seen for years past. It was not only the shooters or the trappers who were responsible for the disappearance of the Turquoise. Its food is grass-seed, and the grass on which seed formerly formed has long since been fed to sheep, so there is no seed left, or at any rate, not enough to support the stock of Grass Parrakeets that formerly existed. But the Turquoise is fortunately not yet extinct, as was at one time feared. It has reappeared in small numbers, and our member, Mr. S. Harvey, of Adelaide, has

successfully bred it in his aviaries on several occasions in recent years. Here in England there are at the present time half a dozen pairs at least, and at the Zoological Gardens, after more than forty years, a pair may again be seen in the Parrot House.

The Turquoise (*Neophema pulchella*) is a native of the south-eastern portion of Australia, and in South Australia the even more beautiful Splendid or Scarlet-breasted Parrakeet (*N. splendida*) has its habitat. But that was apparently a rare species since the days when Australia was first discovered by the white man and, like the Turquoise, for years past it has completely disappeared. Like the Turquoise again, it has now been rediscovered, and we hear that our friend Mr. Harvey has two pairs in his aviaries. We must all wish him success in breeding them for I believe that these nearly extinct species will only be kept in existence by careful conservation in captivity.

D. S.S.

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## A COLLECTOR IN GUIANA

By C. S. WEBB

The excellent coloured plate of Manakins in the September issue has prompted me to write a few notes on these, and other birds of interest, which I observed whilst in British Guiana.

The Edward's Manakin (*Chromachæris manacus*) is also known as the Crackling Manakin on account of the curious call of the male bird, which is like the sudden snapping of sticks or like a small Chinese cracker going off. I have only seen this species in parties of about eight to twelve, consisting of both sexes, and for some unaccountable reason each party takes a liking to one particular spot amongst the undergrowth, where it can be found all day and every day for months on end. An abundance of berries which ripen in succession is an essential part of their abode, but although similar places can be found in plenty, these parties never seem to leave the place of their choice. In this respect they differ from all other species of Manakins which I have seen.

They are not easy to keep in captivity and liberal supplies of their

natural food (small juicy berries) must be given for some time before they will take to, or thrive on, an artificial diet. Even then they have a habit of "popping off" suddenly when looking quite fit, which is probably due to over-fatness as they do not exercise themselves much in a cage. But I rather suspect that most of them are infected with *filaria*, a complaint caused by mosquitoes and which does not seem to affect them in their wild state, but when newly captured the changed conditions and diet no doubt tend to make the birds lose some of their vitality and then the *filaria* gets the upper hand. The victim gets staggering fits and the head is thrown backwards—a state from which it never recovers. It was in East Africa that I first became aware of this complaint in birds, when three out of every four Jacanas caught in the mosquito-infested swamps went the same way. Subsequent blood-tests proved that they were full of *filaria*—minute worms in the blood.

Some of the Manakins are very beautiful but owing to their retiring habits they are exceedingly difficult to observe in the thick undergrowth, and the slightest disturbance causes them to disappear. After many arduous journeys through the swampy forests I managed to capture, amongst others, a Golden-headed Manakin (*Pipra erythrocephala*), perhaps the most beautiful of the whole family, but very small and delicate. The body is glossy blue-black and the entire head golden, with a silky appearance. I managed to keep this gem alive until nearing the shores of England, when the intense cold at night killed it.

Guiana possesses many rare species of beautiful birds, but unfortunately they are both difficult to capture and to keep alive. I was very keen on getting some of the lovely Trogons to be found there, but they are rarely seen and it is only after one has learnt their call-notes that they can be located successfully. After watching a pair closely I quite thought that it would be hopeless to ever attempt trapping them in a huge forest where the trees are such a tremendous height. However, after tracking another specimen down by its call I noticed it clinging to a termites' (white ants') nest which was attached to the trunk of a tree about 30 feet above ground. These nests are made of earth which sets hard and are usually about twice the size, or more, of a football and are full of cells containing white ants and their eggs,

the whole being covered with a crust. I noticed that a small cavity had been made, exposing the cells, and it was not long before the Trogon commenced "hammering" in the manner of a Woodpecker. This was rather a surprise, as I was under the impression that American Trogons were entirely frugivorous.

It did not take me many days to learn that this was a habit of all the Trogons, i.e. other species as well, and that a good percentage of the termites' nests had one or more cavities, and that these were visited periodically by Trogons, and by Trogons only. Whether this was done to provide food for themselves or for their young I am unable to say, but it was the nesting season. Anyway, the discovery enabled me to capture a beautiful pair of Black-throated Trogons (*Trogon rufus*), a species with the upper parts metallic green and the under parts orange yellow, and also a pair of Green Trogons (*T. viridis*), a larger species with the head and breast deep blue. However, they are very difficult in captivity, it being very hard to induce them to eat much, even of their natural food. In their wild state they have the habit sometimes of sitting perfectly still while danger is at hand, which might give one the impression that they were dull and stupid. That this is far from being the case, the following incident shows. One day I watched a Trogon approach a parasitic fig (?)—a few branches jutting from its host—on which were some ripe berries. It did not alight on these branches but settled on a neighbouring bush some 12 feet away. After sitting quite still for about a minute as if not interested in anything, it made an upward dart towards the ripe berries, picked one during its flight, and then returned to its original perch to eat it. This performance was repeated seven or eight times before the Trogon flew away. I thought it rather a laborious and unnecessary way to gather berries when it could have alighted and have had a good feed without any trouble, but simple as his actions appeared, in a few seconds I discovered that this Trogon was no fool. Hardly had he left when a Palm Tanager arrived and alighted right amongst the berries. Immediately there was a great commotion and the bird appeared to be held fast and was struggling violently. Running up I saw that it had been caught by a Green Sharp-nosed Tree-snake which made a welcome addition to the other reptiles which I had collected for the London Zoo.

Some of the Puffbirds (*Bucconidæ*) are very pretty but very difficult to keep in captivity as they require quantities of live food and, moreover, they seem very stupid and difficult to tame. They look like a cross between a Kingfisher, and a Barbet, and have a slightly hooked bill. They really belong to the Broadbills and have the habit of sitting motionless on a branch where their colours harmonize perfectly with their surroundings, making their detection very difficult. Thus they remain for long periods until some tempting insect comes within range. Even in face of danger they remain perfectly still, allowing one to pass within a few yards. No doubt they realize that this is their best means of protection, a habit probably acquired to defeat the sharp-eyed Hawks which frequent the bush and which are quick to detect any movement that is going on.

In the virgin forest in British Guiana the trees are an enormous height and although being branchless for perhaps 100 feet up, there is a dense mass of foliage at the top, numerous parasitic growths and epiphytal orchids joining in the struggle for air and light. There is a distinct type of bird life which frequents this upper "world" and includes many brilliantly-coloured birds such as Parrots, Macaws, Toucans, Cotingas, Tanagers, and Jays, all of which subsist on the fruits and berries of these forest giants; but observation of them from the ground is well-nigh impossible. Mention must now be made of the Hoatzin (*Opisthocomus hoazin*), which is one of the world's ornithological wonders. A great deal has already been written about this bird, but having been concerned in the collecting and bringing over of the specimen now in the London Zoo, perhaps a few remarks will not be out of place. The Hoatzin is extremely local and has the distinction of being the only bird which feeds entirely on leaves. It is fairly large, and somewhat clumsy in its movements, and small flocks can be seen in the same spots every day and from which they scarcely ever move. This sluggishness is accounted for by the fact that they live almost entirely on the leaves of the Pimpler Thorn, a bush which only grows on the edge of certain tidal rivers and creeks. Consequently they do not require to hunt for their food as they are always in close contact with it. Externally this bird is not very remarkable, but anatomically it is unlike anything else. For one thing, nearly all the sternum or breast-

bone is missing, the space being taken up by a huge crop which is kept full of leaves. The most interesting peculiarities of the Hoatzin, however, are confined to the young birds. The nests are always built over water and the young ones, when disturbed by an intruder, are in the habit of diving and swimming whilst submerged, like a Grebe. When danger is past they climb back to the nest by means of hooks and feet, there being two of the former on each wing for this purpose. When the young become feathered and are capable of flight they never dive nor swim again, neither do they go down to the water's edge, as they never drink; moreover, the wing hooks disappear.

They are reputed to have an abominable odour which no doubt serves as their only means of protection, but it is curious that this is not noticeable in captivity so it is probably caused through their diet. On bright moonlight nights Hoatzins become strangely active and noisy, periodically flying about in a restless manner uttering their call-notes, but there are long periods of absolute quiet. On such nights I have observed them feeding, but when it is dark they never budge. They are supposed to be a direct link with a remote period some three million years ago when birds were reptilian in structure and habits, and from which state all other present-day forms have evolved. They are not very hard to keep in captivity in their native country, but the difficulty of getting daily supplies of fresh leaves on the long voyage home, and the sudden changes of climate, render their successful transportation to this country very difficult indeed. Presumably on account of their diet being very poor in food value, Hoatzins perish immediately they are subjected to the sudden change to a low temperature. In their mating habits they resemble, more or less, Domestic Fowls. There is no preliminary displaying or courting, and a female who contemplates starting a home is forcibly taken possession of by a male. Frequently this arouses the jealousy of another male who happens to be close at hand and the first one is promptly chased away, the newcomer taking charge, an act which leaves the female quite unconcerned.

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## THE NESTING OF WORCESTER'S HANGING PARROT

By THE MARQUESS OF TAVISTOCK

About a couple of years ago a fair number of this rarely-imported species arrived as part of a collection of Asiatic birds. Although probably little more than subspecifically distinct, *Loriculus chrysonotus worcesteri* is easily distinguishable from the handsomer Golden-backed Hanging Parrot of Cebu (*L. chrysonotus*). It is distinctly smaller and the strip of colour running from forehead to nape is of an almost uniform orange red, whereas the Golden-back has a little patch of red above the nostrils which changes abruptly to buttercup yellow. The hen *worcesteri* is easily distinguishable by her bluish cheeks and by the absence of any orange red on the throat. It has been stated that the sexes when adult are alike in colour but, frankly, I do not believe it. It is most unlikely that so small a bird would remain several years in immature plumage, and if any hen *worcesteri* has really been found in male dress she must have been barren or abnormal.

My pair, when acclimatized, were transferred to a large outdoor aviary with a heated shelter, sharing their food and quarters with a Purple Sunbird whom they did not molest although they put him in his place when he tried to interfere with them. The cock *worcesteri* was rather a poorly-coloured specimen with a very small throat-patch, and somehow I never thought of the pair as likely breeders. However, in early May they showed evident intention of being ready to nest, the cock feeding the hen after the fashion of the genus, opening his beak rather wide and allowing regurgitated nectar to run from the tip of his tongue on to hers. I provided them with a peat-filled grandfather-clock nest communicating with the aviary shelter, in which the hen soon began to take an interest, collecting grass and carrying it tucked into the feathers of her flanks and rump much after the fashion of a Peach-faced Lovebird. The Hanging Parrots had been pairing and I was daily expecting eggs to arrive when one morning I found the cock missing. I searched the aviary but could discover no trace of him, dead or alive. At last a small hole in the wire netting quite low down

provided the clue. He had accompanied the hen on one of her grass-gathering expeditions, found the exit, and made his escape—really splendid luck! I never saw him again. A Hanging Parrot is strictly arboreal, never venturing near the ground when at liberty, and its weak cry is inaudible 50 yards away. There was nothing for it but to introduce my bachelor cock Golden-back to the grass widow. She seemed a little surprised at the change but on the whole took it fairly philosophically. The Golden-back was delighted and displayed freely, turning round and round, giving an occasional bob and curtsey, and opening and shutting his beak. The elegance of his courtship was, however, much impaired by the Sunbird. That little rascal, who at all times has rather the manners and temperament of a street urchin, detected in a moment that the newcomer was not the male Hanging Parrot to whom he was accustomed and decided to cheek him. When the poor Golden-back was trying to look his best for the benefit of the Worcester, the Sunbird planted himself alongside him and struck gallant attitudes with one foot advanced and his beak in the air. He then took wing and flying underneath the Golden-back gently but firmly seized the tip of his tail and hung on. If I had been the little Parrot I should have bitten him hard, but the Golden-back endured the indignity without the least effort at retaliation, looking rather like a man who tries to appear at his best in the presence of his beloved even though a small boy persists in hanging on to the seat of his trousers! After about ten days the Worcester disappeared into her nest-box and seemed to be sitting. The Sunbird I was obliged to remove as he worried the Golden-back so badly that he seldom ventured to leave the aviary shelter. After about three weeks we examined the nest and found it empty. The Worcester had been patiently incubating the abstract idea of eggs! After this disappointment I did not take much interest in her proceedings, but in late July she seemed to be sitting again and did not desert her nest even when it became necessary to cut her overgrown claws. This time, however, she remembered the eggs and produced three, but unfortunately all proved clear. A second clutch of four were also incubated for the full period with no better success. The disappointing results with this species and the Halmaheira Hanging Parrot make me pessimistic of ultimate success.

Both pairs of birds had lived for some years in large outdoor aviaries, both appeared in full breeding condition, and both hens were model sitters. The wet and inclement summer may, however, have had something to do with the lack of fertility as the season has been very disappointing all round.

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## THE ROCK BUSH-QUAIL

By H. L. SICH

For the last five years I have had a little flock of these birds, *Perdicula argoondah*. Once there were seven, now owing to accidents, escapes, and sending some away they are reduced to two cocks, and I cannot get a hen.

They spend their time hidden in the grass squeezed up to each other as close as possible regardless of sex or age. During incubation the hen sits alone and it must be a melancholy time for her. As soon as the chicks are hatched they all join up again. At intervals during the day, when they think that the coast is clear, they troop off to the food dishes. Sometimes one gets left behind and suddenly finds that all the others have gone back; it calls out; this upsets the others, which get up and run about in all directions in an agitated manner calling and looking for the missing bird; when found they all settle down. I find that they always roost in the middle of the floor of the shelter in a ring with heads pointing out, I suppose so that on any sudden alarm they are ready to fly off each in a different direction without colliding.

Wilder birds I have never had. Going into the aviary they all splash up under one's feet, like water when a stone is thrown into a pond, banging into the wire sides, but they never have injured themselves as other birds do, because they hit the wire with their breasts and not their heads, and do not fly high enough to reach the top.

Once one of the hens made a nest in a box turned on its side owing to the shortage of better cover, but the eggs got cracked on the hard surface. I ought to have knocked out that side first. Although so

wild at other times the hen would let me stroke her without leaving the eggs. Four white eggs seems to be the usual clutch.

In January, 1930, when they were reduced to three cocks and a hen, thinking to get them tamer I brought them into a room, which I always occupy in the evening, in a large cage. They did not get the least tame, but the hen started to lay. She would not sit, and laid twenty-three eggs. Not wishing to exhaust her, they were turned out into a little flight of  $12 \times 6$  feet, with a small shelter  $6 \times 4$  feet at one end and a door at the other, where I had to go just inside to feed and water the birds. One morning there were some pieces of white stuff a few inches from where I trod every day. A closer inspection showed that they were pieces of egg-shell surrounding the sitting bird: she had just hatched out four chicks. I had never noticed her before. Toward the evening she had joined the two cocks; the other one I had parted with.

At a fortnight all the young are able to fly, as the flight feathers are the first to develop; it seems as if they must be continually moulting them for larger ones in order to keep pace with their increasing weight, which must be a considerable drain on their strength.

On the 20th of October I went to catch up the four young to send away. After the first attempt and they were scattered, I had to go down on my hands and knees and hunt and pick them out of the grass, completely destroying a second nest and spilling the eggs. After caging them all in order to pick out the young birds I re-made the nest and put the eggs back. The hen actually went back and hatched out one egg. The chick died in a few days, probably from want of attention, as she stuck to the other eggs which were addled.

I lost the hen in the winter. She got through a hole into an empty flight and was dead when discovered.

These birds, armed with spurs, never seem to fight among themselves, but I do not trust them with other Quail owing to several suspicious deaths. They do not like our cold, wet winter, spending most of the day in the warmed shelter. They seem to thrive on seeds and a little soft food when adult. The young were chiefly fed on ants' eggs.

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## BREEDING OF THE PILEATED FINCH (*CORYPHOSPINGUS PILEATUS*)

By B. C. THOMASSET

During the last two years a good many Pileated Finches appear to have been imported, but lately a dealer told me that they were not popular birds and they did not sell readily. This, I think, shows a want of perception on the part of bird-keepers. The Pileated Finch is not a gaudy bird, but it is quite attractive in appearance and its character is charming.

All that I have had have been particularly tame and friendly, and in an aviary they are always in evidence. They are not spiteful with other birds, though they will defend their nest from intruders.

I find them more insectivorous in their diet than either Nonpareil or Indigo Buntings, and they seem to require a fair amount of insect food throughout the year. Mine have a few mealworms daily in winter when wild insects are scarce.

No account of successful breeding has been published since that of Mrs. Howard Williams in 1905.

During the summer of 1930 a pair of Pileated, which shared an aviary with Doves and Grass Finches, nested three times. On two occasions young ones lived to leave the nest, but none were fully reared.

As is usual with Buntings, they will feed their young ones only with living insects for the first few weeks after hatching. Later on a certain amount of seed is given. I have watched both Pileated and Nonpareils feeding their young and have never seen food regurgitated. The seed is shelled and carried in the beak.

This year my Pileated Finches have nested three times, and at the present time (September) the hen is building her fourth nest in a plant of helenium.

All the nests have been small and frail, but well-woven affairs, constructed of fibre or tow. The two former were in a dead branch of laurustinus sheltered overhead by iron sheeting, whilst the third was in a large plant of Michaelmas daisy. The birds evidently prefer growing cover when they can have it. The hen alone builds the nest.

The clutch has consisted each time of two eggs only, white in colour and large for the size of the bird.

As far as I can tell, the hen sits for eleven or twelve days. The cock takes no part in incubation, though he occasionally feeds the young ones. In the case of my birds, the mother did nearly all the work. The nest is kept perfectly clean, the excreta being carried as far away as possible.

The young leave the nest in about ten days. They resemble the hen in plumage, but wings and tail are not nearly fully grown, and they can fly very little. The first days after leaving the nest are a critical time. The little birds seem to have a genius for establishing themselves in exposed and unsuitable places, and they will never remain where one puts them.

I now have two strong young Pileated Finches which are independent of their parents. They came from the second and third nests respectively. The father still occasionally feeds the younger one now that the hen is occupied with her fourth nest.

I may say that the pair wintered in an unheated aviary. In cold weather they spent most of their time in the shelter but, by mistake, they were shut out in the open flight on about the worst night of the season. They seemed to be none the worse for this uncomfortable experience, and may fairly be classed as hardy birds.

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## REARING THE MADAGASCAR PARTRIDGE (*MARGAROPERDIX MADAGASCARIENSIS*)

By ALFRED EZRA

This very attractive bird belongs to a very peculiar genus, intermediate between Quails and Partridges, with no close relatives anywhere in the world. It is purely a ground bird of open grassy country, or short bush, and is never found in woods. It occurs all over Madagascar, as much in the dry west as in the damp east, in lowland as well as on the high plateau. Very common everywhere, he is a skulker, and hardly ever gets up, so he is easier to trap than to shoot. It is said to be white in flesh, and very good to eat; practically never imported,

although so common, and very easy to catch alive. This Partridge was bred in the Jardin d'Acclimatation in Paris in 1890, but never in England. I purchased two pairs from Mr. Webb last year, and turned them out, one pair in each small aviary with a good many other birds. They were always delightfully tame, and settled down at once. Although they were displaying, and the cock bird feeding the hen, they made no attempt at nesting early in the season, but the moment I let one pair out in my largest aviary, where the grass was allowed to grow quite high, they nested and hatched five healthy and strong young ones about the end of July. I did not know they were nesting till I saw the adult birds walking about proudly with the five chicks. Unfortunately, three of the chicks were drowned in the torrential rain we had about the middle of August. The other two have done splendidly, and are a good size now. Although very shy when they were first seen, they are quite friendly now, and run up to me on their own for mealworms. I hope next year to breed a good many as they are most attractive birds, and well worth establishing in this country.

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## SUCCESSFUL BREEDING OF *GALEOPSAR SALVADORII* AND *LEUCOPSAR ROTHSCILDII*

By ALFRED EZRA

At last after several attempts I have been successful in rearing the Crowned Starling (*Galeopsar salvadorii*). I first started with a pair in 1928, and each year, although nearly reared, the young were thrown out of the nest by the parents. This year in June the same thing happened: the birds laid, and when the young were nearly fully feathered they were found dead in the nest. The birds went to nest again, and this time as soon as the eggs were hatched I caught up the cock bird and put him in a cage in the aviary shelter not very far from the nest. I then let the hen bird have her liberty by leaving the top door of the aviary wide open. She flew out at once, and I thought I was going to lose her, but in five minutes she was back again. I threw a few mealworms outside, and she promptly collected over a dozen in her beak, and flew back to the young, coming out again for some more.

In a couple of days this bird got so tame that she used to follow me about for long distances away from the aviary, flying from tree to tree and calling. As soon as she got a few mealworms from me, off she flew into the aviary. It was a very pretty sight to see her on the wing, and to see the beautiful brown feathers which one hardly sees when the bird is in an aviary. By the first week of August two fine healthy young birds left the nest. On the 20th of August the young birds looked as large as the parents, and I am delighted to have succeeded at long last in rearing them. I am convinced now that the cock bird is the cause of all the past failures. He chases the hen bird about and bullies her to go to nest again. She lays again and deserts the young. I have had this experience with a pair of Shamas, and the Rothschild's Grackle this year as well.

My other success has been with the very rare Rothschild's Grackle (*Leucopsar rothschildi*), but not before several disappointments. I have had a pair of these birds since 1928, and every year they nested and laid, but never reared their young. In fact, in most cases the eggs disappeared from the nest. As they were the only occupants of the aviary one of them must have eaten the eggs. This year they laid three eggs as early as April, and these as usual had disappeared in about ten days' time. She then laid three more, and these eggs I removed and put in a Blackbird's nest in the garden. Again she laid three eggs, and these I put under a Thrush. My gardeners chose these two spots to burn their rubbish, and of course disturbed both the nests, and the two lots of eggs, which were on the point of hatching, were deserted. The next three eggs I put under a Spree in my aviary. These were hatched, and the young half-reared and then deserted. Yet three more eggs were laid, and these I allowed her to incubate. After about a fortnight the nest-boxes, of which I had two in the aviary, were examined, and I was horrified to find the cock bird dead in one nest-box, but the hen was with a young bird in the second nest-box. Of course, I thought there was no chance of my rearing any young after all my bad luck, but to my surprise the hen fed the young bird and fully reared it. The hen bird has always been very wild, and I never once saw her taking any mealworms to the nest. A good supply of mealworms were left in the aviary, and when no one was about she did her

duty nobly. From April to July this bird laid five times, and each time three eggs were found in the nest—in all fifteen eggs, which sounds a wonderful performance. The young bird is exactly the size of the mother, but not quite so white on the back, and the blue skin which surrounds the eye is rather smaller. It is a very strong and healthy bird, and every bit as wild as the mother. This success was doubly welcome, as bad luck seemed to follow this pair all along. I am hoping that the young bird is a hen, so that I can make up two pairs with the two odd cock birds I still have, and again try and rear some more next year. I do not believe either of these Starlings has been reared before. A very good coloured picture of the Rothschild's Grackle appeared in our Magazine in April last.

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## THE BIRDS AT PAIGNTON ZOO

By DR. E. HOPKINSON, C.M.G., D.S.O.

(Concluded from page 251.)

### (26) THE OFFICIAL PARROT HOUSE

A substantial top-lighted heated house with two tiers of cages all round. Here and throughout the whole Zoo open to the public distinct labels, giving name, habitat, etc., are a noteworthy feature. The inhabitants are:—

#### *Cockatoos.*

Three Greater Sulphur-crested, one Lesser, and one Citron-crested.

Three Grey Parrots, one Greater Vaza.

One Senegal Parrot and one Red-bellied (*Poicephalus rufiventris*).

Five Ring-necked Parrakeets.

One Grand Eclectus cock.

One Great-billed Parrakeet, two Everett's, and one Müller's.

Two Macaws, one Illiger's, and one Noble.

One Hawk-headed Parrot, two Blue-headed Parrots (*Pionus menstruus*).

#### *Conures.*

One Patagonian, one Jendaya, two Nanday, two Blue-crowned (*hæmorrhous*), and one Wagler's.

*Amazons*

Two Plain-coloured (*inornata*), and one each, Blue-fronted, Diademed, Festive, Golden-naped (*auropalliata*), Green-cheeked, Levallants, Orange-winged (*amazonica*), Salvin's, Vinaceous, Yellow-cheeked (*autumnalis*), Yellow-headed (*ochrocephala*), and Yellow-shouldered (*ochroptera*).

Five or six smaller cages at one end exhibit a pair each of the Black-cheeked and Peach-faced Lovebirds and examples of first crosses which have been bred so freely and so regularly here. Some of these are certainly handsomer birds than their progenitors and on looks only could hold their own as species.

I have referred earlier to the coloured plate showing these crosses; it represents perfectly the following six:—Fischer's- × -Masked, Fischer's- × -Peach-faced, Nyasa- × -Black-cheeked, Nyasa- × -Peach-faced, Black-cheeked- × -Masked, and Peach-faced- × -Masked.

I also saw other plates by the same artist, one showing the three *Munia* hybrids bred here, Tricolour Mannikin- × -Bengalese, Chestnut-breasted Finch- × -Bengalese and Heck's Long-tailed Grassfinch- × -Spicebird, the second, Whitley's Conure, the third, three other rare Conures (*emma* and two others), the fourth, the head of the Diademed Amazon with its feathered nostrils and that of an ally with unfeathered ones.

Mr. Whitley has found "all his Meyer's and Rüppell's Parrots with all-grey heads are males, and those with yellow on the head and generally brighter, females; this increased gaudiness in the females probably holds good for the whole *genus*."

## (26a) VARIOUS SMALL DOMICILES

(i) Two aviaries near the "Bothie": in one some of the hybrid Chukor, *melanocephalus*- × -*chukor*, and an odd Peahen; in the other a Monal cock and an Occipital Blue Pie.

(ii) An enclosed flight opposite the Macaw Passage door containing Goldfinches, Canaries, Red-beaked Weavers (one moulting out a *russi*), and one Pekin Robin.

(iii) Two small aviaries near the New Waders aviaries: Jackdaws and Magpies.

(27) THE ENCLOSED AVIARIES NEAR CENTRE

No. 1, the hybrid Burchell's- × -Chestnut-winged Starling bred in 1927.

No. 2, one Crowned Starling (*Galeopsar*).

No. 3, a White-throated Finch and another *Sporophila*, a Jacarini, a pair of Zebra-finches and some white Barbary Doves.

No. 4, two Greater Sulphur-crested Cockatoos.

No. 5, a Citron-crested and a Bare-eyed Cockatoo.

No. 6, one Molucca Cockatoo.

No. 7, one Spix's Macaw.

No. 8, one blue and buff Macaw.

(28) THE AVIARIES BACKING ON THE MACAWS

No. 1, a pair of Chestnut-breasted Blue Rock-thrushes, *M. erythrogastra*.

No. 2, Barbary Doves, Zebra Doves, and Java Sparrows.

No. 3, Diamond Doves and a pair of Bullfinches.

No. 4, Diamond Doves and a pair of Rainbow Buntings.

No. 5, pairs of Diamond and Plumed Ground-doves, and a cock Cape Sparrow to pair with a hen Yellow Sparrow.

No. 6, Diamond Doves.

(29) THE BIRDS OF PREY AVIARIES

No. 1, two Griffon Vultures, one the Indian, the other a very pale bird about the same size, "supposed to be Kolbe's, but too big"; Mr. Willoughby Lowe thinks it may be *Gyps ruppelli erlangeri*; an Occipital Vulture, two Ground Hornbills, one of each race, southern and northern, a Raven, a Hoodie Crow, and some Jackdaws also share this division.

No. 2, two Straw-necked Ibises, a Brown-necked Raven, *ruficollis*, late *umbrinus*, and a Hoodie Crow.

No. 3, one Paraguayan Buzzard-eagle, *Geranoaetus melanoleucus*, the bird often known as the Chilean Sea-Eagle.

No. 4, two Bateleur Eagles.

No. 5, two African White-backed Vultures.

No. 6, two Turkey-buzzards, "which had eggs last year and have laid again this."

Nos. 7 and 8, three more Paraguay Buzzard-eagles, one with a pure white breast, the other two with the breasts finely cross-barred with black; "probably a question of age."

No. 9, a young King Vulture (*papa*).

No. 10, a Golden Eagle.

### (30) THE NEW WADERS' AVIARY

This contains pairs of Mandarin Ducks, Oyster-catchers, Alpine Choughs, Scarlet Ibis, smallish Blue Gallinules ("probably *martinica*"), and Black Crakes, *Limnocorax niger*, with a single Little Bittern. The Crakes were sitting, but Ibises smashed up the nest. NB.—In one of the bird-room passages is the small Bittern from S. America which hops like a Thrush and so far has not been identified; this I forgot to include in its proper place.

### (31) THE AVIARIES WEST OF PARROT-HOUSE

No. 1, two Snowy Egrets, *candidissima*, two Cayenne Rails, two Swainson's Long-tailed Jays, *Calocitta formosa*, and some Glossy Starlings, "? *sycobius*."

No. 2, two more of the Long-tailed Jays, two Tiger-bitterns, one American Great White Egret, *egretta*, one South American Nightheron, *N. tayazu-quira*, and two of the so-called Beechey's Jays.

No. 3, pairs of N. American Blue Grosbeaks and Rose-breasted Grosbeaks and one Black-headed Grosbeak, *Z. melnocephala*.

Nos. 4 and 5, *inter-communicating*, a pair of Superb Spreos.

Nos. 6 and 14, half a dozen of the Glossy Starlings, *nitens*, "bred here in 1925."

No. 7, empty.

Nos. 8 and 9, a pair of American Kestrels, *sparverius*, "too quarrelsome to be kept together."

Nos. 10, 12 and 13, an Occipital Blue Pie in each, three in all.

No. 11, one Pied Crow (*albus*, late *scapulatus*).

No. 15, a pair of Alpine Accentors.

No. 16, one of the two Babblers recently received, and not yet identified, the other is in No. 10 (18).

No. 17, empty.

No. 18, a pair each of White-breasted Ground Pigeons, *Gallicolumba jobiensis*, and Bronzewing Pigeons, with a pair of Blue Robins, which have just hatched.

### (32) SMALL BIRD BREEDING AVIARIES

Nos. 1 and 2 (*communicating*), pairs each of Silverbills (have eggs), Firefinches, Zebra, Grey, and Orange-cheek Waxbills with a pair of Diamond Doves and another of Painted Quails. The last lay continually, but do not sit; some of the eggs were put under a Bantam and one hatched, but the chick and the shell disappeared at once, the hen apparently having eaten both; two more at least contained young and chipped, but got no further towards survival.

No. 3, a pair of Magpie Mannikins, nesting, and pairs of Diamond Doves and Painted Quails.

### (33) LONG AVIARY NO. 1

A House Sparrow cock, Greenfinch hen, Cape Sparrow cock, Chaffinch hen with two Missel Thrushes and a pair of Red Mountain Doves.

No. 2, three Grey-winged Ouzels, a pair and the young hen bred here last year, one Orange-billed Saltator, one Argus Pheasant cock, three Porto Rico Pigeons (*squamosa*), and pairs of Guinea Pigeons, Senegal Doves, White-crowned Pigeons (*leucocephala*) and Crested Pigeons (*Ocyphaps*).

### (34) COTTAGE BLOCK, WEST SIDE

Eight aviaries containing (i) a pair of Indian Coucals; (ii) three Grey Struthideas which have often built their big mud nests on the cross-beams, but never laid, one Monal cock with an unidentified hen, an unidentified Fireback; (iii) two Laughing Jackasses; (iv) one Temminck's Laughing Thrush, an old inhabitant; (v) pairs of Pagoda Starlings, Spice-birds and Java Sparrows, with some hybrid Sparrows

(Cape- × -House) and some Barbary Doves; (vi) one Green Glossy Starling (*chalybeus*) and the one (*nitens* probably) bred here in 1924, a Bornean Crested Fireback (*nobilis*), with a hen of its own or another species; (vii) a pair of N. American Blue Grosbeaks and a pair of Javan Junglefowl; (viii) Ornate and Bishop Tanagers, cock and hen, "the pair that reared a young hybrid two years ago."

#### East Side

(i) Pair of Plumed Ground-doves; (ii and iii) each contains a Monal cock and Pea-hen. "Eggs have been laid, but they were thin-shelled or otherwise defective; if the birds could be turned out into a paddock, they would probably produce fertile eggs. Monals breed regularly here in the comparatively small open Brick-Works pens, a pair to a pen." (iv) A pair of Wonga-wonga Pigeons and a Black Cassique, *Cassidix oryzivora*; (v) pairs each of Plumed Ground-, Bar-shouldered, and Barbary Doves; (vi) hen Crested Fireback Pheasant, *Acomus erythrophthalmus*; (vii) a pair of Golden Pheasants and a *Garrulax* of sorts (? *picticollis*). "The Gold cock is occasionally run with the hen Fireback in No. 7. (viii) Pairs of White-crested and Black-Gorgetted Jay-thrushes.

#### (35) THE COTTAGE AVIARY

This, even in this land of large aviaries, is a big one, about 30 by 30 yards, planted and pathed like a garden and with a pretty cottage as shelter; it contains a large collection of small birds, mostly seed-eaters and in pairs, and altogether provides a wonderful feast for the eye, birds, flowers, and turf in perfect combination. As complete a list as possible is: Long-tailed Grassfinches, Pectoral Finches, Java Sparrows, Tricolour Mannikins, Pin-tailed Whydahs, Combasous, Zebra-finches, Bronze Mannikins, Orange-cheek Waxbills, Cordon-Bleus, Zebra Waxbills and African Silverbills, Green Singing Finches, one Yellowish Finch, *Sicalis arvensis*, Indigo Buntings, Nonpareil (one cock), one *Spizella atrigularis*, one of the little American Buntings so rarely seen in confinement, Red-crested Finches and a Diuca hen mated with a cock Brown-capped Grey Tanager, *Schistochlamys capistrata*. Other inhabitants are one Sparrow Lark (*leucotis*) and

one Shore Lark, a pair each of Shamas and Dayals, three Ruffs just arrived, and a good many Diamond, Barbary and White Barbary Doves. A pair of the last, disdainful of the many proper nest-boxes provided, have nested on the ground close to the wire under a gorse bushlet and have a couple of almost feathered young.

### (36) BUDGIE BLOCK

At the upper end is a largish unplanted aviary containing a lot of Budgerigars of nearly every colour, a hundred or more, though the aviary was emptied in the winter and the stock reduced to about twenty birds. From it run two lines of aviaries, 20 on the east side, 17 on west.<sup>1</sup>

*East Side.*—No. 1, a hybrid Yellow-bellied Parrakeet- × -Rosella bred in 1929. 2, A King Parrakeet paired with a hen Rock Peplar, which have eggs. 3, a Rosella. 4, a Pale-headed Rosella. 5, a cock Pennant and a hen Yellow-naped Parrakeet. 6, a Stanley paired with a Bauer's. 7, a Crimsonwing- × -Rock Peplar hybrid bred in 1928. 8, a cock Barnards- × -Yellow-naped hybrid paired with a Barnards hen. 9, a Crimsonwing paired with a Rock Peplar. 10, a Barnard's paired with a Yellow-bellied Parrakeet. 11, Cockatiels. 12, pair of Stanley Parrakeets. 13, a yellow-bellied- × -Barnards hybrid bred in 1930. 14, a pair of Pale-headed Rosellas. 15, a Yellow-bellied cock with a Rosella hen. 16, a pair of Bauer's Parrakeets. 17, a pair of King Parrakeets. 18, a Cassowary (*altijugus*), apparently a hen. 19, empty. 20, another Cassowary, probably *violacollis*.

*West Side.*—No. 1, Budgerigars. 2, a cock Crimsonwing. 3, a Crimsonwing- × -Rock Peplar hybrid bred in 1929. 4, a pair of Yellow-rumped Parrakeets. 5, a Fischer's paired with a Masked Lovebird. 6, pair of Peach-faced Lovebirds. 7, a Crimsonwing- × -Rock Peplar hybrid bred in 1930. 8, pair of Barraband's Parrakeets. 9, pair of Mealy Rosellas. 10, a lot of Peach-faced Lovebirds bred in 1926 and 1927, and some Fischer's. 11, a cock Peachface- × -Masked hybrid with a Masked Lovebird hen. 12, Peachface cock and a Fischer's hen. 13, Peachface with a Masked, a pair, but I forget which way.

<sup>1</sup> I find that I have missed the Adelaide Parrakeet; I know I saw one or more somewhere, I think here. There are no doubt a certain number of other birds missed.

14, a Madagascar Lovebird cock with an Abyssinian hen. 15, a Peach-face cock with an Abyssinian hen. 17, pair of Masked Lovebirds.

(37) LONG AVIARY, No. 3

This, a pair of the Sooty Rails, *Limnopardalis sanguinolentus*, from S. America, which bred in a smaller aviary here two years ago, have to themselves, and they have shown their appreciation by producing three more chicks, now about a fortnight old.

*Long Aviary No. 4.*—White-crowned, Wonga-wonga, Crested, and Nicobar Pigeons, some of the Necklace- $\times$ -Barbary Doves bred some years ago by Shore-Baily, but which have never got any further here, and so, I presume, may be held to be sterile. A Monal, bred in 1927, and a cock Thrush with a hen Blackbird as hoped-for mate complete the tale.

*Adjoining waist-high Aviaries.*—The three contain a Red-headed Conure, two Nanday Conures and a cock Alexandrine Parrakeet.

(38) EASTERN BLOCK

*Birds of Prey.*—No. 1, pair Tawny Owls. 2, one Oriental Eagle-owl, *Huhua orientalis*. 3, a Chimachima, *Milvago chimachima*. 4, a White-breasted Chimachima, *M. strigilata*. 5, two Chimango Caracaras, *M. chimango*. 6, a Brahminy Kite. 7, a Black-necked Buzzard, *Busarellus nigricollis*, from S. America; a striking-looking bright rufous bird with a white head, black throat-patch and black flights and tail. 8, an Arctic and a Virginian Eagle-owl. 9, a Fish-owl, *Ketupa javanensis*. 10, two Eagle-owls bred here in 1930. 11, one Turkestan Eagle-owl. 12, a pair of Eagle-owls. The hen is sitting on half-grown young on the ground in the flight, exactly as she has done in previous years. Her immediate neighbourhood is no safe place. 13, an adult King Vulture (*papa*). 14 and 14a, a pair of Brazilian Caracaras, *Polyborus tharus*, in each. 15, two Buzzards and a Jackal Buzzard. 16, two more Buzzards and a Red-winged Hawk, *heterospizias meridionalis*, from S. America. 17, a S. American (?) "Goshawk," not yet identified. 18, two Kestrels. 19, one Turkey Vulture, *Coragyps urubu*. 20, one Marsh Crested Eagle, *Spizaetus limnaetus*, from Sumatra. 21, an African River-eagle, *Cuncuma vocifer*. 22, one Chimachima. 23, one Hobby.

## (39) LONG AVIARY, No. 5

A lot of small seed-eaters and a pair of Red Mountain Doves. The first include pairs of Long-tailed Grassfinches, Heck's ditto, Spice-Birds, Zebra Finches, Blue-breasted Waxbills, Pectoral Finches, Pintail Nonpareils and Gouldians, a cock Vinaceous Waxbill, and an odd "Song-sparrow" of sorts, one of the pair which reared a young bird a year or two ago.

We now move to the Main Entrance and work back.

## (40) THE HANGAR AVIARY

A huge open aviary with a large pool and growing trees, the framework of which is the iron-work of an aeroplane hangar, which can house most suitably full-winged Herons and the like. At present it contains one Adjutant Stork, one Australian Ibis (*molucca*), one White-fronted Heron, also Australian, *Notophox novaehollandiae*, some Herring and two Pacific Gulls (*occidentalis*), two wild Muscovy Ducks, and six hen Comb-ducks, which spend most of their time flying in the heights of the aviary or on the roof-girders, alighting and perching with astonishing ease. Two males have just arrived from Mr. Ezra.

## (41) THE ROAD PADDOCKS

No. 1, a pair of Spur-winged Geese, the gander aggressive to humans.

No. 2, one Common Crane and pairs of Rosybills, Carolinas, and Ruddy Shelducks, and Bar-headed and Magellan Geese, the last sitting.

No. 3, a Stanley Crane cock with a Demoiselle hen, a pair of wild Muscovies, some Tree-ducks (*autumnalis*), and two hen Comb-ducks.

Farther along the road leading up the hill are paddocks containing Emus and Rheas, both of which, I think, breed here.

## (42) THE LAKE AND JUNGLE

A large area of water, "bush" and open which contains a pair of Sarus Cranes, which will allow no other Crane or even anything like a Crane to exist a day with them, six Black Swans, three old and three this season's young, still fluffy, some Purple Gallinules, and numbers of nearly all the ordinarily kept Ducks and Geese, I should think, as

well as rarer ones, which have been together for years and manage to agree more or less among themselves, though they will not permit the introduction of any new inmates; many pairs now have young—I should think there were half-a-dozen broods of Pochards, and a pretty sight one day was a couple of day-old baby Coots being fed by their parents on the minutest bits of weed brought up by the old birds from the bottom by continual diving; one young bird kept close to, and was fed entirely by, the father, the other by the mother. A notice board gives all the names, these besides those mentioned there are: Canada, Bernacle, Cereopsis, Egyptian, and Bar-headed Geese; Carolina, Mandarin, Pintail, Yellowbill, Shoveller, Shell-, and Ruddy Shell-ducks, Pochards, and Tufted Ducks, Wigeon, Falcated and Baikal Teal.

#### (43) THE FLAMINGO ENCLOSURE

Eight Flamingos, two distinctly larger than the others, and with grey legs and not a sign of pink anywhere; with them is a male Screamer, and in an adjoining paddock two Pelicans.

#### (44) THE MUNTJAC PADDOCKS

(i) A pair of Asiatic White Cranes (*leucogeranus*), not white but deeply stained with the rich red soil of Devon, and four pairs of Duck: Wigeon, Yellowbills, Pochards and Bar-headed Geese.

(ii) A pair of Demoiselle Cranes and some Cereopsis Geese.

(iii) More Cereopsis, two Crowned Cranes, the grey-necked *gibbericeps*, and a Muntjac Deer, which was caught in Oxford some years ago.

This about concludes the round, though I must not forget the Emus and Rheas in several large paddocks and Ostrich in the Deer sheds, a fine Somali male, and everywhere are Peafowl, each male with his own particular parade ground, which he religiously keeps to year after year.

Before attempting this count, I said that one was immensely impressed with the collection and its vastness, now, having completed the "census", all I can say is that the impression is stronger than ever for the place contains so much of interest, as to be almost indescribable.

## CORRESPONDENCE

### THE SPLENDID GRASS PARRAKEET IN ADELAIDE

SIR,—No doubt you will be interested to hear that the Scarlet-breasted Parrakeet has come to hand. I have two pairs and two odd hens. There were two other pairs: these are remaining in Adelaide Aviaries. They are wonderful and are the first we have seen alive.

I have had to disturb two pairs of Bourke's to make room for these; little did I think I would have to do this.

One pair of Bourke's has two eggs. This is very early. The Turquoisines usually commence the end of September or early October.

S. HARVEY.

Mr. Minchin also writes from the Adelaide Zoological Gardens:—  
"I feel sure that you will be interested to learn that a few pairs of Splendid Grass Parrakeets (*Neophema splendida*) have been brought to Adelaide from Central Australia."

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### THE RAINY SEASON

SIR,—Although the past summer has been very wet and cold, I have had more birds nesting this year than I have ever had before. I thought it would interest readers to have a list of them. As usual, I shall later on give the results of the nesting. As far as my experience goes I find birds do better and nest more in a wet summer than they do when it is very dry and we have droughts.

The following birds have nested this summer:—

In the animal enclosure at liberty:

#### *Cranes.*

Manchurian.

Stanley.

Demoiselle.

Sarus.

#### *Ducks.*

Carolina.

Mandarin.

#### *Ducks (contd.).*

Bahama.

Meller's Duck.

Madagascar White-backed.

Chestnut-breasted Teal.

Ringed Teal.

Rosybill.

Red-crested Pochard.

Golden Pheasant and Impeyans	Sonnerat's Jungle Fowl.
Chukor Partridge.	White Peafowl.
Common Jungle Fowl.	Brush Turkeys.

In my aviaries :—

*Starlings.*

Superb Spreo.  
Crowned.  
Slenderbill.  
Purple-headed.  
White-capped.  
Rüppell's.  
Rothschild's Grackle.

*Parrots.*

Layards.  
Malabar.  
Alexandrine.  
Indian Ring-necked.  
Barrabands.  
Queen Alexandra.  
Turquoise.

Renauld's Ground Cuckoo.  
Silver-eared Mesia.  
Virginian Cardinal.  
Madagascar Partridges.  
Diamond Doves.  
Tambourine Doves.

White-breasted Pigeon.  
Swinhoe's Pheasant-tailed Pigeon.  
Occipital Blue Pie.  
Shama.  
Blue Birds.

A. EZRA.

### THE SPOTTED-WING SARAGLOSSA

SIR,—I have recently obtained a pair of rare Starlings, which I think are quite new to aviculture. They are *Psaraglossa spiloptera*, and there are two subspecies, otherwise the genus is monotypic, and confined to India. Oates does not think this bird is a Starling, although thought to be by field naturalists. He puts it with the *Crateropida*; Stuart Baker, on the other hand, considers it is a Starling in all respects. It is rather a small bird, mine not being as large as a Common Spreo. The general colour above is ashy grey, all the feathers edged with dusky brown, giving it a very mottled appearance; the lower back and rump are more uniformly brown; the wing coverts are greenish black, but the primaries are white at the base, crown of head grey mottled with black, lores and feathers round side of face deep black, throat rich red chestnut, breast pale rufous, abdomen white.

From this description it will be seen that the bird, if not as gaudy as some of the Starlings represented in our aviaries, is nevertheless very pleasingly coloured and quite unlike any other forms. Mine are rather rough at present, but should look very attractive when they have moulted out. I have not had them long enough yet to speak for their hardiness, but they appear to be doing well on ordinary soft food, supplemented with fruit, and a daily ration of mealworms.

G. H. GURNEY.

[In 1902 the late Dr. A. G. Butler received from Mr. E. W. Harper a living Spotted-Wing, of which he published an account in this Magazine (1903, pp. 51 and 277). The species has been represented in the Zoological Gardens.—ED.]

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#### SWAINSON'S LORIKEETS AND LOVEBIRDS

SIR,—I was very much interested in H. A. Collins' letter in the September number of the AVICULTURAL MAGAZINE about the nesting of his Swainson's Lorikeets; exactly the same thing has happened to mine this year. They laid first in April in a coco-nut husk: both eggs were fertile but neither hatched. They laid again in June with the same results, and then apparently tired of the husk determined to try a new spot, and went up into the roof of my small aviary, where there was a space of about 3 inches between the actual roof and an interlining of beaverboarding; there they either made a nest or took possession of one already made by some Black-cheeked Lovebirds. They laid again in July, and the young birds were almost feathered when I discovered them in August. However, they both died when about twenty-four days old. I was away at the time, but the old birds had apparently been looking after them well, and I have since been wondering whether it could have been too cold for them, and whether perhaps having got out of the nest they could not get in again. It was very wet at the time, but not extra cold.

Last year the same pair of Lorikeets nested with success in a coco-nut husk and reared one family of two. The first clutch of eggs though

fertile came to nothing, and I tried damping the second lot, and they hatched about the twenty-first day. This year in the roof it was quite impossible to damp them, in fact until the birds were hatched I was not even sure that they were nesting. I feed them on bread and milk—white bread and goats' milk—oranges, sometimes green grapes, and ordinary seed mixture such as one gives Budgerigars. I have had them on this diet for three years and they seem perfectly healthy. The cock is in perfect feather, but all this year the hen has been untidy on her neck. They live at peace with three pairs of Black-cheeked Lovebirds and one pair of green Budgerigars.

Last year the Black-cheeked Lovebirds had an excellent breeding season, and absolutely refused to allow the Budgerigars to live in the aviary. This year for some reason the Lovebirds, though they have nested over and over again, have had no families, and in consequence have been quite friendly with the Budgerigars, who are now rearing their second family. When I first got the Swainson's Lorikeets three years ago they lived in a large Parrot cage in the house, and in the same room were two cock Black-cheeked Lovebirds who went in and out through the window as they pleased, coming in and roosting in their cage at night, unless the door of the room was open when they would fly upstairs and sleep on top of a cupboard. During all that summer and autumn they brought in food from outside and fed the Lorikeets through the bars of their cage, not only the hen Lorikeet but the cock as well. They would fly in and sit on the cage with their heads on one side, and the Lorikeets would climb up and wait until the food was pushed into their mouths. Now, though they are all together, this never seems to happen.

I wonder if anyone who has experience of Black-cheeked Lovebirds can tell me why sometimes they turn upon each other. I had nine in the spring and one morning one was lying dead, very much mauled, on the floor. About a week ago another was on the floor with a large hole in its wing. I took it in and dressed it, and yesterday as it could fly returned it to the aviary only to hear a fuss about ten minutes afterwards, and on going out found all the others chasing it. This one is, I think, a cock, and the one killed in the spring was certainly a hen. I don't want to keep the bird caged in the house for the rest of his

life, but what am I to do? I tried letting him fly round the room, but he utterly refuses to return to his cage, and is sleeping now on the curtain rod, having been out and without food for about five hours!

Mrs. H. G. CHICHESTER.

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#### FOOD FOR LORIES

SIR,—Mr. Collin might try feeding his Lorikeets on Dr. Allinson's foods, prepared as for infants and sweetened. It is far and away the most wholesome diet for the larger Lories and Lorikeets.

TAVISTOCK.

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#### A QUEER FRIENDSHIP

SIR,—There seems to be no end to the idiosyncrasies of birds in confinement, or to the peculiar habits they will adopt when deprived of others of their own species, but I think the following "friendship" is so remarkable that it is worth recording. In one of my aviaries is a Black Rail and a small Spotted Francolin from East Africa, both birds having lost their respective mates, and both having been inmates of the same aviary for a long while. Between these two birds, both of widely different habits in a wild state, a most extraordinary friendship has been established: the Francolin is a cock bird, and the Rail evidently a female; wherever the one goes the other follows—they squat down side by side in the long grass, or under a bush, and refuse to leave each other. The Francolin constantly feeds the Rail, and if it finds some tit-bit such as a worm, or catches a fly, calls her up and feeds her with it, while she crouches on the ground with outstretched fluttering wings. Both birds are very tame, so it is easy to observe what goes on, and short of actual pairing they are like a mated pair. Perhaps before long some more Black Rails will be imported, and I shall then be able to provide my solitary widow with a mate more suitable to her station in life. Till that occurs the illicit friendship must continue.

G. H. GURNEY.

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## A CURIOUS HYBRID

SIR,—I enclose a coloured drawing of a pair of hybrids, a cross between the Grey Java Sparrow and the Chestnut White Pied Manakin. It is rather a quaint mixture and I thought you may like to reproduce it in the AVICULTURAL MAGAZINE. Has this cross ever been obtained in England? The drawing represents a pair bred in Japan.

DAVID EZRA.

## THE CHESTER ZOOLOGICAL GARDENS

SIR,—It may interest readers of the AVICULTURAL MAGAZINE to know that I saw an Albino Swallow the other day.

I was motoring along a country lane close to here, when a white bird flew across my path. I at once slowed down, and after a little while came across the bird perched on some wire fencing, from which I was able to identify it as above. On returning later in the day I was greeted with this remark from members of the staff engaged in the Zoological Gardens: "Have you seen the White Swallow?" But on inquiring found that none had seen it so well as I had.

There is abundant wild bird life in these gardens, and the following are some of the varieties which have nested here this year: Wood Pigeon, Stock Dove, Turtle Dove, Tawny Owl, Swift, Jay, Starling, Swallow, Greenfinch, Goldfinch, Chaffinch, Bullfinch, Spotted Flycatcher, Garden Warbler, Goldcrest, Willow Wren, Great Tit, Coal Tit, Tree Creeper, Song Thrush, Blackbird, Robin, and the usual Sparrow.

Many more species have been seen, but their nests have not been located. It will be interesting to see how many of our feathered friends will select this well-wooded site another year, now that these gardens have been opened to the public and have during the last few weeks been visited by thousands.

I am hoping that by next spring we will be adding many breeding attempts on the part of our foreign friends.

If any members of the Avicultural Society should be visiting Chester I would be very pleased to send them a complimentary ticket to the above gardens, if they would write and let me know in advance. At the moment birds are very poorly represented, owing to the very late



A CROSS BETWEEN THE GREY JAVA SPARROW AND THE CHESTNUT AND WHITE PIED MANAKIN, BRED IN JAPAN. JULY, 1931.

[From a coloured sketch sent by Sir David Ezra. The upper parts are dark brown, the crown and upper tail-coverts black; flanks and ear-coverts rufous. In the upper figure the chest has a pink tinge. Bills and feet flesh colour.]

start made, caused by the opposition raised against these beautiful gardens being converted to a public zoo, but we are proceeding apace with the erection of aviaries, and hope to have a nice collection together by spring.

G. S. MOTTERSHEAD.

#### A BREAD-AND-MILK DIET

SIR,—In reply to your query, I use only unskimmed fresh cow's milk, as used by the household. In warm weather I scald it, but in cold weather I use it just as it arrives from the dairy. For my Softbills, Pekin Robins, Hangnests, Cardinals, etc., I sweeten the bread and milk with a little honey. My Cockatiels, Blossom Heads, various Lovebirds, and Budgerigars prefer the diet unsweetened, as do the Zebra Finches and Mannikins. I suppose preserved milk could be used, as it is probably preserved milk that I obtain also and ship when bringing home birds from abroad.

I may add that since writing you I have young Pekins, Tri-coloured Mannikins, and more Zebras, all being reared by their parents on bread and milk. When they have young to feed these little species display astounding courage, and will attack Cardinals for possession of the bread and milk dish.

H. MOORE, F.Z.S.

#### THE NEW YORK HUMMING-BIRD

Mr. Crandall's *New York Zoo Record* (Oct. No., p. 292) of a Humming-bird living there three years and four months is, I think, certainly the record. Mr. Ezra had one, also a *Ricordia*, which escaped from an open window (about 1915), after he had had it two years. Delacour, *AVICULTURAL MAGAZINE*, 1926, and *Aviculture*, vol. ii, p. 360) says that an *Agyrtia milleri* "once lived three years in France", presumably with Comte Ségur.

With these two exceptions the longest-lived of any Humming-bird imported to Europe seems to have been a Mango, which lived nine weeks in the London Zoo; this was certainly the case up to 1921, when Neunzig's *Fremdlandische Stubenvögel* appeared, but there may have been other longer lives since, though I do not think so.

E. HOPKINSON.

## MESSRS. FROST'S AND MAYER'S COLLECTIONS

Mr. Wilfred Frost has returned to London with a very fine collection of birds from the East. It includes ten species of Paradise Birds and several examples of most of them, as well as a number of other birds of which the following are probably imported for the first time :—

THE GIANT PITTA (*Pitta maxima*), from the island of Halmheira.

MACKLOT'S PITTA (*Pitta mackloti*), from the islands of Mysol and Salawati.

THE YELLOW-GREEN LORIKEET (*Psitteuteles flavoviridis*), from Sula Islands.

Mr. Shaw Mayer arrived from North-east New Guinea on 23rd October with a collection of quite outstanding quality, consisting as it does of many Birds of Paradise, of which half a dozen are entirely new to aviculture, either as species or subspecies. Mr. Mayer's birds are always beautifully caged and tended, and arrive in most perfect condition, and we have never seen a more lovely collection, and hope to publish a detailed account next month. Space only permits here of the mere mention of the names of those species imported now for the first time :—  
ROTHSCHILD'S BIRD OF PARADISE (*Astrarchia rothschildi*).

WAHNE'S SIX-PLUMED BIRD OF PARADISE (*Parotia wahnesi*).

LONG-PLUMED SUPERB BIRD OF PARADISE (*Lophorina minor latipennis*).

EMPRESS AUGUSTA VICTORIA'S BIRD OF PARADISE (*Paradiscea augusta-victoria*).

GEISLER'S BIRD OF PARADISE (*Drepanornis albertisi geisleri*).

EMPEROR OF GERMANY'S BIRD OF PARADISE (*Paradiscea guillemi*).

## OFFICERS FOR THE YEAR 1932

The Council propose that Captain Waud and Mr. Spedan Lewis retire from the Council by seniority, and that Messrs. T. H. Newman, Sydney Porter, and Dr. E. Sprawson be elected.

Also that Captain Waud be elected as Auditor, and Colonel A. E. Hamerton as Scrutineer for the coming year.



WAHNE'S SIX-PLUMED BIRD OF PARADISE. *Parotia wahnesi*.

Reproduced from a coloured plate in *The Ibis*, 1911.

# THE AVICULTURAL MAGAZINE

THE JOURNAL OF THE  
AVICULTURAL SOCIETY

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## PARADISE BIRDS FROM NORTH-EAST NEW GUINEA

Space in our last number would only permit of the briefest mention of the wonderful collection of birds brought to this country from North-east New Guinea by Mr. Shaw Mayer, and a promise of a more detailed account was given. I have seen many collections arrive and from many different parts of the world, but never have I seen one that gave me more pleasure or more thrills than this, for not only was every bird in perfect plumage and condition, but all were rare, and most so rare that one never expected, in one's wildest dreams of imagination, to see such priceless treasures in the living flesh.

The collection was made chiefly in the Finisterre Mountains in what was formerly German New Guinea, and in which former collectors have confined their attentions to skin collections only, hence the birds brought home are different to any we have seen before.

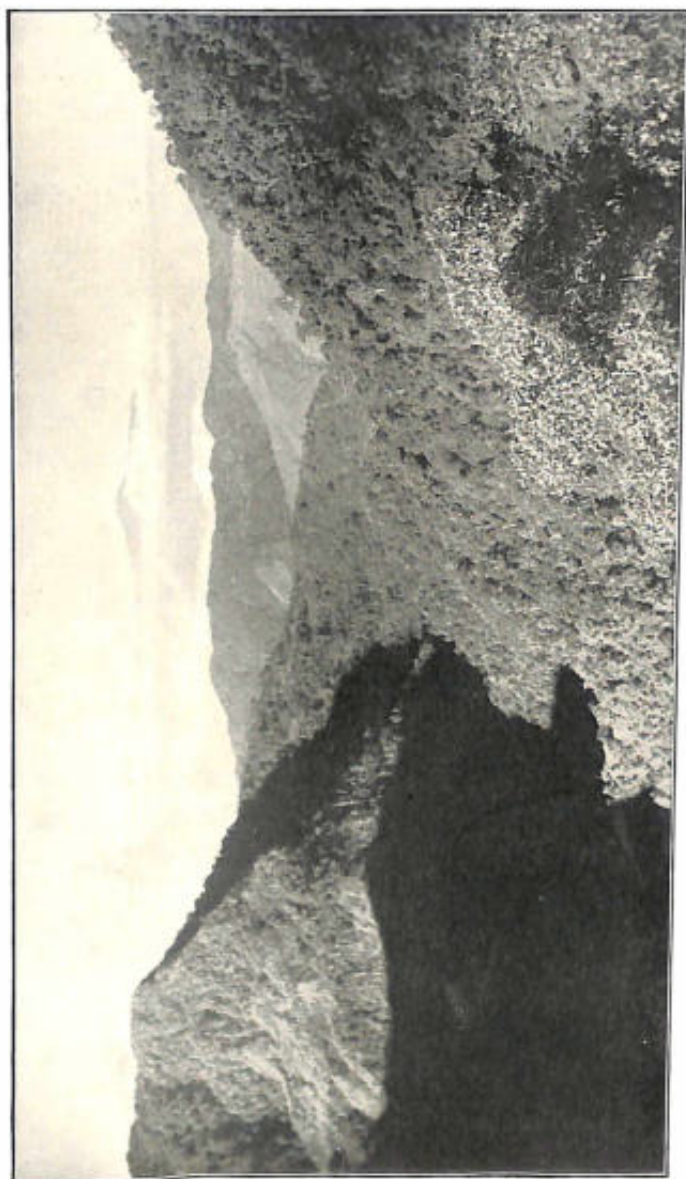
The first I noted was a full-plumaged male of a Paradise Bird somewhat resembling the Greater Bird but with the plumes of a delicate orange red, looking like a hybrid between *apoda* and *raggiana*, but, if anything, more striking than either of these. It was the Empress Augusta Victoria's Bird of Paradise (*Paradisaea augusta-victoriae*). Only one of these was secured, although it is not found at any very great altitude as are some of the others, but Mr. Mayer was chiefly anxious to procure the high mountain species, especially the wonderful long-tailed *Astrarchia rothschildi*, which is allied to Princess Stephanie's Bird of Paradise, which has been imported on rare occasions. He was

successful in securing half a dozen males and four females of these, all of which reached home safely and, except for the loss of the tips of some of their long tail-feathers, in perfect plumage. It is certainly a glorious bird, mainly deep black above, with a leaf-green under surface, but it has a wonderful ruff which is bordered by bands of vivid coppery gold and green, and in display, which I have already witnessed several times, this ruff forms an almost complete disc, the head forming the centre, and one only sees a jet black disc bordered by a band of fiery golden copper. This is one of the high mountain species, occurring at about 7,000 feet.

The Emperor of Germany's Bird of Paradise (*Paradisea guillemi*) is another wonderful creature with flank plumes more open in texture than in most of its genus, and with a brilliant green forehead, face and throat, the rest of the body being of a chocolate brown and cream. It occurs at the comparatively low elevation of from 2,000 to 3,000 feet above sea-level.

It is difficult to say which is the most beautiful in a collection in which all are beautiful, but a Six-plumed with gold instead of silver frontal plumes and a comparatively long tail certainly runs the others very close. This is the *Parotia wahnesi* or Wahne's Six-plumed Bird of Paradise, certainly one of the most exquisite of its genus. It is smaller than either *sefelata* or *lawesi*, both of which we have seen before. It was described by Lord Rothschild in 1906, and figured by Gronvold in *The Ibis* for 1911 (pl. vi), and we give here a photographic reproduction, by permission, of Mr. Gronvold's excellent coloured plate. The body colour of the bird is intense velvety black on which background the scintillating breast shield of gold shot with green, the striking copper nasal plumes and shining blue nape, stand out in vivid contrast. The female, of which Mr. Mayer obtained one, is of a reddish brown. This is also a mountain species, occurring at some 6,000 feet.

Another bird of this altitude is the Superb Bird of Paradise, and those obtained by Mr. Mayer were somewhat different to those that have arrived on previous occasions. This particular race was named as a sub-species by Lord Rothschild *Lophorhina minor latipennis*, and is said to differ from the typical *L. minor* from British New Guinea in having the long lateral plumes of the pectoral shield slightly longer



THE HOME OF PARADISE BIRDS AND MATSCHIE'S TREE KANGAROO.  
Rawlinson Mountains (foreground) looking over the Markham Valley. Mount Sowayng (about 10,000 ft.) in background.  
*[Photo by G. Bergmann.]*

and distinctly wider. The difference is certainly very slight. The Superb is one of the smaller Birds of Paradise with a short tail. It is velvety black, but on the chest is a wonderful shield of metallic green which terminates on each side in long points projecting considerably beyond the width of the body, and on its back it carries a hood of velvet black.

Geisler's Drepanornis (*Drepanornis albertisi geisleri*) is the least beautiful but perhaps the most strange looking of the collection. Its plumage is violet brown and the bill is long and curved. On the forehead is a patch of metallic blue and from just above the eyes project small fleshy "horns".

The collection also contained two fine males of the Rifle Bird (*Craspedophora intercedens*) and six male Gardener Bower Birds of a slightly different form to any previously imported and which Lord Rothschild has named *Amblyornis subalaris germanus*. The Gardener Bower Bird is a brownish Thrush-like bird with a brilliant orange crest which is generally concealed, but when the bird is displaying during his dance in front of his bower this crest is revealed in all its vivid beauty reminding one of some brilliant orange flower.

From this collection the Zoological Society has acquired examples of four species, Mr. Whitley has taken pairs where these were available and has added six species to his already remarkable collection and Mr. Ezra has also acquired some.

Although mammals do not come within the province of the AVICULTURAL MAGAZINE I cannot let this short account of Mr. Shaw Mayer's collection end without a mention of the Tree Kangaroos he has brought home. The commoner species of this curious group of animals are well known at the Zoo, but the Matschie's Tree Kangaroos (*Dendrolagus matschiei*) are something quite new and quite the most striking of any we have seen. There is a male and two females, one of the latter carrying a large young one in its pouch, and their colour is reddish brown becoming reddish buff to yellowish white below.

These are some of the wonders of a wonderful country, but their collection involves endless hardship, and Mr. Mayer is to be congratulated on a fine achievement.

## THE NESTING OF THE REDDISH FINCH AND OTHERS

By H. L. SICH

For some years I have been trying to get pairs of some of the *Sporophila*. The White-throated and Reddish Finches were all I could get, the hens of the latter always dying just when my hopes were highest.

Last winter I managed to get a good many brown birds with dark beaks, mostly from abroad, as all the hens are so very much alike I have not the least idea what they are.

This spring a pair of White-throated, two pairs of Reddish Finches, cocks of the Lined and Guttural Finch with some hens which I hoped would be their respective mates, were turned into a flight with some other small birds.

The first thing that happened was that the two cock Reddish Finches fell out, one had to be rescued, because with these *Sporophila* it always means the death of the weakest if they quarrel. A few days afterwards the one left behind died. After cutting the grass, about a fortnight later, I discovered a very small nest made of hay about eight inches above the ground in the only thick part of a seedling clematis climbing up a privet stem. It contained two young birds which fitted it like a cork in a bottle. There was no room for another one if more had been hatched. They were just feathering and had two yellow-lined gaping throats. They were being fed, chiefly on spray millet, by one of the hen Reddish Finches.

She must have been incubating when the cock died. Two young birds left the nest on 4th July, with half-grown tails; the nest had begun to sag. I had to put it straight a little time before. They looked so fragile that one wonders how they escape their numerous enemies in their native haunts. They never sat together as some young birds do.

After the hen ceased to feed them I lost count of them. Later on I found another nest, higher up in the same plant, which had then grown considerably. No eggs were laid as it was disturbed by a pair of Cherry Finches who built a second nest just below, after their first brood of three had died.

The cock White-throated Finch murdered the Lined Finch as a

preliminary to building a nest in a wire fern basket hanging from the roof filled with twigs, too high up for observation. Last year when they built in a poplar-tree the four eggs disappeared one by one when I tried to take notes.

\* One young bird left the nest on 27th July, and was fed by both parents for a day or two, then vanished. There was a little brown bird picked up dead a few days later on, either that or one of the young Reddish Finches. There is a stumpy Portugal Laurel in the corner farthest from the door on which I had thrown an armful of hay. Not being used, I took it off for the benefit of the shrub; finding a nest with two eggs in it underneath I put the hay back again; the next day there was another egg. This belonged to the Jacarine Finches. They appeared to be greenish white, rather thickly spotted, and streaked with dark grey-green. They were two nervous for a close examination. The birds did not mind my entering to feed and water, but the hen always left the nest when anybody passed three or four yards away outside. The cock sometimes took a turn on the eggs; he usually sat on a little tree close by, driving off any bird that perched above the nest, but had to give way to either of the White-throated Finches or the cock Red-crested Finch; the rest of his time he spent in jumping straight up in the air with a flutter and diving down again on to the perch. One egg hatched; the young bird died just as the feathers were sprouting.

Of my thirty years of aviculture, this is by far the worst. The wet and cold has killed nearly all the young birds soon after they have left the nest; many have only played at nest-building.

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## NESTING NOTES FROM FOXWARREN PARK,

1931

By ALFRED EZRA

I have already published a list of birds that nested with me this year, and now I give more details:—

BRONZE-WING PIGEON (*Phaps chalcoptera*). These birds again did very well, rearing seven young. The two pairs are again sitting on two eggs each (14th September).

SUPERB STARLINGS (*Spreo superbus*). Five young reared, and there are two in the nest at present (14th September).

WHITE-CAPPED STARLING (*Heteropsar albicapillus*). The hen bird died while incubating four eggs.

JAPANESE ROBIN (*Erithacus akahige*). The cock bird killed the hen just when she had started building a nest. This is strange behaviour after five years of peace and happiness.

RENAULD'S GROUND CUCKOO (*Carpococcyx renauldi*). The two pairs nested three times, each pair laying two eggs each time. All the nests were built in baskets, inside the aviary shelter, and were about ten feet off the ground. Most of the eggs were unfertile, although two eggs had chicks which died in the shell just before they were due to hatch.

TAMBOURINE DOVES (*Tympanistria tympanistria*). Reared one young and are incubating two eggs now (14th September).

CROWNED STARLING (*Galeopsar salvadorii*). Reared two fine healthy young. Particulars of these have been given in an earlier number of the Magazine.

ROTHSCHILD'S GRACKLE (*Leucopsar rothschildi*). After a good many failures one beautiful young was reared. Details of which have appeared in an earlier number of the Magazine.

WHITE-BREADED PIGEON (*Gallicolumba jobiensis*). Two young reared.

FORMOSAN BAMBOO PARTRIDGE (*Bambusicola sonorivox*). A good many eggs laid all over the aviary, but not in a proper nest. None hatched.

SWINHOE'S PHEASANT-TAILED PIGEON (*Macropygia swinhœi*). At least a dozen young were reared. Two just out of the nest (14th September).

SLENDERBILL STARLING (*Cinnamopterus tenuirostris*). Laid, but no eggs were hatched.

RUPPEL'S STARLING (*Lamprotornis purpureopterus*). I had a pair of these in one of my larger aviaries with a great many other birds. They nested, and reared a fine healthy young one which was killed by other birds the day it left the nest. It was perfectly feathered and flew well.

PURPLE-HEADED STARLING (*Lamprocolius purpureus*). I have six of these in a large aviary. Two pairs nested and had young but none were reared. These were also with a good many other birds.

SILVER-EARED MESIA (*Mesia argenteauris*). One young one fully reared in a large aviary which was full of several different kinds of birds.

VIRGINIAN CARDINAL (*Cardinalis cardinalis*). One young reared in the above aviary.

BLUE BIRD (*Sialia sialis*). Two young reared.

SHAMA (*Kittocincla malabarica*). One young reared, although five were hatched in two clutches.

DIAMOND DOVES (*Geopelia cuneata*). A good many reared.

THE OCCIPITAL TREE PIE (*Urocissa occipitalis*). Two young were successfully reared. These same birds reared two young ones last year, which I left out of the list by mistake. I find these birds rear their young well, but when the young leave the nest the parents are likely to eat them. They ate up one last year, so I put the remaining young one in a cage, and they fed it well through the bars. This year the moment the young flew out of the nest I caged them and they were successfully reared.

MADAGASCAR PARTRIDGES (*Margaroperdix madagascariensis*). Two reared. Details given in an earlier Magazine.

ALEXANDRINE PARRAKEET (*Psittacula nipalensis*). The Lutino hen and normal coloured green cock bird reared two young. I have seven of these lutino bred young ones now, of different ages. I am afraid the five young reared in 1928 and 1929 are all hens. They show no signs of the collar, which generally appears when the bird is just over two years old.

The blue cock ALEXANDRINE, mated to a green hen, reared four strong and healthy young ones. Altogether I have nine of these now. Two out of the three young, bred in 1929, are cock birds, and have their collars already, but the third one bred at the same time shows no signs of a collar, so she must be a hen. I hope to mate this hen to the old blue cock next year, when I hope with luck to breed the first blue Alexandrine Parrakeet.

RING-NECKED PARRAKEET (*Psittacula krameri*). Six pairs of these nested, and all the eggs were fertile, but none were hatched. All chicks

dead in shell. As the nest-boxes are placed inside the aviary shelter there is not enough moisture. Will try them with a different type of nest-box next year, with a good deal of damp earth in them, and these boxes will be hung up outside in the flight of the aviary.

BARRABAND'S PARRAKEET (*Polytelis swainsoni*). Three healthy young were reared, although five were hatched. This old pair of birds have not once failed rearing young for the last seven years.

LAYARD'S PARRAKEET (*Psittacula calthrapæ*). Laid four eggs, but they were all unfertile. This is the first time these birds have nested with me.

MALABAR PARRAKEET (*Psittacula peristerodes*). Four young were reared.

TURQUOISINE (*Neophema pulchella*). A pair of this lovely Parrakeet was only turned out in the aviary the end of May, having arrived from Australia about a fortnight earlier. The hen took to the nest at once. After ten days the cock was found dead in the nest, and the hen was sitting on seven eggs. Most of these were unfertile with the exception of one, which did not hatch, although it had a chick.

QUEEN ALEXANDRA'S PARRAKEETS (*Northipsitta alexandræ*). A beautiful pair of these were acquired about the middle of May. As the weather was still cold I did not turn them out in the aviary before the end of May. Nested at once and have reared four lovely young. All strong on the wing and in perfect condition. Wonderful bit of luck to be successful so soon with these rare birds.

STANLEY CRANE (*Tetrapteryx paradisea*). Laid two eggs. Both unfertile.

In the animal enclosure at liberty :—

MANCHURIAN CRANE (*Megalornis japonensis*). Laid two eggs and sat well, but eggs were unfertile.

SARUS CRANE (*Megalornis antigone*). Found a nest of these birds a mile away from the enclosure. Both eggs unfertile. As these birds were both full winged I am surprised their eggs were not fertile.

DEMOISELLE CRANE (*Anthropoides virgo*). A pair of these nested in my garden, unfortunately outside the wired enclosure. One egg was laid, and a fine healthy chick was hatched. Did splendidly for twelve

days, and then was worried to death by a fox all night, and died of exhaustion in the morning.

BRUSH TURKEY (*Cathartus lathami*). Two fine mounds were built, but no eggs were laid.

MONAUL PHEASANTS (*Lophophorus impeyanus*). Four young reared.

RED JUNGLE FOWL (*Gallus gallus*). A great many reared, and are found long distances from here.

SONNERAT'S JUNGLE FOWL (*Galus sonnerati*). A few reared, but I am afraid they are crossing with the Red Jungle Fowl.

WHITE PEAFOWL (*Pavo cristatus* var.). Three young reared.

GOLDEN PHEASANT (*Chrysolophus pictus*). About six reared. I think most of the eggs were eaten by the Cranes in the enclosure.

CHUKOR PARTRIDGE (*Alectoris chukar*). A good many young seen. One hen was seen with seventeen young.

BLACK-HEADED SWANS (*Cygnus melanocoryphus*). Four beautiful young reared.

MANDARIN DUCK (*Aix galericulata*). Twenty-three Ducks were reared, sixteen of them in nest-boxes 20 feet up in trees, from full-winged birds. These when hatched were found walking round the fence trying to get into the pond. As soon as the gate of the wire enclosure was opened, the mother walked in with the Ducklings. Three Ducks were responsible for the sixteen Ducklings.

BAHAMA PINTAIL (*Dafila bahamensis*). One reared.

ROSY-BILLED DUCK (*Metopiana peposaca*). One reared.

CHILGE WIGEON (*Mareca sibilatrix*). One reared.

CAROLINA DUCK (*Aix sponsa*). Seven reared.

RED CRESTED POCHARD (*Netta rufina*). Six were hatched, but four were killed by the Black-necked Swans and only two were reared.

MELLER'S DUCK (*Anas melleri*). Four young were fully reared.

THE MADAGASCAR WHITE-BACKED DUCK (*Thalassornis leuconota*). This rare Duck laid three eggs and after incubating them for three weeks deserted the nest. The eggs were put under a hen, and three fine Ducklings were hatched. They only lived for ten days, and I feel certain they would have been reared had the Duck hatched them and taken them into the water.

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## THE BIRDS AT KESWICK

By A. MARTIN

Mr. Gurney has given me permission to write the following list of the birds which are under my charge here, and which at present inhabit the numerous aviaries and enclosures at Keswick Hall. Of course, the inmates are constantly changing; new arrivals keep on coming, and the older inmates die off, and not only old inmates, but we have our misfortunes as other members who keep large collections of birds must have, and deaths of newly imported specimens, or illness, or perhaps worst of all, fatal combats between ill-agreeing birds in the same aviary, all tend to keep our avian population changing.

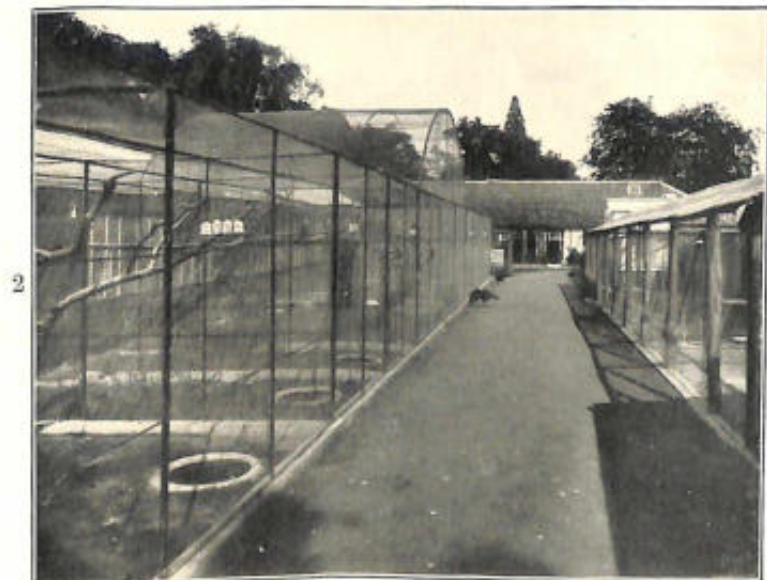
As various accounts and descriptions of the aviaries have appeared in the Magazine at various times, I have not bothered to further describe them in any detail, but for the sake of convenience have merely numbered them for this article; they are really arranged in three completely separate blocks, and except for the range of aviaries occupied by the Birds of Prey, have nearly all heated shelters, adjoining the flights, many lit by electric light which is very useful in the long winter evenings. The various paddocks or enclosures are well sheltered by surrounding trees, and are of large extent, the biggest being nearly three acres in area, but the pond in the garden on which are the Water Fowl is small, and not more than twenty or thirty Ducks are kept on this. The collection comprises all orders of birds and I do not think that Mr. Gurney has ever specialized in any particular group. I will commence with the aviaries proper.

*Aviary 1.*—A mixed lot of Budgerigars.

*Aviary 2.*—Numerous Lovebirds, including Black-cheeked, Fischer's and Nyasa; these all breed freely, without any attention, and the aviary is full of hybrids, whose parentage is sometimes difficult to make out.

*Aviary 3.*—A pair of San Blas Jays, which nest every year, but invariably eat their young ones, sometimes when the young birds are almost on the point of leaving the nest.

*Aviary 4.*—Two Bleeding-heart Pigeons, probably both cocks, as they have never shown any signs of breeding; numerous Diamond



THE KESWICK AVIARIES.

- 1.—The writer of the article with some of the birds.  
2.—One of the Ranges of Aviaries.

Doves which breed freely in this aviary ; and a mixed lot of African Finches including Pectoral Finches, Orange Weavers, Pileated Finch, Black-headed Nuns, etc.

*Aviary 5.*—A pair of Pagoda Mynahs, a Red-vented Bulbul, and Diamond Doves.

*Aviary 6.*—A pair of Laughing Kingfishers ; this species has been bred here in the past, but not of recent years.

*Aviary 7.*—Empty.

*Aviary 8.*—Empty.

*Aviary 9.*—White Budgerigars.

*Aviary 10.*—A large and roomy aviary, the flight planted with clumps of bamboos and a good-sized pool ; it contains three Tiger Bitterns and a pair of Roseate Spoonbills.

*Aviary 11.*—Eight or nine Diamond Doves, one Talpacoti Dove, one Picui Dove, one Bay-winged Cowbird, a pair of Saffron Finches, several Red-billed Weavers and Yellowish Weavers, four Crimson-crowned Weavers, two Napoleon Weavers, a Sulphury Seedeater, a Yellow Sparrow (*luteus*), and a pair of Black and Yellow Grosbeaks (*Mycerobas melanoxanthus*) ; these birds bred this year, but the young were not reared, and the old birds did not attempt to nest again.

*Aviary 12.*—A pair of Quoy's Crow-Shrikes (*Cracticus quoyi*), believed to be the only pair in captivity in Europe. Large birds, the size of a Jackdaw, they are very tame, and have a series of beautiful bubbling notes ; they remind one of the Piping Crow of Australia.

*Aviary 13.*—A very large flight aviary, roughly measuring 75 feet in length by 25 broad, and 30 feet high, it has no shelter, but one end is boarded and roofed in. It is thickly planted at the back with laurel, box, and bamboo, the grass in front being kept mown ; it contains a good-sized pool, surrounded by clumps of ornamental grasses and irises. It is inhabited by the following birds : Two Sacred Ibises, one Australian White Ibis, a pair of Cayenne Rails, three Oyster-catchers, several Knots, six or seven Ruffs and Reeves, a pair of Alpine Choughs, which generally make a nest in a hollow log every spring, but never get any further, a Nicobar Pigeon, out the whole year round, and a flock of Australian Crested Bronze-winged Pigeons (*lophotes*), which breed freely. A common cock Goldfinch mated to a hen Greenfinch live here

too and nest regularly, but the Choughs or Ibises always take the young ones.

*Aviary 14.*—A Jackal Buzzard, bred here twenty-five years ago, and a Cara-cara.

*Aviary 15.*—A very fine adult King Vulture, perfect in every way.

*Aviary 16.*—A pair of Kolbs Vultures, and an adult Brown Milvago, the latter perfectly tame and loves to come to the front of the aviary and have its head scratched.

*Aviary 17.*—A Black-throated Buzzard-eagle (*Busarellus nigricollis*), a very rare Hawk in captivity.

*Aviary 18.*—A female Montagu's Harrier, the male died this summer; bred in Norfolk and now fully adult.

*Aviary 19.*—A Rufous-tailed Buzzard, and an unidentified Harrier-eagle from South America, rather resembling the Chilean Sea Eagle.

*Aviary 20.*—A very fine pair of American White-headed Eagles, now reaching full maturity.

*Aviary 21.*—A pair of Rosella Parrakeets, a pair of Crimson-wing Parrakeets, a hen Pennants Parrakeet, a pair of Ring-necked Parrakeets, a Kagu.

*Aviary 22.*—A pair of Redrump Parrakeets, a pair of Cockatiels, and a pair of Tataupa Tinamous.

*Aviary 23.*—A pair of Spree Starlings, one bred here last year, and some Purple-headed Glossy Starlings.

*Aviary 24.*—A very large flight cage and shelter, it contains four Scarlet Ibises, three Little Egrets, a Javan Grey-backed Egret, some Buff-backed Herons, two Pileated Herons, and an Australian White-fronted Heron, *Notophox novae-hollandiae*, a very pretty slim, grey, and rufous bird, about the size of a Night Heron.

*Aviary 25.*—Several Common Glossy Starlings, a single Red-shouldered Marsh Bird, and a pair of Cuban Tree Quails.

*Aviary 26.*—Three White-crested Jay Thrushes.

*Aviary 27.*—A pair of Sclater's Ground Pigeons; these lay regularly every year, but although the young have hatched, they have never been reared. In several cases the old bird has broken her egg on the nest either from carelessness or some other cause, she generally then eats it. Long-tailed Grass Finches, a cock Cherry Finch, a Steel Finch,

and a collection of Weavers including Napoleon, Yellow-headed, Scarlet, Orange Bishops, Baya, and Black-throated also inhabit this aviary.

*Aviary 28.*—A very fine pair of Purple-crested Turacous, a Kuhl's Ground Thrush, *Geocichla interpres*, and Zebra Finches.

*Aviary 29.*—A very long flight aviary, some 70 feet long by 15 feet wide, with an unheated shelter at one end. It contains forty or fifty green and yellow Budgerigars, a pair of Common Glossy Starlings, a Red-shouldered Marsh Bird, three Black-tailed Godwits, a Redshank, two South American Spur-winged Plovers, and a pair of Bamboo Partridges, sp. ?.

*Aviary 30.*—A flock of Blue Budgerigars, and a Maleo, in perfect condition, just assuming its top-knot and its pink breast; the pair to it, an equally fine bird, escaped this summer, when the aviary was being cleaned out, and although seen about in the woods near by, has not so far been recaptured.

*Aviary 31.*—This is more of a small enclosure than an aviary, and contains a Porcupine.

*Aviary 32.*—Three Plumed Jays.

*Aviary 33.*—A Red-eyed Glossy Starling, and another, probably *L. chloropterus*, a pair of Collared Jay Thrushes, a pair of Green Cardinals, a Black Indian Francolin, and two Black Rails.

*Aviary 34.*—A large and roomy flight, well planted with trees and shrubs. It contains three Donaldson's Turacos; a male Scarlet Tanager; three White-headed Starlings; an Indigo Finch; a pair of Red-crested Cardinals; three Wheatears, most charming little birds when once established, they sit continually on the large stones in the aviary flight, always flicking their tails, and flying off to catch a passing insect; a Black Rail, very tame; and an Abyssinian Spotted Francolin; and last but not least a fine pair of Renault's Ground Cuckoos, lately received from Mr. Delacour, a description of these rare birds appeared in the Magazine for September, 1927.

*Aviary 35.*—A pair of small Jay Thrushes, believed to be *I. cinereiceps*; a pair of Rose-coloured Pastors, the cock continually singing; a Shamah; an Indigo Bunting; and a male Painted Quail.

*Aviary 36.*—A pair of small Grey Grackles, which have never been

identified; a Green Fruitsucker; and a White and Blue Kingfisher, *H. saurophagus*.

*Aviary 37*.—A pair of Guira Cuckoos, very tame and full of character, but susceptible to the cold.

*Aviary 38*.—Two Motmots, a pair of Golden-breasted Toucanettes, and a rare Babbler, which has not been identified.

*Aviary 39*.—A Toco Toucan, a bird with an evil temper.

*Aviary 40*.—A pair of Ariel Toucans, and a pair of Green-billed Toucans.

The last five aviaries are all connected with the Bird House, and their occupants can be shut up in it during the winter and bad weather.

*Aviary 41*.—A pair of Redstarts, and a collection of African Finches, which include Blue-breasted Waxbills, Avadavats, Three-coloured Nuns, Golden-breasted Waxbills, Fire Finches, Bichenos, and Masked Grass Finches.

*Aviary 42*.—Three Occipital Tree Pies, beautiful birds for a large roomy aviary, where they have plenty of room to fly and display themselves.

*The Bird Room*.—One side of this is fitted up with large cages, 3 or 4 feet long by 2 feet high. They contain respectively a pair of Royal Starlings, a Bell Bird in perfect condition, which calls loudly every day, a six-plumed Bird of Paradise, a Wallace's Bird of Paradise, an adult King Bird of Paradise, a Hooded Pitta, a pair of Reus's Whistling Thrushes, a pair of Amethyst Starlings, a Greater Spotted Woodpecker, and a Malachite Sunbird, a celebrated winner of prizes, whose doings have been already recorded in the Magazine.

In smaller cages are a Black-headed Sugar-bird, three Yellow-winged Sugar-birds, a Sun Conure, a pair of White-breasted Caiques, a Blue Mountain Lory, and a Black-capped Lory.

The Garden Pond contains the following Waterfowl:—Three Red-billed Tree Ducks, one Black-billed Tree Duck, one Fulvous Tree Duck, two White-faced Tree Ducks, a pair of Paradise Sheldrakes, a pair of Common Sheldrakes, a pair of Red-crested Pochards, a male Pintail, a pair of Bahama Ducks, a pair of Japanese Spot-bill Ducks, Mandarin Ducks, Carolina Ducks, a pair of Falcated Ducks, a male Common

Wigeon, a pair of Chiloe Wigeon, a pair of Tufted Ducks, and a pair of Chestnut-breasted Teal.

*Enclosure 1.*—A flock of Flamingoes, a pair of Stanley Cranes, very tame, a Screamer, a pair of Bernicle Geese, a pair of Brent Geese, and numerous Silver Pheasants.

*Enclosure 2.*—A very large enclosure, somewhat thickly planted with shrubs and trees, it contains a pair of Sarus Cranes, many Silver Pheasants, which breed freely every year; the Wallabies also live here and do exceptionally well on the light soil.

*Enclosure 3.*—A pair of Lilford's Cranes, Silver Pheasants, and a small flock of Soay Sheep.

*Enclosure 4.*—A pair of Cereopsis Geese.

*Enclosure 5.*—The largest paddock of the series, being some three acres in extent. Here are kept a pair of White Asiatic Cranes, seven Demoiselle Cranes, one very dark, almost a melanism, three Crowned Cranes, White Rheas, and a Tantalus Stork. A large converted shed at one end makes convenient winter quarters for those birds which need it.

*Enclosure 6.*—A pair of Pileated Guans, a pair of Grey-backed Trumpeters, Vulturine Guinea-fowls, a pair of Razor-bill Curassows, and a pair of Eared Pheasants (*Crossoptilon*) are the occupants of this enclosure, which leads from one block of aviaries to another; it has plenty of winter accommodation in the shape of sheds and houses surrounding, where the birds can be kept dry and warm, without artificial heat.

And the final and most recent addition to the Keswick Zoological Collection, which I shall mention, is a very large Bird-eating Spider from the West Indies, which recently arrived in Norwich in a crate of bananas.

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## BREEDING RESULTS AT THE KESTON FOREIGN BIRD FARM, SEASON 1931

By E. J. BOOSEY and ALEC BROOKSBANK

Though we have just endured a spring and summer so consistently cold and wet that most records, even for this unpleasant climate, have been broken, the birds themselves seem to have remained curiously

unaffected by the vile weather and our breeding results, particularly of the Parrakeets, are well up to standard, though some of the other birds, especially Zebra Finches, have not done so well as in previous years.

The following have all successfully reared young ones during 1931 :—

**PARRAKEETS.**—Bourke's, Turquoisines, Blue-wings, Many-colours, Brown's, Barraband's.

**FINCHES.**—Ruficauda, Gouldian, Long-tailed Grass, Heck's, Masked, Cherry, Zebra, White Zebra, Bengalese.

**DOVES.**—Diamond, Jamaican Ruddy Quail.

**MISCELLANEOUS.**—Budgerigars, Cockatiels, White Java Sparrows.

**HYBRIDS.**—Turquoise  $\times$  Blue-wing.

All the Parrakeets, with the notable exception of Bourke's and Blue-wings, bred here last season as well, when we were also successful with Elegants. These, however, failed this year owing to the old breeding hen dying in April from peritonitis caused by an egg bursting inside her when she was on the point of laying. A new hen was acquired but she at once started a heavy moult and has so far shown no desire to breed. Blue-wings are the least scarce and perhaps the most easily bred of the Grass-Parrakeets.

Some Turquoisines, even when they lay fertile eggs (and a pair take some time before they are properly mated) are unfortunately not over reliable either as sitters or parents; but the cock in breeding plumage is such an exquisite little bird that no efforts must be spared to keep this dwindling species from finally dying out.

The rearing of young Bourke's is an event of interest and by no means a simple achievement, for perhaps of all Parrakeets Bourke's are the most fussy about their nesting site, and what is more, a hen Bourke's, unlike other Parrakeets, will not even condescend to inspect a box that does not exactly fulfil her requirements or is not placed in the precise position she considers the most suitable in the aviary. One of our pairs was given four different kinds of nest from which to choose in the inside shelter, but though both were in obvious breeding condition, the cock continually feeding the hen, matters got no further until a box was placed under cover, in the outside run, when the hen instantly inspected it and had started laying within a week. Her

choice of a nesting site, however, proved to be most unfortunate as three of the four young ones she hatched succumbed when about two days old to the cold of that particular night in July when a frost was actually registered, and no doubt had the box been in the shelter all would have been well.

We now possess, therefore, and have bred four of the seven known species of Grass-Parrakeet. It seems extremely unlikely that the remaining three, the Splendid, the Rock Grass, and the Orange Bellied will ever again come into the hands of aviculturists.<sup>1</sup>

The Hybrid Turquoise × Blue-wings are the progeny of a cock Blue-wing and hen Turquoise, and it will be interesting when they have moulted out to see which parent they take after most. They started by being very like their father, but are now hardly distinguishable from rather large hen Turquoisines except for a few characteristic Blue-wing mannerisms and the fact that their blue is a shade darker than that of a true Turquoise. Our oldest breeding pair of Brown's reared nine youngsters this season and besides being model parents in every way always seem to manage to produce their families in even pairs! This pair have fully reared sixteen young during the past two summers.

Many-colours (which we have now succeeded in fairly well establishing) seem to be only single brooded provided they approve the number of young reared in the first nest. An old pair, which have lived to our knowledge in an aviary for fifteen years, though not all this time with us, produced two in their first nest, and not being satisfied with this effort nested again and produced another four, whilst another pair of birds produced five from their first clutch and did not lay again.

With regard to the Finches. There is no doubt whatever that they prefer a dry, hot summer, and it is difficult to get them properly going if spring is delayed or cold and wet.

As previously stated, our Zebra Finches have not produced their standard average, and from a theoretical expectation of 600 young we shall only obtain about 450.

<sup>1</sup> Since writing these notes we hear that about six Splendids have been obtained and are now in Mr. Harvey's aviaries in Australia. We shall hope to hear that he has been successful in breeding them.

Again, all our Ruficaudas, which are usually double brooded and should rear from seven to ten youngsters per season, only nested once, with the exception of a pair who reared five in their first nest and laid again but refused to sit. The eggs from the latter nest were, however, successfully transferred to Bengalese. Young Ruficaudas do a half moult when about four months old but take, like young Gouldians, from seven to nine months to come into full adult plumage, and the cocks seem to get redder and redder on the face as time goes on, obtaining full colour about the third year. They breed, however, quite successfully their first season, although it is then easy to mistake young cocks for hens. They require live food when rearing young, although we have had pairs that have refused to touch any, rearing their young exclusively on rye-grass, and dry seed.

Our Long-tailed Grass Finches were the only Finches unaffected by the weather and seemed to make up their minds it was not worth troubling about. They have all done remarkably well, one pair producing sixteen young during the season. (It is interesting to note that this pair were both aviary bred here last year, which dispels the theory that cocks of this species bred in captivity are usually infertile.) About fifty have been reared. A Long-tailed Grass Finch hen mated to a cock Heck's produced ten young, all of which turned out to be ordinary Long-tails (yellow beak). It will be interesting to see whether they in their turn throw Heck's (red beak) when mated *inter se*.

Cherry Finches do not seem to warrant the bad name they have got as unsuccessful breeders, but they are rather addicted to turning their young out of the nest. Of all the Australian Finches they are probably the most beautifully marked, although they are not highly coloured and consequently not so conspicuous as, for instance, the many-hued Gouldian. They are particularly fond of rye-grass and should be given a bundle of pea-sticks in which to nest, instead of a box.

At the beginning of the season we had a whole aviary of Gouldians stolen, and the thieves not only took the parents but their nests and eggs as well. Consequently we are extremely short of these birds this season, but hope to have replenished our stock by next year. They are late starting to nest, and full results are not yet to hand, but some

are already fledged, and by the noise the young make in their nests we hope to have quite a nice lot.

It might be desirable here to give a little advice. Prospective purchasers of Finches should be careful, if possible, always to obtain aviary-bred birds. They are far hardier and the hens are not so liable to egg-binding as imported specimens. Of the remaining birds reared here the Jamaican Ruddy Quail Doves are probably the most interesting especially as they have been more or less exterminated in their native haunts by the imported Mongoose. One hardly realizes what truly "ground" birds they are until one sees the young leave the nest when only a few days old and about the size of newly hatched chickens, yet fully capable of running about and looking after themselves and even perching on low branches.

At the beginning of the year we found ourselves so pressed for room that we were reluctantly forced to part with pairs of the more ordinary species such as Redrumps, etc. We have now, however, obtained further land on which to extend and hope to acquire them again next spring. Notable recent additions to the farm are breeding-pairs of the following:—Stanley Parrakeets, Pennant Parrakeets, Bartlett's Bleeding Heart Pigeon, Blue-eyed Peaceful Doves, Lead-beater's Cockatoos, African Grey Parrots, Red-collared Lorikeets, Swainson's Lorikeets, Varied Lorikeets. We hope to be successful with the Greys. They are almost certainly a true pair, and we have heard of a gentleman in India who breeds so many he does not know what to do with them!

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## NOTES ON THE BLACK-THROATED CROW-TIT

By H. C. EUSTACE

Whilst at the London Zoo, soon after my return from China, I was very pleased to see some specimens of the Black-throated Crow-tit in an aviary near the entrance of the Bird House.

These birds were part of a small collection of fifteen which reached the Shanghai bird market in the early spring of 1929 and were purchased

by Mr. Hampe and myself; reference has already been made to the specimens at the Zoo (see the Magazine for July, 1929, p. 166), so that I propose to jot down a few notes about the birds I kept for my own aviary in Shanghai.

At first I put the birds in a large bamboo cage and fed them with mixed seeds, such as millet, hemp, and sunflower, together with fruit, nuts, and live insects, but before many days had passed it was necessary to transfer them to an all-wire cage as they were playing havoc with the woodwork.

From my observations, I gather that, like some Parrots, this destruction of woodwork was primarily a form of exercise, and that they were not hunting for insects concealed in the wood.

The birds rapidly settled down to their new quarters and within the first few hours accepted insects from my fingers.

As the colouring and general appearance of both sexes are alike I decided to turn them all into a small garden aviary hoping that one pair might show signs of nesting when the remainder could be liberated and the pair left to carry on undisturbed.

But—as so often happens in Aviculture—one cannot plan ahead, and one morning I found my Crow-tits sadly reduced in number, due to the garden coolie having forgotten to lower the screening the night before, a cat or civet had disturbed the birds and chased them on to the wire netting, managing to kill two outright and tear a leg from each of two others.

This left me only three sound birds and the two maimed birds.

At first I thought it would be better to destroy these one-legged birds, but as they continued to feed and remained quite active, I kept them for a month and liberated them after their wounds were quite healed.

Although food and water were placed outside the aviary the birds disappeared after one or two days and did not return.

During the summer the aviary was troubled with snakes and by August only one bird was left.

This bird, which had become quite tame, was liberated in September and remained at full liberty in the garden for nearly three months, during which time it was fed regularly two or three times a day in a

small feeding box attached to the wire of an aviary. It seldom left our garden and would come flying to me for mealworms as soon as I appeared in the garden.

After a few days at liberty it found sleeping quarters in the Pigeon House and used this regularly until the time of its death, for I found it dead one morning after a very severe typhoon.

The Black-throated Crow-tit makes an attractive pet bird; and I hope on my return to China this winter to be able to obtain further specimens and eventually to breed it in captivity.

I give the following extracts from my Notes:—

“Feeding.—In addition to seeds and insects the birds were very fond of ripe fruits and berries; biscuit, sponge cake, and nuts were also appreciated. Small quantities of fat were eaten, but the bulk of the food was vegetable matter, including the bark and leaf stalks of trees in the aviary.

“In cages and aviaries these birds live peacefully together and are safe to mix with other small birds, Finches, etc. . . .

“The vitality of these birds is extraordinary, as shown by their recuperative powers after severe injury, and it was very interesting to note the rapidity with which they found ways of overcoming their disabilities. For example, two or three days from the time that the birds were injured I noticed that where formerly food was held securely between both feet whilst being eaten, when they had only one leg they found corners in the aviary woodwork into which food was thrust whilst being consumed.

“Also to rest the leg muscles the injured birds would hang head down from a bough, or the aviary roofing wire, after the manner of Hanging Parrots.”

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## REVIEWS

IN SEARCH OF PARADISE BIRDS<sup>1</sup>

We, in England, have become quite familiar with Birds of Paradise as one or more species are generally represented in the London Zoological Gardens, where the list of species that have been shown now totals over twenty out of the seventy or more that are known. But few of us have realized the difficulty and dangers that have to be encountered by those who would obtain these jewels of the feathered tribe whom Nature has adorned in such extravagant and varied fashion.

In England we have been particularly fortunate in the possession of enterprising collectors, and so the majority of those birds that have been captured alive have come here.

The first Birds of Paradise to be received by the New York Zoological Park were three Greater Birds which arrived in 1910, since which date occasional other specimens were obtained, but the authorities there, especially the Curator of Birds, Mr. Lee S. Crandall, were determined if possible to obtain a representative collection of these birds even though this involved a special expedition to New Guinea to collect them. Having obtained the necessary leave to go, Mr. Crandall was fortunate in securing the services of Mr. John Ward, of Sydney, who was well acquainted with the country, to assist him with his task, which was no easy one for a stranger to a land of great difficulties and hardships.

Those who imagine that to see and capture Birds of Paradise one has only to set foot on the shores of New Guinea, have much to learn of this wonderful island which is 1,400 miles long, mostly formed of high mountains whose slopes are covered with impenetrable vegetation. It is not until one has climbed on foot for many days, with native carriers, who are not too keen on the job, and hence difficult to obtain, to convey one's necessities of life over rough mountain tracks, through raging rivers and along the edges of precipices, that one hears the call

<sup>1</sup> *Paradise Quest, a naturalist's experiences in New Guinea.* By Lee S. Crandall. Charles Scribner's Sons, 23 Bedford Square, London, W.C. 1. Price 10s. 6d. net.

of a Paradise Bird. Then, and not until then, may an axe-head which has cost a few cents in civilization be worth a Blue Bird of Paradise.

Scarcity of food was one of the difficulties the travellers encountered, and on several occasions the success of the expeditions was much endangered by the prospect of starvation, but perseverance and endurance were eventually rewarded, and the collection reached the coast. But troubles were not at an end, for the steamer which was to convey the travellers and their priceless cargo to Sydney ran aground on a coral reef, where after a wait of a week with the danger of complete shipwreck the party was rescued by another boat. Several weeks later New York was safely reached with forty Birds of Paradise and two hundred lesser relatives, alive and happy.

Mr. Crandall's book is extremely interesting, for it tells us just how these birds are got, and gives us an insight into the mysterious land they inhabit, its natives, who still use stone axes, and its vast tracts of forest and mountains.

D. S-S.

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## AN INTRODUCTION TO THE LITERATURE OF VERTEBRATE ZOOLOGY<sup>1</sup>

After six years of hard work, Dr. Casey Wood and the officials of the Libraries and Zoological Department of McGill University have completed a magnificent quarto volume with the above title, intended to assist students of vertebrate zoology and its bibliography, as well as universities and other librarians, in securing a fair knowledge of an important branch of natural science. It is divided into three distinct sections.

Section A reviews the literature of vertebrate zoology from the earliest times to the year 1930. Section B gives a ready index to short author-titles on vertebrate zoology arranged geographically and in

<sup>1</sup> *An Introduction to the Literature of Vertebrate Zoology*, compiled and edited by Casey A. Wood, M.D., LL.D., Colaborator, Division of Birds, Smithsonian Institution. 4to, pp. xix + 643, coloured frontispiece. London: Oxford University Press. Price three guineas.

chronologic order. Section C, a partially annotated catalogue of the titles of vertebrate zoology in the libraries of McGill University.

This great work of Dr. Casey Wood will be found of very great value to the serious student of zoology in any of its branches, for by its use he will be able to find references to the works of others in his particular branch of study from the earliest times. The chapters devoted to the early writers are full of interest and instruction, while the name of any author or work can be found at once.

THE AVICULTURAL MAGAZINE has its proper place among other works of importance, and at the end of its long list of volumes appears the following note:—

This Magazine is a scientific periodical of the greatest value not only to students of avian domestication, but to ornithologists in general. It is written (by numerous naturalists of note) and well edited by ornithologists of international repute. Finally, it is well printed. The illustrations, both black and coloured, are of the best, although the latter were (very properly) omitted during the World War. It is appropriate that the premier magazine on general aviculture should be published in England, the home of domestic faunaculture.

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### BIRD WATCHING<sup>1</sup>

There are few more fascinating pursuits than that of bird watching, and I have no doubt that almost all of the members of the Avicultural Society spend the greater part of their time during a holiday in the country in watching the wild birds that frequent the neighbourhood. They never go for a ramble without their field-glasses and note-book, and their most delightful memories of a holiday are those which bring back the discovery of some rare species that they have never before been fortunate enough to see in its wild state, such as the Bearded Tit, on Heigham Sounds, or the Cornish Chough on Tintagel rocks. Yes, most of us are bird watchers of a sort, and derive immense pleasure from the habit, but we don't all know how to pursue our pastime to the best advantage and to make our efforts of some real use to science. We have needed a guide as to a system, and Mr. Nicholson's new book

<sup>1</sup> *The Art of Bird Watching, A Practical Guide to Field Observation*, by E. M. Nicholson. Price 10s. 6d. net. H. F. and G. Witherby, 326 High Holborn, London, W.C.

tells us just how we should proceed. Mr. Nicholson is one of our very best field ornithologists and has watched birds in many parts of the world, including the tree-tops of the forests in British Guiana, and has contributed much to science by his observations and deductions; and while we may not all possess his skill or be able to afford the time to carry out our bird watching to the extent that he has done, all who read his book will derive much interest and instruction from its pages.

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## CORRESPONDENCE

### NESTING OF TWO RARE DUCKS

SIR,—Mr. Webb, the well-known collector of birds, last year brought some Meller's Ducks (*Anas melleri*) from Madagascar. This Duck represents the Mallard in Madagascar, and is peculiar to the island. It is a resident species, which is found all over the country on lakes and marshes. It is one of the largest of Wild Duck, and one of the best for the table. Its colour is not very attractive, being in both sexes like that of a female Mallard, but darker, with a long and strong bill of a dark olive colour. This bird has rarely been imported before. I was lucky enough to secure a pair, and they were put on my pond with the Black-necked Swans and other small Ducks. In May I noticed the hen bird sitting in a nest-box that had been supplied for Mandarins. Four young were hatched, and were successfully reared by the parents. They are almost as big as their parents now, and are full winged, and I hope they will stay. I believe this is the first time this bird has been reared in England.

The other rare Duck that nested with me was the Madagascar White-backed Duck (*Thalassornis leuconota insularis*). Some of these were imported by Mr. Webb from Madagascar, and I believe for the first time. This is a much more attractive bird than the Meller's Duck, and is most peculiar in its shape and habits. There is only one species of that genus with two geographical sub-species, one occupying the whole of Tropical Africa and the other peculiar to Madagascar. These Ducks are most sedentary, spending the greater part of their lives on

the same small piece of water, which is always partly covered with vegetation, such as water-lilies, reeds, and rushes. They dive very easily, but seldom fly, and in fact hardly ever move to any distance. They are distributed all over the island. Their colouring is not brilliant, and they are curiously marked with black and buff, with a white patch on the back. I got a pair of these from Mr. Webb last year, and they were put on a small pond with Mandarins, Carolines, and Pink-headed Duck. In June the hen was found sitting on three eggs in a nest on the ground, which was covered over by reeds. The eggs were enormous for such a little bird, and of a dark chocolate colour. The Duck deserted the nest after sitting on the eggs for over three weeks. I then put the eggs under a broody hen, and they all hatched out in perfect condition, but the Ducklings only lived for ten days. I feel certain they would have been reared successfully had the Duck hatched them off herself and taken them on the water with her. I hope next year to rear some successfully.

ALFRED EZRA.

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#### BREEDING TURQUOISINE PARRAKEETS

SIR,—With reference to yours in the November number, I have been fortunate enough to rear two nests of three each from a pair of Turquoisines. The last three left the nest about a week ago, and seem strong birds.

H. WHITLEY.

3rd November, 1931.

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#### THE NEW YORK HUMMING BIRD

With reference to Mr. Crandall's letter which appeared on page 292, the Editor wrote to him asking for details of the treatment which had resulted in a Humming Bird living in the New York Zoological Park for three years and four months. Mr. Crandall has kindly replied as follows :—

“ We change the food for our Humming Birds early in the morning, sometimes at noon in very hot weather, and again just before five o'clock.

This last feeding is left in the cage overnight, and even in hot weather is still sufficiently fresh to be harmless to the birds before it is renewed, early in the morning. We use the usual mixture of condensed milk, Mellin's Food and honey, diluted in water.

• "We try to keep the temperature of our building somewhere around 70 degrees, but as, of course, there is some fluctuation, we have introduced a small resistance unit into the Humming Birds' cage to make sure that there is sufficient warmth. I really attribute the loss of the specimen about which I wrote you to the failure of this resistance unit during a sudden chilly night. The bird was comatose the following morning, and continued efforts failed to revive him.

"When cut flowers are available, we keep a few in the cage at all times, and during the winter months, replace them with a flowering begonia or something of the sort. When the weather is warm enough, we place the cage out of doors in the direct sunshine for an hour or two, and in the winter have made some use of an ultra-violet lamp. I am under the impression that the great amount of sunshine with which we are blessed is a most important factor in keeping Humming Birds alive.

We now have a very nice specimen of Gould's Violet-eared Humming Bird, *Petasophora iolata*, which we have had about six weeks. It is doing very nicely at present, but not having had previous experience with the species, know nothing of its potential longevity."

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## THE FORTHCOMING CRYSTAL PALACE SHOW

The Show, which will take place from 4th to 6th February, 1932, should be an improvement on all previous ones so far as foreign birds are concerned, for a real improvement in the housing of this section has been decided upon. The foreign birds are to be accommodated in the large restaurant in which a minimum temperature of 60° Fahr. can be guaranteed, and so no anxiety on this score need deter the owners of the most delicate birds from exhibiting. The lighting of this room is also good. The Show is now a national one, in every sense of the word, and is organized by the officials of the Crystal Palace,

which is the property of the nation, so that any profit derived from the undertaking will go to the upkeep of the Palace or the improvement of future shows.

The classification is a generous one, and there will be thirty-five classes for foreign birds, these being divided into three sections, each under a separate judge, namely: (1) Parrots (or what are termed "Parrot-like birds", but they are all Parrots); (2) Seed-eating birds other than Parrots, and (3) Insectivorous, and Nectar-feeding birds. We note that Gouldian Finches are to have a whole class to-themselves. The secretary of the Show, Mr. S. A. Legg (Crystal Palace, S.E. 19), is appealing for donations to enable him to increase the prize-money for the foreign birds, and it is hoped that those who have the welfare of this very interesting and instructive annual event at heart will generously respond.

D. S-S.

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## THE INDEX-GUIDE

The Index-Guide to the AVICULTURAL MAGAZINE from its commencement in 1894 to the end of 1930, which was so much needed by our members, has now been completed by Dr. Hopkinson, and can be had from Messrs. Stephen Austin & Sons, Hertford, for 10s. 6d. post free. It is bound in cloth in the same style as the annual volumes of the Magazine and so forms an extra volume to the series. Although Dr. Hopkinson has most generously relieved the Society of the expense which the compilation of such a volume might have entailed, the cost of printing and binding the edition has necessarily been considerable, and I would ask all members to order a copy without delay and so help to defray the expenses incurred.

EDITOR.

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## AVICULTURE, VOLS. II AND III

These two volumes, which complete a work of great practical use to aviculturists, are now ready and can be obtained, price 15s. each (postage for the two volumes, 9d.), from our publishers. The edition is limited to 300 copies and volume I is already out of print. The volumes each contain a very large number of coloured and uncoloured plates.

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FOR THE STUDY OF  
FOREIGN & BRITISH BIRDS  
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## List of Members

1st JANUARY, 1931

NOTICE.—Members are particularly requested to inform the Hon. Secretary of any error in the spelling of their names, addresses or descriptions, so that it may be corrected.

- ABELL, Rev. R. B.; SS. Peter and Paul's Clergy House, Gloucester Road, Teddington. (Jan., 1926.)
- ADAMS, John; Darsdale, Raunds, Northants. (Nov., 1930.)
- ADAN, George H.; 17 Avenue des Trois Couleurs, Woluwe Saint Pierre, Brussels. (Aug., 1930.)
- AINSWORTH, A.; 7 Samoa Street, Kilbirnie, Wellington, New Zealand.
- ALEXANDER, Mrs.; Buttfield Cottage, Worth, Crawley, Sussex. (Oct., 1930.)
- ALLEN, A. N.; The Rambles, Salfords, Horley, Surrey. (Sept., 1927.)
- ALLEN, Miss GERALDINE RUSSELL; Dabenhall Hall, Northwich, Cheshire. (March, 1929.)
- ALLEN, M. T., F.Z.S.; Ravenswood, Northwood, Middlesex. (March, 1925.)
- ALLENBY, FIELD-MARSHAL THE VISCOUNT, G.C.B., G.C.M.G.; Naval and Military Club, Pall Mall, S.W. (Nov., 1922.)
- AMBLER, S.; Hoy le Court, Baildon, Yorkshire. (Sept., 1930.)
- AMSLER, MAURICE, M.B., F.Z.S.; Eton Court House, Eton, Windsor. (Dec., 1908.)
- ANDERSEN, LECTOR, Pastor; Kongevejen, 98 Sønderborg, Denmark. (Oct., 1928.)
- ANDERSON, ALISTAIR; Tullichewan Castle, near Balloch, Dumbartonshire. (June, 1923.)
- APPLEBY, JOSEPH; Farnley, Great Crosby, Liverpool. (Oct., 1923.)
- ARCHER, Mrs. E.; The Stream, Kingsford Hill, Colchester. (May, 1930.)
- ARNAU, JOSÉ JULIÀ (Ingeniero); Plaza Constitucion 15, Binisalem, Mallorca. (Jan., 1927.)
- ARNOLD, EDWARD W. C.; Babylon, Long Island, N.Y., U.S.A. (April, 1928.)
- ARNOLD, J. H.; 4002 Massachusetts Street, Long Beach, California, U.S.A. (Oct., 1927.)
- ASTLEY, Mrs. HUBERT; Brinsop Court, Hereford.
- AUBURN, L. W.; Beech Bough, Barnet Gate, Arkley. (July, 1929.)
- BAILY, W. SHORE, F.Z.S.; Boyers House, Westbury, Wilts. (Feb., 1920.)
- BAKER, E. C. STUART, F.Z.S., M.B.O.U.; 6 Harold Road, Upper Norwood, S.E. 19. (Feb., 1904.)

- BALMAIN, Miss MORA; Alford House, Castle Cary, Somerset. (June, 1930.)
- BAMFORD, WILLIAM; Bridgecroft, Kent Road, Harrogate. (March, 1904.)
- BANNERMAN, Mrs. DAVID; 132 Oakwood Court, Kensington, W. 14. (April, 1928.)
- BARCLAY, EVELYN W.; Whitwell Hall, Reepham, Norwich. (Aug., 1928.)
- BARKER, Major C. H.; Villa Fressinet, Grasse, A.M., France. (Feb., 1924.)
- BARKER, Capt. N. L., O.B.E.; Chevin House, Otley, Yorkshire. (Dec., 1926.)
- BARLOW, Mrs.; 45 Bath Road, Swindon. (Sept., 1926.)
- BARLOW-MASSICKS, Miss F. M.; Kelham House, Newark, Notts. (1913.)
- BARLOW, Mrs. WINIFRED; Furnace Place, Haslemere, Surrey. (Sept., 1930.)
- BARNARD, T., M.C., F.Z.S.; Milner Road, Rondebosch, Cape Town, South Africa. (Sept., 1919.)
- BARNES, P. D., M.D.; Box 353, Loomis, California, U.S.A. (April, 1929.)
- BARNETT, WALTER E.; Red Hall, Croxley Green, Hertfordshire. (Feb., 1927.)
- BARR-SMITH, Mrs.; Birkegate, Glen Osmond, South Australia. (Sept., 1926.)
- BARRY, DAVID, jun.; 1001 So La Brea Avenue, Los Angeles, California, U.S.A. (Jan., 1928.)
- BARRYMORE, JOHN; P.O., Box 684, Beverley Hills, California, U.S.A. (Aug., 1929.)
- BAXENDALE, HUGO; Junior Carlton Club, Pall Mall, S.W. 1. (Sept., 1930.)
- BEARBY, W. R.; 34 Church Street, West Hartlepool. (Aug., 1923.)
- BEDFORD, Her Grace the Duchess of, F.Z.S.; Woburn Abbey, Woburn, Beds, and 15 Belgrave Square, S.W. 1. (Feb., 1903.) (*Vice-President.*)
- BEEVER, G.; Brooklyn, Kirkheaton, Huddersfield. (June, 1923.)
- BELL, W. D.; Glenrock, Brough, East Yorkshire. (May, 1926.)
- BENCHLEY, Mrs. BELLE; Zoological Society of San Diego, San Diego, California, U.S.A. (Feb., 1929.) (*Executive Secretary.*)
- BENDALL, RUFERT P.; Poplar Hall, Brookland, Kent. (Feb., 1929.)
- BENJAMIN, Mrs.; Yarr Barton, West Chinnock, Crewkerne. (Dec., 1929.)
- BERESFORD WEBB, G. M.; Norbryght, South Godstone, Surrey. (May, 1906.)
- BEST, CYRIL; Glengarron, Wood Lane, Hucknall, Notts. (Aug., 1921.)
- BLAAUW, F. E., F.M.Z.S., F.M.B.O.U.; Gooilust, 's Graveland, Hilversum, Holland. (Nov., 1901.)
- BLACK, Mrs. A. R., R.F.D. 1; Box 250, Gardena, California, U.S.A. (April, 1930.)
- BLACKBURN, FRANK; 40 Mount Joy Road, Huddersfield. (April, 1929.)
- BLACKBURN, H. R.; The Oaks, Wivelsfield, Sussex. (1913.)
- BLAND, Mrs. G. L.; The Little House, Wellesbourne, Warwick. (July, 1929.)
- BLISSETT, Miss NELLIE; Dover Cottage, Dover Street, Ryde, Isle of Wight. (March, 1928.)
- BOGER, Mrs. F.; Brookfield, Ryde, Isle of Wight. (Jan., 1930.)
- BOOSEY, E. J.; Brambletye, Keston, Kent. (Feb., 1921.)
- BORMAN, Major F. W., M.B.O.U.; British Legation, Durazzo, Albania. (Oct., 1925.)
- BOTT, WILLIAM; Gwent, Walton-by-Clevedon, Somerset. (Dec., 1928.)

- BOURNE, Hon. Mrs. ALGERNON; 75 Gloucester Place, Portman Square, W. 1. (Feb., 1911.)
- BOUSFIELD, Miss; Hazelgrove, New Milton, Hants. (Jan., 1908.)
- BOYD, H. TOD; 69 Castlenau, S.W. 13. (April, 1927.)
- BOYLE, JOHN; The Farm House, Shirburn, Watlington, Oxon. (Jan., 1929.)
- BRADSHAW, J., M.Sc., A.I.C., F.C.S.; Rubebank, Sulby Grove, Bare, Morecambe. (Feb., 1925.)
- BRADSHAW, GEORGE; Ingram Road, Wahroonga, Sydney, Australia. (May, 1927.)
- BRAND, The Hon. Mrs.; Glynde Combe, near Lewes. (June, 1928.)
- BRIGHT, HERBERT; Woolton Tower, Woolton, near Liverpool. (June, 1914.)
- BROCK, A. E.; St. Just, Exeter. (Dec., 1929.)
- BROOKS, Rev. O. E.; 36 Lincoln's Inn Fields, W.C. 2. (Jan., 1930.)
- BROOKSBANK, ALEC; Brambletye, Keston, Kent. (Jan., 1928.)
- BROWN, W. FERRIER; 43 Spencer Avenue, Earlsdon, Coventry. (May, 1924.)
- BROWNING, WILLIAM H.; 260 Fourth Avenue, New York City, U.S.A. (March, 1906.)
- BRUCE, Mrs. A. L.; Brooke Hall, Brooke, Norfolk. (Feb., 1927.)
- BRUNTON, J. W.; Inveresk Lodge, Musselburgh. (June, 1923.)
- BRYAN, Mrs. A. H.; P.O. Box 414, Balboa Heights, Canal Zone, U.S.A. (Jan., 1928.)
- BUCHANAN, A.; Viewbank, 33 Townhill Road, Dunfermline. (Dec., 1928.)
- BUCKLAND, Major A. W. T., M.C.; Longfield, Lyminge, Kent. (March, 1930.)
- BUCKLE, FRANK; 84 Pitt Street, Sydney, N.S.W., Australia. (Jan., 1929.)
- BUDD, Major Charles; St. Davids, Lisvane, Glam. (April, 1930.)
- BUTLER, ARTHUR LARCHIN, M.Aust.O.U.; Lower Sandy Bay, Hobart, Tasmania. (July, 1905.)
- CAIRNS, Hon. D. H.; Carnach, Nairn. (Nov., 1930.)
- CAPER, F.; Lewin's Mead, Bristol. (Oct., 1907.)
- CARPENTER, H. H.; 540 South Hill Avenue, Pasadena, California, U.S.A. (Sept., 1927.)
- CARR-WALKER, HERBERT; Almsford House, Fulwith Lane, Harrogate. (June, 1917.)
- CARLISLE, Melville; P.O. Laboratory, Pretoria, South Africa. (March, 1930.)
- CARTER, DOUGLAS H.; c/o Messrs. Carter & Co., Ltd., 10 and 11 High Street, Bridgetown, Barbados. (June, 1929.)
- CASE, Mrs. ALICE M.; Bachelors, Ockham, Ripley, Surrey. (May, 1918.)
- CAYLEY, Mrs.; Carham Hall, Cornhill-on-Tweed, Northumberland. (Jan., 1928.)
- CHANNER, Mrs.; Webbery, Nr. Bideford, N. Devon.
- CHAPLIN, Lady DRUMMOND, G.B.E.; Noord Hoek, Cape Province. (Nov., 1928.)
- CHAPLIN, E. W.; The Hearne, Great Amwell, Ware, Herts. (Sept., 1903.)
- CHAPMAN, G. B., F.Z.S.; 17 Tottenham Court Road, London, W. (Nov., 1922.)

- CHAPMAN, Miss, F.Z.S.; 92 High Street, Birmingham. (April, 1927.)
- CHAWNER, Miss, F.Z.S.; Tarrystone House, Cookham, Berks. (July, 1899.)
- CHEERS, ALEC; 6 Kingston Lane, Teddington, Middlesex. (April, 1928.)
- CHICHESTER, Mrs.; The Deer Park Cottage, Glenarm, Co. Antrim, Ireland. (April, 1930.)
- CHILD, F. R.; Braemar, Down's Road, Luton, Beds. (March, 1920.)
- CHRISTIE, Mrs. G.; Kellas, By Elgin, Morayshire. (Jan., 1913.)
- CHRISTIE-MILLER, Miss L.; Clarendon Park, Salisbury. (May, 1926.)
- CLARK, Mrs. ALFRED; Waitren House, Iver Heath, Bucks. (Sept., 1925.)
- CLAYTON, ROBERT A.; The White House, Adwick-le-Street, near Doncaster. (July, 1925.)
- CLEMO, J.; 18 Claremont Road, Redruth, Cornwall. (Oct., 1927.)
- COATES, Sir EDWARD CLIVE, Bart.; 14 Sussex Square, W. 2. (June, 1929.)
- COCKELL, N. F.; Durhungah, Coach Road, Newton Abbot, S. Devon. (1922.)
- COHN, L.; S. Californian Bird and Pet Exchange, 11715 Avalon Building, Los Angeles, California, U.S.A. (Dec., 1929.)
- COLES, CLIFFORD; 16 Bancroft Avenue, Roseville, N.S.W., Australia. (July, 1929.)
- COLHOUN, Major J., M.C.; St. Elmo, Shantallow, Londonderry, Ireland. (March, 1929.)
- COLLIN, HARRY A.; Tynrodyn, Bangor, North Wales. (May, 1928.)
- COLLINS, E. HOWARD, F.Z.S.; 45 Parliament Street, Westminster, S.W. 1. (Aug., 1928.)
- COLLINSPLATT, Miss JESSIE N.; Brimptsmead, Princetown, Devon. (July, 1927.)
- COLVILLE, Miss Kathleen; Pilgrim Cottage, Hawley, Henley-on-Thames, Glos. (Nov. 1928.)
- COMBE, Miss E. D.; Earnshill, Curry Rivel, near Taunton, Somerset. (Feb., 1927.)
- COOK, E. H.; 33 Nelgarde Road, Catford, S.E. 6. (April, 1929.)
- COOK, S. M.; Eastridge, Blackhill, Swansea. (Aug., 1928.)
- COOPER, Mrs. H. VICTOR; Banksia, 2 Vaughan Avenue, Hamstel Road, Southchurch, Southend-on-Sea. (May, 1926.)
- COOPER, JAMES; Killerby Hall, Scarborough. (Orig. Mem.)
- COOPER, Mrs. NORAH; Glencairn, Talbot Avenue, Bournemouth. (Jan., 1928.)
- CORSAN, G. H.; The Kellogg Estate, Box 75, Augusta, Mich., U.S.A. (Jan., 1928.)
- CORY, REGINALD R., F.Z.S.; Duffryn, near Cardiff. (August, 1905.)
- COTTERELL, RICHARD; Garnons, Hereford. (April, 1928.)
- COTTRILL, Mrs. H. L.; Seven Barrows, Lambourn, Berks. (April, 1924.)
- COWLEY, H.; The Manor House, Bubbenhall, Kenilworth. (Jan., 1926.)
- CREMER, C. H.; Am Dobben 130, Bremen, Germany. (March, 1926.)
- CROFTS, ROBERT T.; 18 Wheelock Street, Middlewich, Cheshire. (April, 1929.)
- CUBITT, H. G. F.; 12 Mountague Place, Poplar, E. 14. (Jan., 1931.)
- CURA, L., & SONS; Bath Court, Warner Street, Rosebery Avenue, E.C. 1. (Sept., 1928.)
- CURRIE, J.; 54 Netherby Road, Edinburgh. (Aug., 1915.)

- CURZON OF KEDLESTON, Marchioness, G.B.E.; 1 Carlton House Terrace, S.W. 1. (March, 1927.)
- CUSHNY, CHARLES; Bath Club, 34 Dover Street, Piccadilly, W. 1. (Dec., 1926.)
- CZARNIKOW, HORACE, F.Z.S.; Farnborough Hall, Banbury, Oxon. (March, 1924.)
- DANBY, NORTON H.; 4 Carlton Road, Ealing, W. (May, 1927.)
- DARLING, P. STORMOUTH; Blackwood, Fulmer, Bucks. (June, 1928.)
- DAVIS, GODFREY, L.C.S., F.Z.S.; 4 Robin Grove, Westhill, Highgate, N. 6. (Aug., 1927.)
- DAYREML-REED, Miss E.; Estherwell, West Bay, Bridport. (Feb., 1928.)
- DEBONO, P. P., M.D., F.R.C.S.(Eng.); 58 Sdu Reale, Sliema, Malta. (June, 1930.)
- DECOUX, A.; Géry-près Aix, Hte. Vienne, France. (April, 1917.)
- DELACOUR, JEAN, F.Z.S.; Clères, Seine Inf., France. (April, 1916.)
- DELL, CHARLES; Ferndale, Moss Lane, Pinner, Middlesex. (July, 1900.)
- DENNIS, Mrs. CYRIL; Oakley Hall, Market Drayton, Salop. (June, 1920.)
- DENNIS, Mrs. H. E.; Holme Manor, Pulborough, Sussex. (March, 1903.)
- DENNY, Mrs. HENRY, C.B.E., Staplefield Place, Staplefield, Sussex. (May, 1924.)
- DEVINE, F.; Dunamase, Cross Avenue, Booterstown, Co. Dublin. (April, 1929.)
- DICKEY, DONALD R.; California Institute of Technology, Pasadena, California, U.S.A. (April, 1929.)
- DICKINSON, Mrs. G. W.; Lernbangweg, Paal 4, Java, Bandoeng, Dutch East Indies. (Jan., 1918.)
- DICKSON, Miss V. C.; Lea Croft, Crawley, Sussex. (Oct., 1927.)
- DIEMONT, D. E. H.; Rynvliet, Oudenrym, Holland. (June, 1927.)
- DINGLEY, V. G.; The Poplars, 335 Upper Richmond Road, Putney, S.W. 15. (May, 1930.)
- DIRECTOR, THE; Zoological Museum, Tring, Herts. (1912.)
- DONOVAN, H. B.; 184 Adelaide Street West, Toronto, Ontario, Canada. (May, 1925.)
- DOOLY, THOMAS L. S.; Whimbrel, Kirklake Road, Formby, near Liverpool. (Jan., 1924.)
- DORMAN, CLAUDE P.; 1673 Chester Avenue, Bakersfield, California, U.S.A. (April, 1928.)
- DRAKE, Mrs. E. T. TYRWHITT; Shardeloes, Amersham, Bucks. (Aug., 1929.)
- DRAKE, Mrs. F. W.; Carrick Cottage, Mylor, Falmouth, Cornwall. (Dec., 1926.)
- DRAKE, G. TYRWHITT, F.Z.S.; Sandling Farm, Maidstone. (June, 1918.)
- DRASDO, FRANK G.; 728 Beverley High Road, Hull. (Jan., 1930.)
- DREWITT, FREDERIC DAWTRY, 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.)

## List of Members

- 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.)
- DUYZEND, W. C.; 123 Goudsche Singel, Rotterdam, Holland. (March, 1927.)
- EDWARDS, Mrs. A. E.; Three Elms, Kippington, near Sevenoaks, Kent. (Jan., 1925.)
- EIGHMEY, M. G.; Costa Mesa Bird and Game Farm, Costa Mesa, California, U.S.A. (April, 1930.)
- ELLIOTT, F. S.; Westfield, 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.)
- 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.)
- EVANS, VICTOR J.; Victor Building, 9th Street Northwest, Washington, D.C., U.S.A. (Oct., 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.)
- FETHERSTONHAUGH, Mrs.; The Royal Lodge, Windsor Great Park. (April, 1930.)
- FIELD, Captain H. E. B.; Olinda, Bridge Road, Worthing, Sussex. (Nov., 1930.)
- FILMER, H. R.; Oakfield, Hurst Road, Hassocks, Sussex. (*Orig. Mem.*)
- FILMER, Hon. Mrs. WILSON, F.Z.S.; Leeds Castle, Maidstone, Kent. (Nov., 1920.)
- FINN, FRANK, B.A., F.Z.S.; c/o Grindley & Co., 54 Parliament Street, S.W. 1. (*Hon. Mem.*)
- FOLLETT, Miss R.; 2 Alston Terrace, Exmouth, S. Devon. (Oct., 1926.)
- 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.)
- GABCKE, 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.)
- GILCHRIST, Mrs.; Leny Cottage, Burwood, Park Road, Walton-on-Thames. (Jan., 1930.)
- GLADDING, WALTER, F.R.H.S., N.R.S.; Old Mill Gardens, Wannock, Polegate, Sussex. (Dec., 1926.)
- GLENISTER, A. G.; c/o Messrs. Osborne & Chappel, Ipoh, Perak, F.M.S. (June, 1928.)
- GODDARD, H. E.; Birchcroft, Fetcham, near Leatherhead. (Feb., 1899.)
- GODDARD, Mrs.; The Lawn, Swindon. (Feb., 1923.)
- GOODBODY, Mrs.; 6 Chandos Street, Cavendish Square, W. 1. (July, 1929.)
- GOODHAND, H.; Ashton, Dudley Street, Grimsby. (June, 1929.)
- GOODWIN, T. J.; 185 Old Kent Road, London, S.E. (Jan., 1920.)
- 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.; 1 Redfield Lane, Earls Court Road, S.W. 5. (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.; Woodbank, Harden, Bingley, 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 xvie Paris. (Dec., 1908.)
- GURNEY, DANIEL; The Grange, North Runceton, King's Lynn. (July, 1927.)
- GURNEY, Miss DIANA; North Runceton Hall, King's Lynn. (July, 1927.)
- GURNEY, G. H., F.Z.S.; Keswick Hall, Norwich.
- HALL, A. John; Yew Tree House, Ducklington, Witney, Oxon. (Feb., 1926.)
- 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.)
- HAMILTON, Mrs.; Villa Alexandra, Chernex sur Montreux, Switzerland.
- 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, ALGERSON 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.)
- HARTLEY, Mrs.; Lynchfield, Bishops Lydeard, Somerset. (April, 1897.)
- 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.)
- HEBB, 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.)
- HEWITT, T. W. G.; The Old Hall, Weelsby, Grimsby. (April, 1909.)
- HEWLINS, Miss MARY R.; The Howe, Saint Ives, Huntingdonshire. (Jan., 1927.)
- HEYDON, C.; 5 Corvedale Road, Craven Arms, Shropshire. (March, 1927.)
- HINE, JAMES S.; Ohio State Museum, Ohio State University, Columbus, Ohio, U.S.A. (Jan., 1930.)
- HIRST, ALBERT; 10 Talbot Avenue, Egerton, Huddesfield. (July, 1923.)
- HIRST, ARNOLD; P.O., Box 262 DD, Sydney, N.S.W., Australia. (April, 1929.)
- HIRST, ROBERT S.; Swincliffe House, Gomersel, near Leeds. (April, 1926.)
- 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.)
- HORSBRUGH, C. B.; Blessington House, Hillsborough, Co. Down.
- HORSFORD, D. M.; Bosvathick Penryn, Cornwall. (Aug., 1922.)
- HOUSDEN, JAMES B.; Brooklyn, 31 Cator Road, Sydenham, S.E. 26. (Orig. Mem.)
- HUMPHREYS, WALTER; Whitman House, Shottery, Stratford-on-Avon. (May, 1929.)
- HUMPHRIES, H. C., F.Z.S.; 29 Pearfield Road, Forest Hill, S.E. 23. (July, 1927.)
- HUNTING, J. CARLTON; Gaybird Pheasantry, Great Missenden, Bucks. (June, 1925.)
- HUTCHINSON, Miss ALICE; address unknown. (Aug., 1907.)
- HUTCHINGS, Miss MIRIAM; Arretton, Layters Way, Gerrards Cross, Bucks.

- IMAI, SETSUJI; 10 Hatagaya, Yoyohata, Toyotama-Gun, Tokyo-Fu, Japan. (Jan., 1928.)
- IRVINE, W. J.; 36 Ann Street, Belfast. (June, 1926.)
- IRVINE, MRS. CHRISTINE; Blakeway, Allport Road, Bromborough, Cheshire. (March, 1930.)
- ISENBERG, A. H.; 286 Atherton Road, Menlo Park, California, U.S.A. (Aug., 1926.)
- ISENBERG, R. A.; Los Altos, California, U.S.A. (April, 1930.)
- JABOUILLE, M. P.; Clères, Seine Inf., France. (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.)
- JOEL, S. B.; Maiden Erleigh, Reading. (Aug., 1927.)
- JOHNSTON, ROBERT PERCY, Longthwaite Road, Wigton, Cumberland. (March, 1925.)
- JOPSON, D. F.; Goff Nook, Barrowford, Nelson. (July, 1927.)
- KEATOR, BEVERLEY, R.F.D.; 12 Westport, Conn., U.S.A. (June, 1924.)
- KELHAM, R. LANGDALE; Bourne Lodge, 7 Genoa Avenue, Putney, S.W.15. (Jan., 1930.)
- KEMP, Robert; Holne Cott, Stafford Place, Weston-super-Mare. (March, 1926.)
- KERR, Mrs. ANDREW; Melbourne Hall, near Derby. (Jan., 1930.)
- KERR, J. ERNEST; Harviestoun, Dollar, Scotland. (March, 1927.)
- KERSHAW, Miss MARY E.; 7 Westcliffe Road, Birkdale, Southport. (June, 1924.)
- KEWLEY, Mrs. M. A.; Old Court House, Whitchurch, Aylesbury, Bucks. (Sept., 1910.)
- 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.; 32 Tavistock Square, W.C.1. (Aug., 1916.) Hon. Mem. (*Hon. Secretary and Treasurer.*)
- KÖHLER, MARTIN; Crimmitschau, I/SA., Germany. (Jan., 1930.)
- KRAASEN, WILLIAM; P.O., Box 92, Cupertino, California, U.S.A. (Oct., 1930.)
- KUNTZ, P.; 289 Edmonton Street, Winnipeg, Manitoba, Canada. (May, 1930.)
- LIDLAY, J. C.; Lindores, Fife, Scotland. (April, 1929.)
- LAKE, FRANK; West Park Road, Cleadon, near Sunderland. (Jan., 1927.)
- 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.)<sup>o</sup>
- LEACH, C. F. ; Vale Lodge, Leatherhead, Surrey. (June, 1914.)
- LECALLIER, Madame, F.Z.S. ; Vilette, St. Pierre-lès-Elbeuf, France. (April, 1918.)
- LEGENBRE, M. ; 25 Rue La Condamine, 17E, Paris. (June, 1928.)
- LEMP, EDWIN A. ; Cragnold, Kirkwood, Missouri, U.S.A. (March, 1929.)
- LEVY, GEORGE ; 14 Templewood Avenue, Hampstead, N.W. 3. (April, 1930.)
- 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, FRANK E. ; Box 58, Avalon, California, U.S.A. (June, 1930.)
- LEWIS, GEORGE ; Morning Side, Stockton Lane, Rural, York. (March, 1927.)
- LEWIS, JAMES E. ; 1570 E. California Street, Pasadena, California, U.S.A.
- LEWIS, J. SPEDAN, F.Z.S. ; 54 Orchard Court, Portman Square, W. 1. (Sept., 1924.)
- LIBRARY INTERNATIONAL INSTITUT D'AGRICULTURE, Villa Umberto, 1. Rome 10.
- LIENAU, C. H. A. ; Newbury, 23 Victoria Avenue, Unley Park, South Australia. (Oct., 1917.)
- 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.)
- LITLEDALE, Mrs. ; Ravenhurst, Pittville, Cheltenham. (April, 1926.)
- LOCKEY, R. ; Creighton House, Morpeth. (July, 1927.)
- LOCKYER, ALFRED ; Tredenham, St. Blazey, Cornwall. (Dec., 1905.)
- LODGE, B. HOWITT, F.Z.S. ; 175 Alexandra Mansions, Judd Street, W.C. 1. (July, 1928.)
- LODGE, GEORGE E., F.Z.S. ; Hawkhouse, Park Road, Camberley, Surrey. (May, 1923.)
- LOLY, VICTOR G. ; Box 127, Anaheim, California, U.S.A. (June, 1928.)
- 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 Comission 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.
- LUDWIG, Herr OTTO ; Merseburgerstrasse 20, Halle a.d. Saale, Germany. (Jan., 1925.)
- LYON, Capt. the Hon. MICHAEL ; Glamis Castle, Glamis, Forfarshire. (May, 1927.)
- MCCORMICK-GOODHART, Commander LEANDER, R.N.V.R. Retd., O.B.E., F.R.G.S. ; Langley Park, Hyattsville, Maryland, U.S.A.
- MCCORQUODALE, Mrs. ; Cound Hall, Shrewsbury. (Jan., 1920.)

- McCULLAGH, CRAWFORD; Lismara, White Abby, Northern Ireland. (June, 1930.)
- McDONALD, Miss B.; The Cottage, Hollington Park, St. Leonard's-on-Sea. (Jan., 1922.)
- McGREDY, SAMUEL; Ashton, Portadown, Northern Ireland. (June, 1928.)
- MACRAY, K. STEWART; The Manor House, Esher, Surrey.
- MACKIE, PHILIP C.; The Brambles, Creskald Lane, Bramhope, near Leeds. (Jan., 1926.)
- MACKLIN, C. H., M.R.C.S., L.R.C.P.; 23 Church Street, Ampthill, Beds. (May, 1923.)
- MACLAREN, WILLIAM; 19 Ruthven Street, Auchterarder, Perthshire, Scotland. (May, 1930.)
- MACLAY, Hon. J. P.; Duchal, Kilmacollm, Renfrewshire. (Dec., 1929.)
- 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.)
- 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.)
- 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.; Bank's Lane, Heysham Harbour, 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.; Ebbberley 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.)
- MILES, R. A.; 34 Great Queen Street, W.C. 2. (April, 1930.)
- MILLER, S. P.; Northend, Gloucester Road, Teddington.

- MOODY, A. F.; Lilford, Barnwell, Peterborough. (July, 1926.)<sup>o</sup>
- MOORE, H.; Chapel Road, Tadworth, Surrey. (July, 1928.)
- MOORE, ROBERT T.; 1420 East Mountain Street, Pasadena, California, U.S.A.  
Summer residence till 10th Sept., Guilford, Maine, 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.)
- MORSE, Dr. CARLTON BRETT, U.S. Navy; U.S. Naval Hospital, Washington, D.C., U.S.A. (June, 1930.)
- MOSS, Mrs. W. E.; The Manor House, Sonning-on-Thames, Berks. (March, 1928.)
- MOTTERSHEAD, GEORGE S.; 152 Mill Street, Crewe. (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.)
- MURRAY, Lieut.-Col. C. HOPE; Morishill, Beith, Ayrshire. (Feb., 1930.)
- MUSEUM OF COMPARATIVE ZOOLOGY; Cambridge, Mass., U.S.A.
- NASH, Dr. IEA E.; 1707 Medical Art's Building, Dallas, Texas, U.S.A. (June, 1928.)
- NELSON, RICHARD, 735 Holderness Road, Hull. (April, 1925.)
- NEVILL, Capt. T. N. C., F.Z.S.; 48 Sloane Square, S.W. 1. (July, 1917.)
- NEWILL, Dr. D. S.; Melcroft, Penna, Pennsylvania, U.S.A. (Oct., 1930.)
- NEWMAN, T. H., F.Z.S., M.B.O.U.; Verulam, Forty Lane, Wembley Park, Middlesex. (May, 1900.)
- NEWMARCH, C. T., F.Z.S.; Gamage's Ltd., Holborn, W.C. (Aug., 1915.)
- NEW YORK ZOOLOGICAL SOCIETY, 185th Street and Southern Boulevard, New York, U.S.A.
- 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.
- NORCROSS, HERBERT; Normanhurst, Mount Road, Middleton, Lancs. (March, 1930.)
- NORTH, W. N. D.; Meadow Court, Stoughton Drive, Leicester. (Dec. 1924.)
- OSBERG, HARRY C.; 2805 18th Street, N.W. Washington, D.C., U.S.A. (Oct., 1903.)
- OGILVIE, Mrs. BRENDA; Bonaly Tower, Colinton, Midlothian. (May, 1927.)
- OKADA, Mr. RIHEI; 194 Itami-machi, Hiogo-ken, Japan. (March, 1928.)
- 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, WINDSOB D. ; The Grange, Woolpit, Suffolk. (March, 1930.)
- PARKHOUSE, Mrs. Cicely D. ; Windyridge, Littleham, Exmouth. (Nov., 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.)
- 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, Rournemouth. (Dec., 1903.)
- PEPIN, J. E. ; 4044 South Broadway, Los Angeles, California, U.S.A. (March, 1930.)
- PEPPER, HERBERT ; Colliston, St. Helen's Down, Hastings, Sussex. (June, 1928.)
- PERRAU, Mrs. G. A. ; 16 Evelyn Court, Lansdowne Terrace, Cheltenham. (Sept., 1916.)
- PETERSON, Mrs. ; Applehill, Kelling, near Holt, Norfolk. (July, 1929.)
- PHILLIPS, Dr. JOHN C. ; Wenham, Mass., U.S.A. (March, 1910.)
- PHILLIPS, Major F. LOST ; Down Grange, Basingstoke, Hants. (Feb., 1928.)
- 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.)
- PILKINGTON, Mrs. ; Dean Wood, Newbury. (April, 1927.)
- PLATH, KARL ; 2347 Giddings Street, Chicago, U.S.A. (July, 1924.)
- POLTIMORE, Lady ; Court Hall, North Molten. (Jan., 1926.)
- PORTER, Mrs. G. M. ; Steephill, Farnham, Surrey. (April, 1928.)
- PORTER, SYDNEY, F.Z.S. ; Selwyn House, Old Normanton, 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.)
- POWELL, Rev. A. M., O.B.E. ; Ampleforth Preparatory School, Gilling East, York. (Aug., 1930.)
- PRINCETON UNIVERSITY LIBRARY ; U.S.A.
- PROCTER, Mrs. ; Cullecoats, The Ridgeway, Asten Wood, Gerrard's Cross. (1926.)

- PURVIS, Mrs. C. J. ; West Acres, Alnwick, Northumberland. (Oct., 1920.)
- PYCRIFT, 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.)
- REICHARD, M. ; 26 Sandrart Strasse, Nuernberg, Germany. (March, 1928.)
- REVENTLOW, AXEL ; Koebmand, Stationsvej 36, Odense, Denmark. (Jan., 1928.)
- RHEAM, G. W. ; Yewhurst, Freshfield, Liverpool. (March, 1928.)
- RICARDO, Mrs. ; Colebrooke House, Aldwick, near Bognor. (July, 1926.)
- RICHARDS, H. ; 11 Mount Pleasant, Redruth, Cornwall. (March, 1929.)
- RICHARDSON, C. S. ; 489 Lea Bridge Road, Leyton, E. 10. (April, 1928.)
- RIEVELEY, JOHN W. ; St. Oswald's Gate, Fulford, York. (June, 1929.)
- RIVERS, Major E. R. ; 29 Lansdowne Road, Holland Park, W. 11. (June, 1928.)
- ROBERTS, 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. F., 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.)
- ROSS, ROLAND CASE ; 1820 Bushnell Avenue, South Pasadena, California, U.S.A. (May, 1930.)
- ROTHSCHILD, JAMES DE ; 46 Park Street, W. 1. (March, 1923.)
- ROTHSCHILD, LIONEL DE ; 18 Kensington Palace Gardens. (Nov., 1913.)
- ROYAL ZOOLOGICAL SOCIETY OF IRELAND ; Phoenix Park, Dublin. (Oct., 1905.)
- RUDD, W. A. ; 189 Bishopsgate, E.C. 2. (Jan., 1927.)
- 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, CLAUDE ; The Foreign Office, Whitehall. (Jan., 1930.)
- RUSSELL, Mrs. ; Oaklands, Hook, Basingstoke. (Aug., 1926.)
- RYECROFT, Mrs. ; Stratton Rise, Cirencester, Glos. (Oct., 1927.)
- ST. QUINTIN, WILLIAM HERBERT, F.Z.S., M.B.O.U. ; Scampston Hall, Rillington, York. (Orig. Mem.)

## List of Members

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- SALKELD, WILLIAM; Ravenswood, Kirkoswald, R.S.O., Cumberland. (June, 1922.)
- SALTER, FRANK H.; 5 The Crescent, Scarborough. (April, 1930.)
- SANDBACH, Miss VIOLET, 48 Cadogan Square, S.W. 1. (Dec., 1926.)
- 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; Hamildean, Ipswich. (1912.)
- 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.
- SHENSTONE, Mrs.; Chantry House, Hurstpierpoint, Sussex. (April, 1925.)
- 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.)
- SINGLETON, JOHN H.; 29 Windlesham Gardens, Brighton. (May, 1928.)
- SISSONS, H. P.; 8 Potter Street, Worksop, Notts. (April, 1927.)
- SLADE, G. J.; Shenley, Wilton Crescent, Southampton. (Feb., 1915.)
- SLEIGH, A. H.; Denmark House, Holbrook, Ipswich. (Jan., 1928.)
- SMETZ-MONDEZ, Dr. J. G.; La Hétraic, Genval, Belgium. (Aug., 1924.)
- SMITH, A. St. ALBAN, F.Z.S.; Seletar, Singapore, F.M.S. (Feb., 1929.)
- SMITH, Mrs. R. M.; 19 Hill Street, Mayfair, W. 1. (Aug., 1927.)
- SMITH, H. B.; 3 Claremont Road, Redruth, Cornwall. (Oct., 1927.)
- SMITH, PARIS; 5 Forest Rise, Whipps Cross, E. 17.
- 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.)
- SNAPE, Major A. E., O.B.E.; Malvern, Lower Walton, Warrington. (March, 1918.)
- SNELL, Mrs. NORRIS; Redcote, Paget Road, Ipswich. (Feb., 1928.)
- SOUTHOPF, 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, Stonegate, Leicester. (April, 1923.)
- STANDEVEN, J.; Heath Bank, Halifax. (Sept., 1930.)
- STARK, J.; Woods Cottage, Haddington, Scotland. (Jan., 1924.)
- STENT, STIRLING; Beechlands, Bedhampton, Havant, Hants. (March, 1924.)
- STERRETT, H. R.; Roseway, Hooper Avenue, Pennsylvania, Exeter, S. Devon. (Feb., 1926.)
- STOKES, Capt. H. S., F.Z.S., M.B.O.U., M.C.; Longdon, Stafford. (Oct., 1922.)
- STONE, Miss IRENE; Central Lodge, 55 Central Hill, S.E. 19. (July, 1929.)
- STOREY, MRS. A.; Hawling Manor, Andoverford, Glos. (Nov., 1912.)
- STRINGFELLOW, B.; 1160 N. Garey Avenue, Pomona, California, U.S.A. (Aug., 1927.)
- STROMBI, Miss DORA A.; 26 High Street, Brechin, Angus. (April, 1930.)
- STRUBEN, Mrs. F.; Spitchwick Manor, Poundsgate, Newton Abbot, Devon. (Jan., 1923.)
- SUDELEY, THE LORD; 8 Rutland Court, S.W. 7. (Dec., 1927.)
- SUGGITT, ROBERT; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903.,
- SULLIVAN, F. A.; San Antonio Zoological Society, 402 Steves Avenue, San Antonio, Texas, U.S.A. (Dec., 1929.)
- SUMMERSKILL, C. C.; 19 Alma Road, Winton, Bournemouth. (March, 1925.)
- SUTCLIFFE, ALBERT, F.Z.S.; Beechfield, Grimsby. (Feb., 1906.)
- SWIFT, REV. H.; Heythrop College, Chipping Norton, Oxon. (Jan. 1930.)
- SWAN, Miss MARGARET; 27 Cavendish Avenue, St. James's Park, Harrogate. (June, 1930.)
- SYKES, JOHN; Whitehouse Cottage, Inveresk, 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, Peasmarsch, 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, Whitechurch, Salop. (June, 1913.)
- 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, Camba. (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 Aviarics, Loshville, Etterby Scar, Carlisle. (Aug., 1930.)
- TODD, HORATIO; 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.*)
- TRANSSVAAL 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.; Tremadoc, Keyberry Road, Newton Abbott. (Jan., 1925.)
- UPPINGHAM SCHOOL; the School Library, The Old School House, Uppingham. (Nov., 1920.)
- 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.)
- VIHERELLER, 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.)
- WARNEFORD, WALTER W. H., O.B.E.; The Wyndhams, Torbay Road, Torquay. (Oct., 1926.)
- WARNEFORD, Mrs.; The Wyndhams, Torbay Road, Torquay. (Oct., 1926.)
- WATSON, A. D.; c/o Feather Hill Ranch, Santa Barbara, California, U.S.A. (June, 1930.)
- 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.)
- 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 578, San Pedro, California, U.S.A. (June, 1930.)
- WILDEBOER, Dr. H. G.; Burnbrae, Holderness Road, Hull. (1924.)
- WILKINS, A.; Rendcombe, Chesham, Bucks. (April, 1930.)
- 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.; 2027 Hyde Street, San Francisco, 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; Little Tew Lodge, Enstone, Oxon.
- 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.)
- 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; 31th 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.  
 BOBBRIDGE, 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.  
 BUTLER, A. R.; Hopetoun Road, Toorak, S.E. 2, Melbourne.  
 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, Rynie 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.  
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.  
KELL, F. P. ; 32 Grove Street, Unley Park, 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.  
MISCHIN, R. ; Zoological Gardens, Adelaide, South Australia.  
WALTER, C. Y. ; Kensington Road, Rose Park, Adelaide, South Australia.
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## THE AVICULTURAL SOCIETY OF NEW ZEALAND

## LIST OF AFFILIATED MEMBERS

- ALLEN, GEORGE H. : 14 Bridgeman Street, St. Kilda, Dunedin, N.Z.  
 BEDFORD, E. : 96 Clomburn Road, Remuera, Auckland, N.Z.  
 BIRDLING, F. : Cornwall Park Kiosk, Epsom, Auckland, N.Z.  
 BRIDGE, A. : Corner Hill and Moore Streets, Paeroa, N.Z.  
 BULL, H. B. J. : 1 Erin Street, One Tree Hill, Auckland, N.Z.  
 CAMPBELL, MRS. J. P. : 15 Arney Road, Remuera, Auckland, N.Z.  
 CARTER, E. : c/o Napier Bricks, Ltd., Napier, N.Z.  
 CLAY, E. V. : c/o Turnbull & Jones, Wellesley Street, Auckland, N.Z.  
 COBBET, G. M. : c/o Messrs. J. G. Ward & Co., Box 183, Invergargill, N.Z.  
 CROWTHER, W. J. : Remuera Road, Auckland, N.Z.  
 FORSTER, R. : 401 Hastings Road, Hastings, H.B.  
 GRAVESON, T. : 14 Oakland Road, Mt. Eden, Auckland, N.Z.  
 GRIFFIN, L. T. : c/o Auckland War Memorial Museum, Auckland, N.Z.  
 HENLEY, A. E. : 66 Victoria Street, West, Auckland, N.Z.  
 HUTCHINSON, G. ROLAND (*Honorary Secretary and Treasurer*) : 5 Keith Avenue, Remuera, N.Z.  
 KENT, Miss T. R. : 88 Manchester Street, Christchurch, N.Z.  
 KINLEY, WM. : Alfred Street, Northcote, Auckland, N.Z.  
 KNOWLES, A. E. : 55 Hinemoa Road, Devonport, Auckland, N.Z.  
 LUND, G. : Galliope Road, Devonport, Auckland, N.Z.  
 MCKAY, D. : P.O., Box 13, Nelson, N.Z.  
 MATHEWS, W. H. : 4 Inverness Avenue, Epsom, Auckland, N.Z.  
 PINFOLD, MRS. C. H. : - Cf. Victoria and Princes Street, Hamilton, N.Z.  
 POTTER, S. D. : 53 Sunglen Road, off Dominion Road, Auckland, N.Z.  
 SEARLE, G. : 43 Virginia Avenue, Eden Terrace, Auckland, N.Z.  
 SPENCER, MRS. L. C. : 11 Dilworth Avenue, Remuera, Auckland, N.Z.  
 SPERRIN-JOHNSON, Professor J. C. : c/o Mr. G. R. Hutchinson, 5 Keith Avenue, Remuera, N.Z.  
 TATTERSFIELD, MRS. E. : "Puriri Puke," Allendale Road, Mt. Albert, Auckland, N.Z.  
 WALKER, REG. : Fairleigh Avenue, Mt. Albert, Auckland, N.Z.  
 YOUNG, ROBERT B. : Tahora Avenue, Remuera, Auckland, N.Z.
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## Rules of the Avicultural Society

*As amended, November, 1930*

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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 10s. 0d.; 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.

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## The Society's Medal

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### 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.

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The Medal is struck in bronze (but the Committee reserve the right to issue it in silver in very special cases) and measures  $2\frac{1}{2}$  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.

