GUIDE TO LOVEBIRDS AND PARROTLETS

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By

E. N. T. VANE

FIRST EDITION

CAGE BIRDS
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PREFACE

FOR some obscure reason, an introduction to a book appears to be a necessity in some form or other. I never had time to read these when I was a young man. I always knew why I wanted to read a book without being told, and was in too great a hurry to get on with the subject. To readers who have got this far, I will say now that you will miss little by not going further into this preface, and may well start right away on the first chapter of the matter that must be the reason why you have started to read at all.

All too often, the question has been put to me, "Why do you keep birds?" or, "From where do you inherit your passion for birds?", and I can assure the reader that I know no more than does he or she. One thing I do know; it is not a matter of genetics. No one in my family had, so far as could be ascertained, ever shown any such peculiar weakness, either for birds or other living creatures; yet for me, all such things have always been a fascinating and completely absorbing interest.

I learned to keep birds the hard way. There was no kindly and experienced mentor to advise me. My experience had to be my teacher, in spite of the fact that Ben Johnson tells us that, "He who was taught by himself had a fool for a master." I kept all the birds I could, and I read all the books I could afford.

Apart from all this, I developed a faculty much favoured in avicultural circles, of visiting all the experienced breeders I could and listening to as much as they cared to tell me; meanwhile reserving the right to my own opinion without comment.

This process is known as "picking the other fellow's brains." Most breeders are only too pleased to help in this direction really, and many are even flattered by your interest, however humble may be your start.

The time would now appear to be on hand, when I have to

do most of the talking, and I can only hope that my listeners have not got such a fool for a master as I had. There is, of course, another addage which says that a wise man profits by the mistakes of others, and I sincerely trust that some of the lessons my errors have taught me, may save others from similar mistakes.

Let it be clearly understood that progress is always being made. Certain facts will yet come to light that will revise some opinions or even correct some scientific error. There is still much to be learned about keeping birds in captivity, and it is never wise to become too fixed in one's ideas on management. It is never too late to learn.

So greatly have I trespassed on the greater experience of more experienced aviculturists in my younger days, that to acknowledge every instance fairly would in itself require a book on its own. May I ask all those, therefore, who may read in subsequent pages, obvious references to the lessons they taught me, to accept my thanks and grateful acknowledgment. Will they realise, too, that no specific mention of their kindness is made for fear of attributing the assistance to the wrong source.

Finally, to those embarking upon any branch of aviculture, may I offer one piece of advice. Do join your local society, and, even more important, join one of the larger specialist societies dealing with the subject of your interest. It is here that you will learn most, and meet friends with common interests. In aviculture these friends may well be peers of the Realm, wealthy merchants, little shopkeepers, or ordinary middle or working class folk, but, being aviculturists they are all, or almost all, first class friends only too willing to help.

E. N. T. VANE

Chapter 1

PAST, PRESENT AND FUTURE

THERE can be no doubt about the enormous increase in interest in aviculture in recent years. Particularly does this apply to the keeping of Lovebirds, and to a less extent, other small Parrot-like birds. A natural desire follows to augment one's knowledge of their natural history in order to create artificial conditions adequate to enable the birds to live happily, and prove that they are doing so by reproducing their kind in captivity.

The term "Lovebird" is applied properly only to the genus *Agapornis*, which is confined to the tropical area of Africa and Madagascar, although in fact one species slightly exceeds the southern tropic. Closer acquaintance with the birds will possibly convince one that the name is rather a misnomer as they can be very spiteful among themselves, and especially so to less strong unrelated species so that it is never safe to associate them in a mixed collection.

Originally the name was applied on account of their habit of sitting closely together in pairs, or at least couples, as birds of the same sex frequently sit side by side.

They are typical short-tailed Parrots, mainly green in colour with variations of red, yellow and blue. A feature of their colouring is the barring found on the tails, generally described as a sub-terminal band. Their length ranges from some five to six and a half inches. By habit they are gregarious, generally being encountered in small groups that disperse somewhat at breeding time, but at other times

assemble in small colonies to which, as a rule, there appears to be a male leader. Their food normally is composed of grass seeds, berries and other fruits and cereals that can be readily substituted in captivity.

They are indiscriminate hole-nesters, some species having specialised requirements, and usually lay a clutch of four to six white eggs in a nest which, unlike those of almost all of the other Parrots, is lined with material in some fashion. The hens are responsible for incubation duties, though the males spend a considerable time with them in the nest and assist with the rearing.

There are slightly different views with regard to the precise composition of the genus. Scientists refer to this as a " conflict of taxonomic opinion," but from the avicultural viewpoint the position is fairly straightforward. Nine species are recognised. Systematists divide these to some further extent into sub-species that are of little concern to breeders, but will not be entirely ignored when dealing with the species in more detail.

In three of these species (Nos. 1 to 3 below) the sexes are different. To a scientist this is known as " sexual dimorphism," and just to be contrary, these three species are the least ready to breed in captivity. One species is entirely unknown to aviculture; in fact it is but very little known at all (No. 4), as it has specialised feeding habits. The remaining five species are alike in the sexes and well nigh impossible to segregate in this respect, but once properly paired are all excellent breeders.

In listing these species, it will be noted that the scientific names are given first. This is done intentionally, as these names are really no more terrifying than ordinary ones, once their use becomes the custom. Furthermore the use of these names avoids any possibility of misunderstanding in any part of the world in any language. For this reason alone, certain

scientific phrases have been used with a simple explanation simply because as one's interest in these birds expands, such knowledge is useful.

1. *Agapornis cana.* The MADAGASCAR or GREY-HEADED LOVEBIRD. Confined to Madagascar.

2. *Agapornis pullaria.* The RED-FACED or WEST AFRICAN LOVEBIRD. Found in West and Central Africa over a wide range.

3. *Agapornis taranta.* The ABYSSINIAN or BLACK-WINGED LOVEBIRD. From Ethiopia in East Africa.

4. *Agapornis swinderniana.* SWINDERN'S LOVEBIRD or BLACK-COLLARED LOVEBIRD. This is also found as a sub-species *zenkeri* and known as ZENKER'S or BLACK-COLLARED LOVEBIRD. The former is found in the forests of Liberia and the latter in the east Cameroons and Belgian Congo.

5. *Agapornis roseicollis.* The PEACH-FACED (one time ROSY-FACED) LOVEBIRD from South-west Africa. This is the species that has a territory that just extends below the southern tropic.

6. *Agapornis fischeri.* FISCHER'S LOVEBIRD. Tanganyika (North-east).

7. *Agapornis personata.* MASKED LOVEBIRD. Tanganyika (North-west).

8. *Agapornis lilianae.* NYASA or LILIAN'S LOVEBIRD. North Rhodesia and Nyasaland.

9. *Agapornis nigrigenis.* BLACK-CHEEKED LOVEBIRD. Northern Rhodesia.

Both the Red-faced and the Madagascar Lovebirds have been recorded scientifically for some two hundred years.

Records of birds kept in captivity do not go back so far, but the Red-faced was most likely the first to be imported, and the Madagascar was not long in following suit. So abundant did the latter become that it was often procurable for as little as half-a-crown per pair at times.

Swindern's was discovered early in the nineteenth century and was portrayed in several early works such as " Selby's Parrots " in the Naturalist's Library of 1836. The Zenker's sub-species was not recognised until late in the same century. The Abyssinian was known in 1814, but was not imported into this country until almost one hundred years later.

. It is rather a coincidence that these four were the first to become known, yet, with the exception of the last named, which has never been imported, they are the species that are most reluctant to breed in captivity.

The Peach-faced was first discovered in 1793 but was then regarded as identical with the Red-faced. In 1817 it was definitely separated as a valid species, but to this early confusion may possibly be attributed the subsequent errors made in recording breeding successes. It was first imported in 1860 when specimens were on exhibit at the London Zoological Society's gardens.

This was the first species that could be regarded as really willing to reproduce its kind in captivity, given the slightest encouragement. Even more so inclined were the remaining four species of the " white eye-ring " races that were eventually to ensure the great popularity of Lovebirds as aviary subjects.

The Black-cheeked was first imported in 1908 a few years after its discovery in 1904. There was then an interval until the mid-twenties when the Masked, Nyasa and Fischer's came along in quick succession, and made rapid strides in establishing firmly their position as one of the most desirable and satisfactory aviary inmates.

About this time two factors developed that gave breeders

a great opportunity to establish strains of healthy and prolific birds, but unhappily the chance was allowed to slip by. A great boom in Budgerigars in varying colours was putting their price up to astronomical figures so that a demand for any small Parrot-like birds would have ensured a sound market.

Later the ban on the importation of any Parrot-like birds would have doubled or trebled the value of the stocks then available in the country, once the scare had been properly assessed. At first it was doubtless thought that this embargo was just a temporary measure, but it became one of those things that was so strictly and stubbornly enforced that it was almost farcical.

Stocks of healthy Lovebirds had become rather low when the second World War broke out, through sheer apathy on the part of breeders. The intervening years of austerity and complete absence of proper feeding matter practically wiped out the remaining slender resources, and the outlook for the future was bleak indeed.

In 1952, however, after being in force for some twenty years, the ban was suddenly lifted; so suddenly and unconditionally that there was no fit organisation to deal with the situation. No experienced importers had the necessary contacts abroad to procure good healthy supplies and an entirely new start had to be made.

Unfortunately, this was most inefficiently managed. Many inexperienced dealers thought they saw the opportunity of easy money and largely through ignorance brought over birds from the Continent under such conditions that the health of the live cargoes inevitably suffered drastically, and whole shipments sometimes arrived in a diseased state. These consignments were frequently little better than the "left overs" from Continental importations after the cream had been taken off.

Within a year the ban was once more applied under the Ministry of Agriculture and Fisheries in the interests of other livestock. Why the ban should be applied only to Parrot-like species when it was known that many other families of birds could just as easily carry the disease involved had never been explained. Naturally, it was a great disappointment, but the majority of bird lovers were in sympathy with the restriction solely on the grounds of humane treatment.

The present situation, however, does appear to be given more reasonable consideration than formerly, and under certain conditions import permits are occasionally granted. One condition of such permits is that none of the birds or their progeny will be disposed of for at least two years; the idea being, presumably, that this would give an opportunity of locating and remedying any outbreak easily.

It is an apparent, or possibly transparent, mystery how so many birds that never breed in captivity are still offered for sale in spite of the ban. It would appear that some dealers have good connections with the television magician who produces Doves from a silk scarf or even thin air, but in this case he is producing Parrot-like species.

Experienced breeders should be aware of, and beginners are warned of, the dangers of acquiring any stock that is not thoroughly reliable and preferably English-bred under proper conditions. Precautions regarding importing, acclimatising and quarantining will be enumerated in due course. Meanwhile, the full circle has been completed, and we are back in the position where it is essential either to establish definite healthy strains of Lovebirds or once more lose them as inmates of our aviaries. The opportunity must not be allowed to pass through lack of enthusiasm or concentration again.

Their great avicultural appeal is well deserved. They are very easily catered for, feeding presents no problem and can be reduced to a simple straightforward routine. In general

habits they are very clean and not too noisy, some species being very quiet in behaviour.

Once properly acclimatised they are hardy and long lived and not subject to any particular diseases when correctly managed. They can eventually live outdoors in our climate the whole year round without heat, although such management is not considered the most likely to obtain maximum results. Their requirements in accommodation are modest, their willingness to breed makes them very interesting and they can be relied upon to earn their keep on even a limited scale.

In the past there has been a considerable amount of indiscriminate hybridising, but if sound strains are to be maintained, it is imperative that this should be eliminated. Hybridising may have its interest to establish scientific facts, to prove or disprove theories, but beyond this it should be definitely discouraged. So much has it been practised that at one time it was almost impossible to obtain hundred per cent. pure bred Masked or Blackcheeks.

When the Blue Masked increased in America so prolifically under the influence of the wonderful Californian climate, many breeders innocently crossed them with Blackcheeks as their resemblance to each other is considerable, and in the blue form the variations of colour are easily confused when the whole of the yellow pigment in the bird's make-up is lacking. The impurity became noticeable, however, when the young were bred back to normal coloured birds to improve quality, but the damage had been done.

In the Pheasant world, a similar situation arose whereby Golden Pheasants were crossed with Lady Amherst's, two species where the hens are very alike, so that it became very difficult to obtain any pure bred specimens of either species. In Australia, too, Lovebirds were often cross-bred. At one time, so confused had the position become that birds were

frequently offered for sale as Masked Nyasas, Peach-faced Nyasas, etc., the name Nyasa having become in fact synonymous with the term Lovebird in that continent.

There is still ample scope for improving our stock and extending its numbers, apart from the fact that the Lovebird may be approaching the stage of evolution as a captivity bird when colour variations may add further zest to their culture, but never by hybridising to mix colour factors.

It is only through careful observation by aviculturists that some stages of behaviour and development of the Lovebird have been clarified. It should be accepted, therefore, that genuinely useful facts may be discovered to the benefit of our scientific knowledge, and the importance of closer exchange of findings be emphasized with this object.

Most assuredly the future of the Lovebird genus in this country depends on the establishment of virile strains. The birds are ready to co-operate so the responsibility really lies with their owners. If care is taken to ensure that only sound stock is used for breeding, caution and restraint exercised not to over-breed, and finally hybridisation is avoided, there is every reason to hope that such a happy result will be brought about.

Reviewing the present position of the species available today, the conclusion is reached that Swindern's are non-existent in captivity. Red-faced, having only been bred on one occasion by Mr. A. A. Prestwich after almost a lifetime of striving to do so, are not likely ever to become widely bred unless some entirely unsuspected fact comes to light. Madagascars and Abyssinian are not likely to maintain, let alone increase, their numbers unless further experiences discover some hitherto unrecognised incentive to stimulate the breeding instinct, a worthy goal for the more advanced Lovebird enthusiast.

There is no reason, however, why the remaining five

species should not be well and truly established with reasonable care and the use of common sense. Various methods of management are discussed later, and recommendations made based upon systems that have proved most successful in actual practice over many years, under conditions prevailing in this country. These, it is hoped, will help others to achieve the same object.

As a safeguard to the future, the founding of several studs of breeding strains on a large scale would be of considerable assistance, but such a project is not the " goldmine " that most amateur breeders imagine. When placed on a commercial basis, after allowing for all maintenance charges on stock, depreciation of equipment, writing down of breeding stock, accidental losses, labour and incidental expenses and overheads attaching to all business undertakings, quite apart from selling and advertising, it will be realised that it would never be possible to market live birds as a profitable proposition at anything like the figures one sees so hopefully advertised by amateurs wishing to dispose of birds surplus to their requirements.

Such bargains are nearly always dear at any price. On the whole, the future is probably more dependent on the serious breeder, although there is scope and room for all.

Chapter 2

ACCOMMODATION

IN his first eager enthusiasm the beginner, more often than not, procures his birds and then has to house them temporarily while proper quarters are prepared. It is better, of course, to ensure that all arrangements are completed prior to their arrival. The reasons in favour of the designs recommended will be more fully explained under the chapter on management. In the present section plans and layouts are given preliminary consideration.

In our climate, at least, best results are obtained from Lovebirds when kept in single breeding pairs per flight, however small each compartment may be. *Some* breeders in *some* parts of the world where climatic or other conditions are particularly favourable have met with considerable success with the "Colony System." Such quarters, therefore, will be considered, too.

Broadly speaking there are two methods of management: outdoors all the year round, or out for breeding in summer and indoors for wintering. Others, too, will wish to try their hand at cage breeding, where room is limited, and although this may not be a method to advise for the improvement of stamina, there is no reason why with present scientific dietetic progress it should be unconditionally condemned.

Lovebirds are whittlers. It is instinctive for them to strip the bark and leaves from trees and shred the material to a fibrous condition to line their nesting chamber. In captivity, therefore, they soon turn their attention to the timber frame

of their aviary, even when they are also given plenty of fresh twigs to work on. All timber work, therefore, should be wired internally, even the shelter, or, better still, more durable materials should be employed.

For some years now the advantages of metal frames and asbestos sheeting have been recommended. It is not difficult to have metal angle frames welded on your site by a mechanic from a local garage. There are also several excellent slotted angle-iron products on the market, which enable any reasonably handy man to rig up a sturdy and simple skeleton.

Asbestos sheet (known in some parts as fibre board, not hardboard) is entirely impervious to vermin, exceedingly durable, more efficient in excluding draughts and maintaining a level temperature in consequence, and is less affected by damp and leakage. To those who object on the grounds of external appearance, there are excellent modern painting materials suitable for application on this type of surface that will result in a structure of pleasing character, harmonising with its surroundings.

Provision should be made for an ample supply of daylight as this has an important bearing on their health, condition and breeding instincts. Either glass or Perspex is most satisfactory, but must always be lined internally with wire netting to protect the birds from accidentally crashing into it.

Flexible glass substitutes are admittedly simple to manipulate, but they have the disadvantage of vibrating to an alarming degree when exposed to heavy rain and wind, which may have serious repercussions among the birds. If employed, these panels should be fairly stout in construction with plenty of cross-struts to which the material is stapled down very tautly at short intervals.

Wire netting is the most essential and expensive item. A six-foot roll of heavy gauge (No. 19) half-inch mesh wire netting requires two men to handle it, and also requires a

fairly substantial man to purchase it, but is the best. Three-eighths-inch mesh is the only one that will definitely exclude small mice, but it is almost impossible to obtain today, apart from the terrible cost.

Three-quarter mesh may be used on internal partitions or to line glass areas, provided the precaution is taken to double wire all such partitions on both sides, with a gap of at least one inch between each sheet of netting. This is an absolute necessity where Lovebirds are concerned, and failure to comply therewith will result in damaged feet or even lost mandibles when young birds first leave the nest or breeding pairs feel aggressive. Thrusting the ends of perches through the nearer sheet and wedging the end against the farther sheet will help to keep these surfaces well separated.

Another excellent modern material is 1 in. × ½ in. welded mesh wire sheeting, which, although rather expensive, is most simple and strong to use, pleasing in appearance and very durable. It is still not one hundred per cent. proof against small mice, which soon grow into big ones and can multiply exceedingly.

Judicious combination of these various materials can effect considerable economies. Never use ¾ in. mesh on external frames; a weasel can easily pass through it and will delight in killing every living thing within reach.

Site and aspect of the aviary will depend entirely on individual conditions. The ideal is a level site; it pays to make an absolutely level foundation for your framework to ensure that all construction is accurately squared.

The most favourable aspect is towards the south so that plenty of sun is available. Shade is equally desirable because birds do not like to sit exposed to the direct hot sun in warm weather, but this can always be supplied by a cover to part of the top. The importance of these two items is not so great with movable flights, a system favoured by some.

The theory that better fertility results when aviaries are moved on to fresh ground regularly has been entirely disproved in practice. Keep the soil in good heart and do not allow it to become sour. Lovebirds can easily be kept on wooden or concrete floors covered with sand or clean earth. Fertility and health will then be found quite as great, nor will there be any increase in susceptibility to contagious diseases.

The first design illustrated on page 16 is given pride of place as having proved most successful in practice. It is simple and economical to construct and is the type most favoured by the writer. Although it is primarily intended as a summer breeding flight, many species have been wintered in these small compartments with satisfactory results.

It will be seen that no shelter is provided—that is, no completely enclosed section in which to shut up the birds at night or in extreme weather conditions. Lovebirds normally roost all the year round in their nesting holes, and when they feel the cold they are sensible enough to retire to cover.

Bearing in mind the foregoing remarks regarding suitable materials, this design is very adaptable, so that if constructed from timber, it is a simple matter to protect this from the birds' beaks. The whole of the back is of asbestos sheet, as also is half of the roof and half of each side. The roof also projects over the rear to afford protection to the nest boxes and feeding traps. Adequate cover from wind and rain in any direction is thus available.

The central partition sections must be double wired as mentioned. The floor may either be wired on the bottom and grass seeds allowed to grow through, or the vermin guard detailed may be attached. This simply requires a trench to be excavated round the whole of the base. First remove the top turf, or, better still, only cut it on the edge close to the wire and fold back while digging.

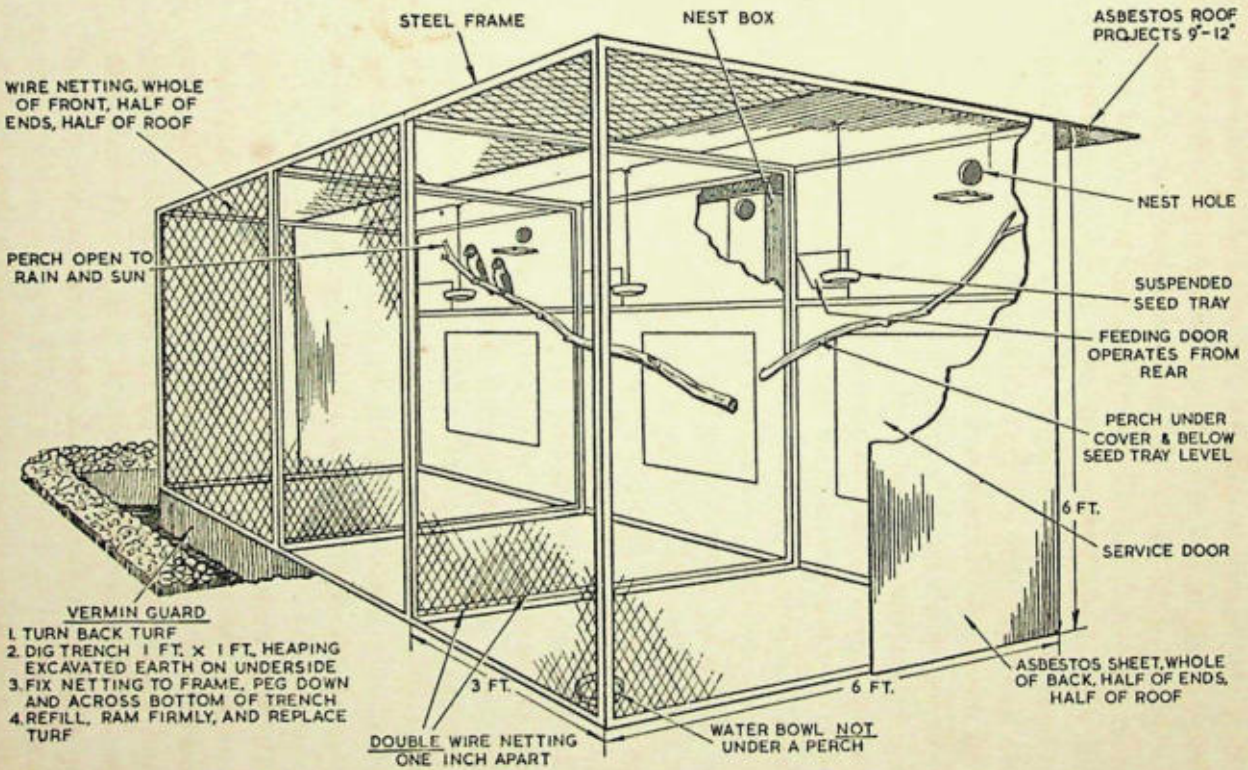


Diagram showing details of a simple and economical outdoor enclosure suitable for Lovebirds.

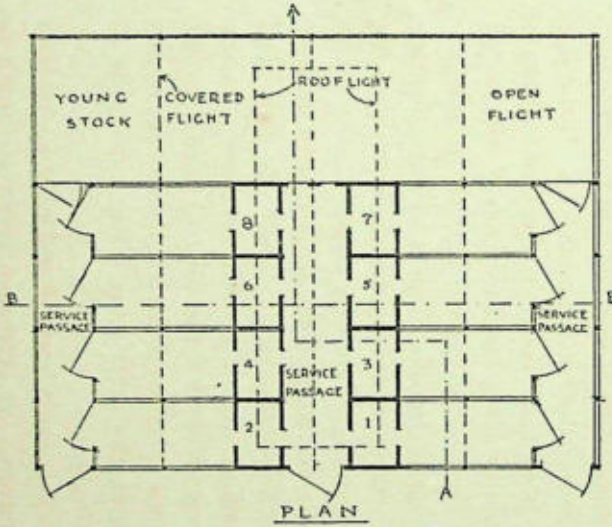
Place the excavated earth on the underside of this turf while working, then extend the wire straight down the side and bottom of the trench—flat galvanised sheet may be used if preferred—and then fill the trench, ram well down and replace the turf. Vermin will often burrow downwards, but once the protective material that they cannot penetrate turns backwards, they give up their digging efforts as useless.

An unorthodox feature in this design is the small size of the doors, which are only some 18 in. square at about the same height from ground level. Since using these small openings there have been no losses through accidental escape, and they are much easier to use than one would at first believe possible. It is never necessary to enter so small a flight except in emergency. All servicing can be accomplished through the small 9 in. square feeding trap, or by reaching through the small door. All feeding, watering and other necessary inspection can be done, therefore, with a minimum of disturbance.

To simplify matters, feeding trays are suspended out of reach of the venturesome mouse, and immediately in front of the trap. It will be seen that this plan can readily be adapted so that two sections could back on to one another with a service passage between, in which case larger doors giving easier access could safely be used if the intervening passage is wired in or even roofed over with glass or a substitute.

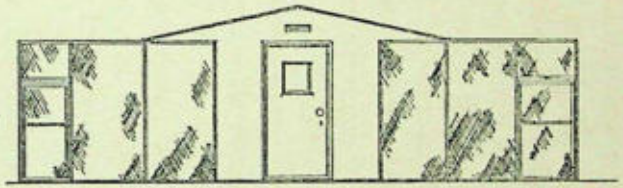
The sizes shown on the plan are variable within reason. In practice, the use of 8 ft. asbestos sheets suggests that one-third (2 ft. 8 in.) of a sheet will nicely accommodate three flights. There is no reason why the flights should not vary; some breeders use flights only 4 ft. long × 2 ft. wide, but this is rather on the small side when really robust stock is the objective.

The second plan shows a scheme to include these features,

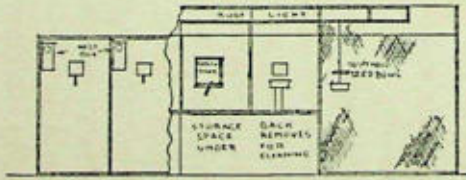


PLAN

A breeding range for Lovebirds. The flights are arranged with a central house, which can be heated slightly, if desired. Servicing is done from a central passage.



ELEVATION



SECTION A-A

SECTION B-B

but the construction is carried out with the idea that birds will be quartered there through all seasons. Flights are arranged with a central house, which can be heated slightly if thought desirable. All servicing is done from the central passage. Safety passages are shown at either end of each range of flights where large doors can be fitted. There should always be a transom over entry doors to prevent unwanted escapes, but if the safety porch is there, no serious loss should ever occur.

In such an arrangement as this a covered area to the open flight should be provided for rain or shine cover, and protection against cross winds should be provided. For this purpose, flexible light glass substitute panels are probably the most useful, bearing in mind the noise factor already mentioned. Nest boxes should always be fixed in the open flight when breeding.

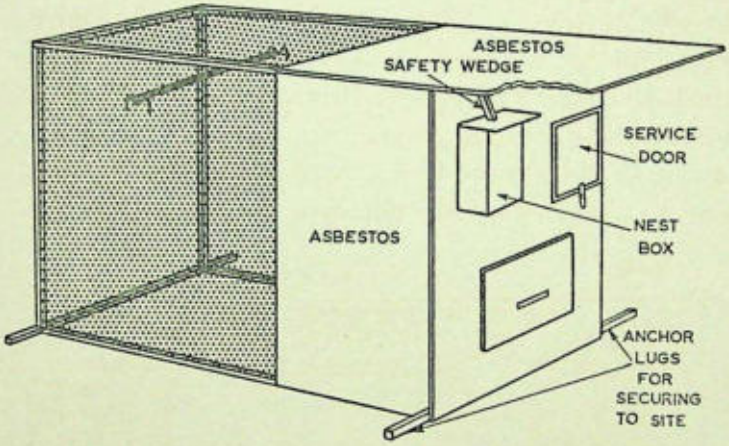
The plan also illustrates a useful addition in the somewhat larger flights at the end. This is most helpful for removing young birds to as soon as they are independent. If the top panels in the flights above the doors in the service passage are made to open, young birds can be driven gently out of their flight through the service passage into the developing flight without being handled at all. This is a great advantage with some species that are exceptionally nervous. It is always well to move young at an early stage.

The third design is given to fulfil the requirements of those who prefer light movable structures. These are individual aviaries. Being small in size, it is well to allow the base cross-members to extend beyond the sides to afford greater stability against wind pressure. Metal hooks or staples should be driven into the earth over these extensions to anchor the flight securely.

This style of aviary is easily moved and may be so built to the needs of a summer or permanent type as shown in

the two sketches. Some breeders have these constructed of wire netting throughout, merely covering parts of the roof and sides with stout bituminous felt or Windowlite to provide the necessary shelter. Such a building is extremely light and comparatively economical.

Although colony breeding is not recommended, there are some who will still wish to experiment in this direction, and



A simply constructed individual aviary consisting of a light movable structure.

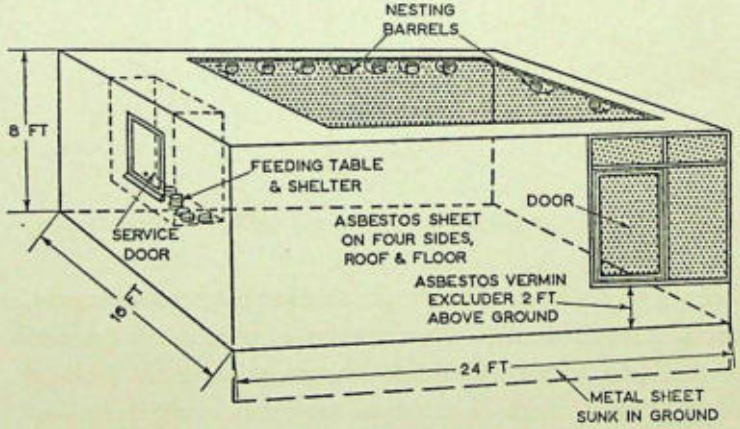
there are certainly times when the method has been successful, generally in California. Descriptions of some such quarters are therefore given. Probably the most carefully planned and specialised flight of this type was that evolved by Mr. A. A. Prestwich, in which he succeeded in rearing the first and most likely the only, Red-faced bird. After years of experiment he described his aviary in the *Avicultural Magazine*, 1957, as follows:

" It measures 24 ft. by 18 ft. by 7 ft. 6 in. high; the materials being half-inch mesh wire netting on larch poles. Three sides are totally enclosed and the fourth, the one with the gate, three-quarters enclosed with sheets of asbestos. The

roof is covered with asbestos sheets to a width of four feet on the north side and two feet on the other three. The enclosure contains a shelter 8 ft. by 3 ft. raised three feet from the ground."

The base of the enclosure had galvanised sheets sunk deeply into the ground and had 2 ft. of this sheet above ground level positively to exclude mice. Nesting facilities were provided and in these sheltered conditions there is no doubt that a colony of between a dozen to twenty pairs might thrive, always provided no spiteful species was the subject of the experiment and careful watch was kept to see that no individual was abnormally over-aggressive.

American aviculturists in California have described their flights sketchily. They do not have English winter con-



Colony design aviary, in which the Red-faced Lovebird was bred by Mr. A. A. Prestwich. This is a most carefully planned and specialised flight of this type.

ditions with which to contend, and, what is probably even less predictable, they do not have an English summer either. Usually the method is to build a flight up to 40 or 50 ft. square, put up plenty of nesting boxes, turn out the birds and remove surplus young at the end of the season. They

seldom think it necessary to build any form of shelter, neither do they appear to get any cantankerous minded individuals that delight in removing toes or beaks of strange young birds unable to fend for themselves properly.

Personal experience is limited to converting Parrakeet aviaries, usually some 18 ft. × 3 ft., to accommodate up to four breeding pairs. As some guide, it is reasonable to hope for some success from a floor space of at least 15 sq. ft. per pair. A simple calculation will show that this is almost as much room as is required for individual pairs in small flights. The only saving would be, therefore, in the material used for partitioning the flights and the ease with which a colony can be fed in one operation.

In gaining these advantages, the risk is run of losing several good birds through sudden quarrelling, and it is much more difficult to keep watch on a number of birds in one large enclosure than seeing each individual pair in their accustomed flight.

The quality and stamina of indoor bred Lovebirds have yet to be proved, and although regarded somewhat sceptically by experienced breeders—so too were Budgerigars twenty or thirty years ago—it is only by continual effort that the advisability of such breeding methods can be proved or disproved. Without such work, no species of bird would ever have become truly " domesticated."

Application of the principles already described for outdoor flights of small dimensions, with possibly even smaller compartments, should provide the best form of experiment. Several breeders have had very satisfactory results in outdoor flights of only 4 ft. × 4 ft. × 2 ft., and similar sized indoor flights may well be equally successful. If cages are to be employed they should be as large as space will permit, preferably of metal construction, and so planned to enable all feeding and cleaning to be done without too much interference.

All young bred under these conditions must be moved as soon as possible to a really roomy flight, to enable them to grow and develop into robust birds, and crowding must be avoided.

Stock cages for winter accommodation of outdoor bred youngsters or adult pairs may be of slightly smaller size as these are only temporary conditions, yet it is rather significant that most breeders who adopt this system usually find that the first nests of the season include a higher percentage of clear eggs or young dead-in-shell. Later nests show increased fertility and stamina as a rule, hence the suspicion at present directed towards cage breeding. Stock may be kept, however, in cages of this type during the winter and there need be no nest or roosting box if the temperature is not allowed to drop too low. This also enforces a period of rest on to breeding pairs to their eventual benefit.

Stock cages should have a minimum length of 3 ft., approximately 12–15 in. deep and 18–24 in. high. They should be of metal construction to resist the continual nibbling from the Lovebird. Cages of this size are large enough for a breeding pair, or six to eight young of the year. If built in sections that can be opened out into longer flights, as is often arranged in birdrooms, more young may then be associated and will benefit from the extra length of flying space.

The bottom should be a tray with at least half an inch turned up edge to hold sand. A deep front bottom rail of 4 in. will prevent husk and sand being thrown out. The cage front should be of strong gauge 14 bars with $\frac{1}{2}$ in. or $\frac{5}{8}$ in. centres without feeding holes, which are quite unsuitable for Lovebirds.

One door should be about 9 in. square in the top right-hand corner. This enables a nest box to be put in or removed, and being at the top it simplifies transferring a bird from one cage to another without actually handling it. The bird

may be driven gently straight through one door into another smaller cage. A second small door is fitted centrally in the bottom of the front for feeding purposes. This need only be about 4–5 in. square, just large enough to allow seed bowls to be placed on the floor in front of the doorway.

All catches on doors must be of a strong hook-up or bolting type out of reach of the inquisitive beaks of the birds. No drop door or spring closed door is sufficient to keep these birds from opening them, and they soon become very adept once the secret is discovered. It is always a wise precaution to keep windows wired in a birdroom, so that when open an accidental escape does not entail a total loss.

When it comes to showing Lovebirds, they generally are relegated to a Budgerigar show cage, which is a pity as such cages are not really suitable. So large a bill for so small a bird can cause a great deal of damage to the woodwork before judging commences, and metal cages are to be preferred. Failing this the cage should have metal linings along the bottom rail and sides. There is no standard size at present, but desirable dimensions are approximately 12 in. high × 12 in. long × 9 in. deep.

Unless thoroughly trained in a small cage of approximately this size beforehand, Lovebirds have a habit of scuttling into the corner on the floor and trying their best literally to fall through the floor rather than be judged. To avoid this as much as possible, the perch should be fixed fairly low down from side to side the full length of the cage and seed containers should also be too low to allow the birds to squeeze underneath for cover. The front rail at the bottom should not be too deep either, or again they will take cover behind it.

To stand a good chance they should be shown in pairs wherever possible. In this respect, species that differ in sex hold a distinct advantage. Red-faced usually gain a good position; they are always easily sexed and look very hand-

some. Their drawback is their nervous and sensitive disposition; once this is overcome a veteran show pair nearly always get well placed.

Madagascars also tend to catch the judge's eye, but they have often a very spiteful nature, especially the hens, and frequently screech continuously when being inspected. Abyssinians are probably the best species for exhibiting. They are good-sized birds, differing in their sexual appearance, so that there is no doubt about their being a true pair. They are the steadiest and best behaved as a rule, and generally have that air of quiet confidence that assures the judge that they know they are good.

Peach-faced and the "white eye-ring" species cannot be sexed by the judge. It is, therefore, sometimes a deciding factor in his mind, perhaps unconsciously, that the award should go to the obvious pair rather than a doubtful true pair. Peach-faced are very handsome and are seen to advantage when steady. In the latter respect the Masked is particularly handicapped by its proneness to bury itself in the corner. Nyasa and Black-cheeked, being smaller in size than most, usually suffer in placings owing to their lack of size when compared with Fischer's and Masked.

Perseverance in training and care in selection of steady birds can go a long way towards reaching the top. Really excellent physical specimens are often overlooked simply because the judge never gets a chance to see them properly. Placing the perch rather low down and not having too high a front bottom rail will help matters.

The food containers should also be fixed low down so that the birds cannot possibly take cover beneath them. If the perch runs from side to side of the cage rather than from the back towards the front, the birds are more inclined to remain up for examination.

One hazard of showing is that in a really confined space,

and disturbed by too close and frequent inspection, an individual may turn spiteful and attack its partner, with whom it may have lived in perfect harmony for a considerable period. For this reason, too, Lovebirds should never be despatched by rail in one box, even for a known proved pair. It is well worth the trouble to enclose each bird in an entirely separate compartment.

Birds from a freshly imported consignment or a somewhat crowded cage may well be dispirited and not greatly interested in their surroundings. It is the really fit and healthy bird that is more likely to cause loss through fighting on the journey.

One final word regarding accommodation. Hospital cages are an essential part of a bird keeper's establishment, but although the first consideration is heat at a constant temperature, it is worse than useless to cage up a Lovebird in a glass-fronted drying cage with a stuffy atmosphere. Fresh air is equally essential. If a bird starts to recover in the warmth of one of these cages it is just as likely to have a relapse when it becomes aware of the closeness of its quarters.

The ideal hospital cage for a Lovebird would be one operating on the principle of air conditioning, where heated air is blown in very gently and automatically escapes at the top. The use of a small electric bowl fire quite close to the cage is the next best arrangement, and may even provide extra benefit through the infra-red rays emitted. Aim at a temperature of 85° but ensure plenty of fresh air. Probably a high percentage of losses in hospital cages with glass fronts, excellent as these may be for drying or for domesticated birds, is due to some form of claustrophobia or semi-suffocation with a Lovebird.

Chapter 3

NEST BOXES

So many nest boxes with auxiliary attachments have been described in the past, that the impression is left that Lovebirds require most complicated conditions to succeed. Further experience proved that these precautions—which were all carefully worked out for specific reasons—are not at all necessary. Early breeders encountered a high percentage of young dead-in-shell. The cause was attributed to lack of moisture in the nest. Some of the designs evolved to counteract this trouble were very complicated, and some boxes very nearly had hot and cold water laid on.

More likely, the cause of the trouble resulting in infertile eggs and weak embryos that failed to hatch, was lack of some vitamin in the diet of the breeding stock rather than unsuitable conditions of temperature or humidity in the nest box. So long as the diet includes essential minerals, vitamin and other requirements the necessary attention to the nests may safely be left to the birds themselves. Lovebirds do not soak their nesting material in their bowls for nothing, and continue to take more in while still incubating.

Next boxes should be, for preference, situated in the outer flight, as if an enclosed shelter is exposed to direct sun, it may well become too hot and dry. In the layout recommended, the boxes are hung under cover from direct rain or sun, but being outside the flight altogether they can more easily be examined without the birds being quite sure that anyone has looked inside. They soon become used to the

service doors being used, and either sit tight or scamper out and fly to the far end of the flight. Of course care must be taken not to open a box while the parents may be inside.

Some individuals resent any interference, and these will have to be left severely alone. Inspection really only satisfies curiosity; it does not really help matters, although one's conscience can be quitened by thinking that a dead youngster might have required to be removed to avoid contamination, or one that was not being properly fed might do better if hand reared.

The majority cannot resist the temptation to have a peep. With wild caught birds this is usually fatal. With birds bred for several generations in captivity it is sometimes tolerated with remarkable forbearance. Inspection should either be avoided altogether or done fairly regularly, and always as unobtrusively as possible. Never put a hand inside or breathe directly into the chamber. On the whole it is better to leave the birds alone.

The Peach-faced, and all four of the eye-ring species, fill their boxes with a good deal of fibrous material. The first do not usually cover the chamber right over, the top is left open. The others often build a much stouter chamber with quite substantial twigs and leaves as well. Disused millet sprays are a favourite item and also the long stems of grasses, which are sometimes fashioned into a double chamber: a kind of entrance lobby on top with the sitting-room beneath.

The hole giving access to this lower chamber is often concealed in one corner, and it is quite possible for anyone making a casual inspection to believe that eggs have not been laid because it was not realised at the time that the hen was sitting below.

This is not always the case, but more often than not, the mouth of the main entrance is well stuffed with material carted in by the birds. Some cocks spend a lot of time in

the box, probably in this antechamber, others scarcely ever go in but roost on the front perch or on top.

The point is that the actual nesting cavity is small, regardless of the size of the hollow in which it is built. It is consequently not necessary to provide a box considerably larger than that used by a Budgerigar, as is so often suggested. This only makes more work for the Lovebirds to fill the hole to suit their own needs. A box measuring 6 in. × 6 in. inside and about 10 in. deep is large enough, whether it is fixed outside the flight or hung inside. The timber should be 1 in. thick to provide good insulation.

It has already been said that the birds are indiscriminate hole-nesters. Any hole is sufficient to awaken their curiosity and breeding instinct. Aspect does not appear to worry them at all. Most birds will prefer a small hole as this gives a feeling of added security. They feel that an unwelcome intruder could not force an entry through a restricted hole, or in the event of such a happening it would only be a small visitor with which they could deal easily. Within limits, they will alter the hole by whittling, or stuff it with material to form a small entrance covered by a sharp twist. The diameter should be between $1\frac{1}{2}$ to $2\frac{1}{2}$ in. according to species.

The less eager breeders—those that are sexually different in plumage—build a different type of nest that consists only of a base of soft material from peat or leaves on which the eggs are laid. Their boxes should have, therefore, a couple of inches of moistened peat to start with, and they seem to prefer a rather deeper box suspended at an angle of 45–60 degrees and about 12–15 in. deep. This may be only individual preference, as they have only nested on comparatively few occasions in the writer's aviaries when sloping boxes were more in vogue.

In the sketch showing the layout of a breeding aviary, the boxes are fixed to the back of the flight under overhead cover.

The tops are removable bodily for cleaning out annually and for inspection if necessary. These tops are close fitting wooden squares that are covered with a small piece of asbestos overhanging 1 in. all round, to prevent leakage and ensure that a bird will not whittle its way out. As a precaution against the lid being levered off, a stick is wedged between the top of the box and the underside of the roof. All inspection is carried out, therefore, by means of a mirror.

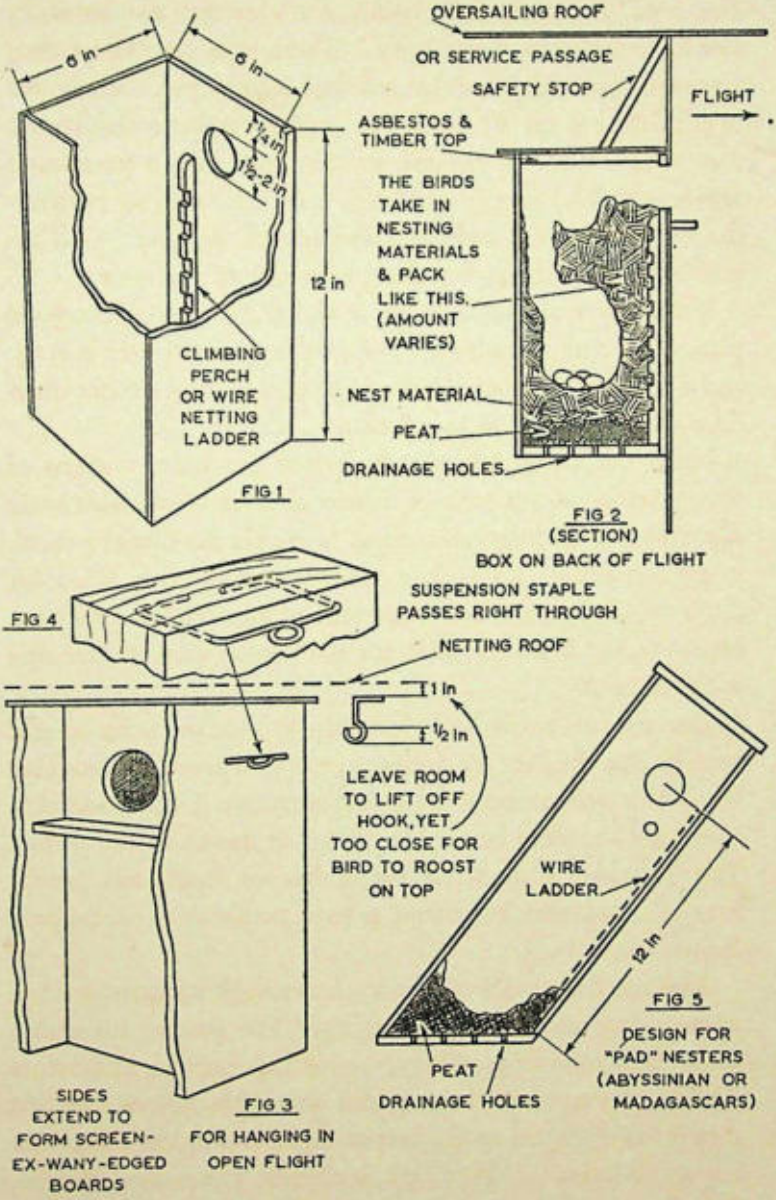
If the boxes are to be hung in the flight, it is still a good plan to have on top a layer of asbestos to prevent both leakage and whittling; neither is it liable to curl as solid timber often does when exposed to the elements.

Inside the box, immediately below the hole, a piece of wire netting, rough bark or a strip of hard wood with wide saw cuts at $\frac{1}{2}$ in. intervals is fixed to enable the birds to climb in or out easily. Outside a platform or perch is fixed for them to alight on. The cock will often sit here for hours, and it makes it much easier for the hen to load up her nest with material.

One or two small holes less than a $\frac{1}{4}$ in. diameter should be drilled in the base for drainage emergency. When making boxes that are intended for use in a colony it is a good plan to extend the sides beyond the front as shown in the sketch. This provides a sheltered porch for the cock and family later on, and also keeps out prying neighbours or Peeping Toms.

Additional boxes should always be available to accommodate young birds shortly after fledging. The parents invariably start a new round right away; sometimes eggs are laid before the last youngster of the previous clutch has flown. At first they wish to return to the box at night and unless alternative accommodation is provided accidents sometimes happen, either from injury or chills.

These boxes, being temporary, should have separate hooks



Nest box details. Fig. 1 A useful type of nest box for Lovebirds. Fig. 2 shows sectional view, and details of fixing to back of flight. Fig. 3 Nest for hanging in open flight, Fig. 4 showing hooking arrangement. Fig. 5 Box for "pad" nesters.

for easy fitting. They should also be as close to the roof as possible to prevent young birds roosting on top where they are extremely vulnerable to a prowling cat or owl, yet sufficient clearance must be left to enable the box to be raised slightly to lift it clear of the top of the hook.

Nest boxes are considerably more durable if screwed together in preference to nailing, which frequently allows gaps at the corners to develop through shrinkage and curling of the timber when exposed to sun and rain alternately.

Chapter 4

MANAGEMENT

NO matter which method of housing one's stock is decided upon, it is most important that a definite system is employed in management. Birds are creatures of habit and soon get accustomed to being attended to at regular intervals. Better results will always attend the establishment where a regular schedule or time-table is kept to as closely as possible. The ideal procedure may not be convenient in most cases, but should be adapted to follow the lines recommended within reasonable limits.

With a collection of any size it is advisable to check all the birds over three times daily at least. Feeding is best carried out first thing in the morning. All food receptacles should be refilled after blowing off husks and removing any stale soft food or greenfood; it is then convenient to check that each bird is behaving normally.

This takes little extra time, even in large collections. It is, in fact, quite extraordinary how many birdkeepers cannot tell an enquirer how many birds he possesses at a given moment, but he would know instantly if one was missing.

As the greenfood is renewed every day, it is as well to do this at an equally regular time, when stale food is replaced by a fresh supply and once more each bird is checked. In the breeding season it is more than likely that food bowls are in need of being replenished once more in the evening so that ample supplies will be available for use early next morning, long before human beings are astir. In any event, all birds

should receive a final check-over shortly before sundown. Any doubtful birds should be brought in. It is always better to risk losing an egg or two, rather than losing a valuable bird.

Three times a day may be more than an average busy man can devote to his hobby. The point is that the numbers of the stock should be kept down in proportion to the amount of time and care that can be given to ensure that all receive proper supervision.

Feeding. Food should be supplied in small quantities at a time, in properly blended proportions. The use of seed hoppers with enough food for a week or even longer is a bad method, and one only to be used in emergency. If you can spare time to attend to your birds only once a week, it is better to turn your attention to domesticated species rather than foreigners.

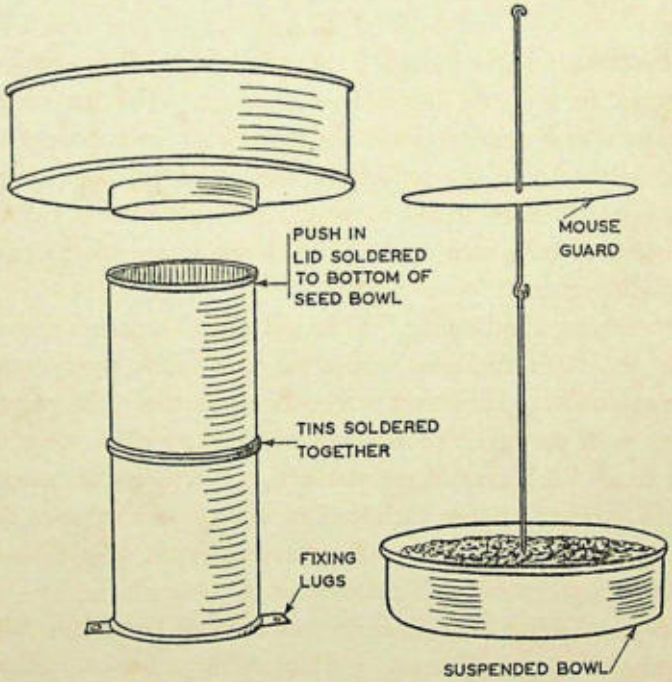
Supplying food on the "little and often" principle ensures that the birds consume a mixture that fulfils their dietetic requirements. They do not get the opportunity of selecting their own particular preferences and leaving those seeds that are in all likelihood most beneficial. For the same reason it is not advised to give each variety of seed in a separate dish, or again the birds can surfeit themselves on a seed that is best only taken in small doses.

A good staple mixture for a collection of Lovebirds would consist of 10 parts Canary, 3 white millet, 2 brown millet or pannicum, 1 small sunflower, 1 mixed grass seeds and $\frac{1}{2}$ part of hemp. Oats and buckwheat may also be added in the proportion of one part each by measure. The usual preferences of each variety will be mentioned later, but every bird has its individual tastes in some matters.

The feeding of mixtures is sometimes objected to, on the grounds that some birds will scatter all the seed about, searching for their favourite seeds. Such birds will also scatter separate

seeds about just for amusement; it is really a habit that some birds have. If they have only one day's ration in their food bowl they soon learn to make the most of it without making extra work for themselves by scratching round on the floor to find what they have spilt.

All food dishes should be placed so that mice have difficulty in reaching them. It is well nigh impossible to prevent the



Two mouseproof feeding bowls. That on the left consists of disused tins soldered together, while right is seen a type suspended from the flight roof.

occasional acrobatic mouse leaping on, but it does discourage them to find the seed suspended on a wire they cannot reach, or standing on a metal column they cannot climb. One very effective seed stand is made by soldering a series of disused tins together, the top one having a removable press-on lid,

which is in turn soldered to the base of the seed tray. This stand is firmly fixed to the floor, and the tray can be lifted to refill and replaced rigidly in position beyond the reach of vermin.

A simple method of supplying millet sprays is to use a plastic clothes peg to fix them to the wire on which the tray is suspended or even out in the flight against the netting. In the latter case they are more easily hooked in position if a piece of strong wire is passed through the spring and bent into a hook for fastening to the wire netting.

Bundles of greenfood can be pushed into a loop of stiff wire fixed at the end of the perch in the open flight, or placed on a wire netting shelf near the end of the perch. Stale food then drops through and can be removed from underneath.

Cuttlebone is one of the best sources of calcium and other trace minerals from sea-water. Lovebirds soon shred it to pieces and eat large quantities when they feel like it. It should always be available. It may also be grated up and mixed with old mortar, limestone grit, oyster shell grit, etc., as supplied to chicks, and kept in a small tray in the shelter or under cover where it will not get soaked. Mineral salts are also an additional item of benefit in this mixture. Some people add ground eggshell, which is also good, provided it has been thoroughly baked before grinding up.

Water. A regular supply of fresh water is essential. The most important consideration is to ensure that the bowl is placed so that no bird can perch overhead or hang from the wire so as to be able to foul the water. The supply keeps cooler and fresher if it is not placed in direct sunlight.

Water must be replaced daily at least once, but there is no need to scour out the dish thoroughly each time. Green algae will naturally form around the edges, and far from

being injurious to the bird's health, this is very probably of considerable benefit.

Even at liberty, a bird seems more particular about the water it bathes in rather than the source from which it drinks; some habitually drink from pools with scum on top. It is most likely that this green algae acts in the same manner as an antibiotic and is instrumental in maintaining the bird in good health. Anyway, continued observation tends to confirm this belief, and no ill effects have ever been noticed.

If the water is emptied and replaced daily, the supply keeps clean in spite of the green colour; it is not suggested that the water should stand and become stagnant and a brown slime allowed to collect.

Nesting Materials. When Lovebirds are nest building, they strip off lengths of green bark, leaves, etc., and often lay them in the water to soak. It is necessary, therefore, to have a large, but not too deep, bowl in which they can bathe. This soaked material is an important factor to successful rearing, and is the method by which the birds instinctively adjust the humidity of the nest box without requiring any of the artificial human aids that are probably quite useless.

When replenishing the water, do not throw these materials away, just turn them out on the ground beside the bowl when the birds will come and take pieces they require for this purpose.

It follows that when the birds are nesting, a continuous supply of materials must be kept up. During incubation and after, they will continue to add to the nest, pieces of bark, leaves, old millet sprays, grass stems and any other odds and ends that take their fancy. The favourite twigs are willow, lime, hazel, fruit trees, etc. Some birds use thin bark whittled down to a soft woolly texture, others prefer quite stiff pieces of twig.

Grass from the floors or from their greenfood is used by others, but the practice of supplying straw or hay as an extra for nest building is not advisable, since it is so liable to set up mould growths when dampened, and these can start trouble with the birds' health.

Cleaning. Most Lovebirds keep their nests in exceedingly clean sanitary condition, others allow the lower part to become definitely moist, but it is not necessary to rake out all material after each clutch has been reared and make the pair build a new nest. There is seldom any trouble from insect life that is detrimental to the birds. A dusting with D.D.T. at the opening of the season, into the corner crevices of the box, is all that is required beyond the attention the birds will give the matter.

Similarly, if enclosed shelters are used, there is no need to clean them out regularly and disinfect everywhere each week. The birds are best left to their own devices as much as possible all through the breeding season. Commercial poultry keepers have been extraordinarily successful recently with the system known as "deep litter" management. The feature of this is that the birds are not subjected to frequent cleaning out, but it is essential that the deep floor litter should not be allowed to become wet.

If, therefore, seed husk is allowed to accumulate on the shelter floors, there is not likely to be any trouble from this, provided, always, that the litter is never allowed to get wet and there is a good circulation of fresh air to discourage any mould or fungoid growths.

In the small control flights, with no separate shelter, as already described, there is little possibility of any mouldiness forming in the open air. True, a certain amount of seed will fall to the ground below the bowls, but being in the open air these will generally start sprouting and in this state

the birds will use them without any harmful effect. The seed continues to collect and the birds do not forage about or scratch it over like a domestic hen. It has been found quite safe to leave this until cleaning out in the autumn or spring and so disturb the birds as little as possible.

Floors. It is very important, however, to maintain the floors of any aviary in good heart and sweet condition. Lovebirds prefer a grass floor in the majority of species. If the floors are of timber or concrete or other artificial base, it is necessary to keep up a supply of turf or extra greenfood, or trouble may arise owing to inadequate dietetic intake.

With little extra work, it is possible to make an earth floor on top of these artificial bases, by spreading sand, or sifted earth, and sowing grass seeds together with canary and weed seeds. In the writer's experience this extra trouble is worth while. Provision for drainage must be made so that the soil covering does not turn sour, and the whole of the floor can be cleared out each year, the base washed down, and an entirely new one put down for the following season.

On a solid earth base, vermin have to be excluded, either by covering the whole of the ground area with netting or by trenching all round and sinking the netting below the surface as previously outlined when describing accommodation. In the former case, the same floor treatment can be carried out as recommended above. This is best done by removing all husks and other matter in the autumn, when the birds are brought in, or have finished breeding.

Strip right down to the netting covering, lime the undersurface and leave exposed to the weather for the winter months, then returf in the spring. If the trenching vermin guard is used, the procedure is similar, but the top surface can then be lightly forked over before resowing, and in this respect the trench has a distinct advantage, because it will

be found that, where the netting covers the whole of the surface, several roots will have grown through, making it difficult to clear the surface without breaking the netting and thus rendering it ineffective as a guard.

Prolonged treatment of the top spit of earth over the years seems to improve its texture and make the work easier each successive season. The addition of dehydrated lime keeps the soil fresh; some prefer to give a dressing of agricultural salt as well. As a disinfectant against coccidiosis, household ammonia is said to be most effective, more so than any ordinary disinfectant.

As a deterrent against this disease the turned-over earth or exposed surface may well be sprayed with household ammonia before leaving it open to the weather for the winter months. This is an added advantage in favour of bringing the stock in for the winter. It does give the earth a chance to rest and be dressed thoroughly.

Either type of earth floor may be renewed by covering with turf, in which case be sure that the turves, if obtained from a nurseryman, are not from land on which poultry have been kept. This would be no disadvantage if a lawn were being laid in the normal course of a landscape gardener's work, and he would not appreciate that such sods would be likely to cause considerable trouble to an aviculturist. Alternatively, the surface can be resown with grass seed. Best lawn seed is not the ideal type; it does not do well under constant drip from netting overhead. Dogstail and cocksfoot seem to be least affected in this manner, and these should form the basis of the mixture.

Rye grass is the favourite of most birds and may be sown, but it does not like netting. Timothy, fescue, poa annua, together with any weed seeds or screenings from a threshing floor, will all be appreciated and help to provide a good covering.

These should all be sown early in the year and a sifting of sand or fine earth added. By June the floor will be well covered, whether the birds are in the flight or not.

If the birds are left out permanently in these small control flights, it is quite in order to clear the floors in the autumn of the debris accumulated during the breeding season, and then thoroughly overhaul the floor in the spring as recommended. Usually the birds will oblige by retiring to the nest box of their own free will while the upheaval is in progress.

The more closely one adheres to a strict routine in management, the less likelihood is there of any detail being overlooked. Such treatment is appreciated by the birds who soon get to know their time-table as well as their owner. If daily routine is kept, with a weekly check on certain items and an annual overhaul, all operations being regularly carried out in the same sequence, at the same times and by the same person, it will soon be found that all those innumerable petty details become completely automatic and no trouble at all, to the satisfaction of both the birds and their owner.

Chapter 5

PLANNING A BALANCED DIET

PROPER feeding is the keynote to success. It should be obvious that what comes from a pair of birds must depend in the long run on what goes into them. Food being literally the only thing that does go into a bird, this remains as the only source by which one can hope to influence their output, or more plainly their offspring.

Scientists can tell us what chemicals are required to keep a bird in good health and vigorous condition, but it is another matter to explain how these minerals may be offered to the bird in a form that is acceptable. Really healthy and happy birds do not have infertile eggs, or fail to hatch their clutches; if that were so, they would not survive.

The cause of such misfortunes, therefore, must lie in failure to provide proper conditions that will ensure high fertility and fecundity. This is the aim of all true bird lovers, and to achieve it calls for the use of a little common sense, often referred to as " bird sense " and equivalent to the gardener's " green finger."

It must be accepted at the outstart that a diet in captivity cannot be the natural foods to which these birds are born in nature. One can scarcely be expected to go to Africa each morning to collect fresh seeding grasses and figs that would normally be consumed. The object, therefore, is to find a satisfactory substitute.

The nutritional requirements of a bird are known today to a considerable extent, and there is little doubt that when

things do not go right, the trouble can eventually be traced to dietetic deficiency somewhere. There is, of course, still a lot to be learned about this subject, and progress can result only from co-operation between aviculturists and scientists.

Briefly, it is known that a balanced diet cannot be obtained by any bird from dry seeds alone. Excellent as these may be to replace the energy consumed by the bird as it functions normally, they are all deficient in certain very important vitamins, minerals or proteins that are needed to enable every faculty to work properly.

In an entirely natural state, a bird is free to partake of all kinds of foods, either as a means of refuelling its system to replace energy burnt up, or it may seek out instinctively some particular item that is of medicinal benefit to prevent or remedy sickness. Some of the ingredients of the diet may appear to be of no practical use, but they are often of great importance to enable a bird to digest or otherwise absorb its food. In other words, they ensure that the bird's chemical balance, or metabolism, is maintained. This is, briefly, the problem facing the aviculturist.

Recent research has established the nature of at least some of the deficiencies in a seedeater's diet. It has also been found that many of the properties lacking in this diet are rectified by supplying fresh greenfoods. There is no form of greenfood so rich in the factors normally lacking in dry seeds as wild greenfood and ripening seeds and grasses, which are, of course, precisely what the bird would take in a natural state and consequently an ideal substitute.

Again, experiments in feeding poultry and other farm stock have revealed the advantages of adding extra protein, vitamin, etc., to ordinary foodstuffs, and an enormous amount of food today is completely synthesised and fed in the form of pellets or as additives to mashed foods. Even antibiotics are deliberately added to their foods. In this respect, it has

already been suggested that algae in the water supply may have a similar effect, and there is little doubt that when birds pick over a handful of freshly turned earth, as they nearly all do given the chance, they are very probably finding some natural antibiotic.

If, therefore, a certain amount of common sense is applied to feeding one's birds, and good healthy stock are procured to start with, there is every reason to suppose that improvements should result, and eventually, relatively difficult subjects become more tractable as progress is made.

Various Lovebirds have slightly different tastes, but even individuals have their own particular preferences to some extent. The object should be to train the birds to eat such food as is good for them. Left to their own devices, some would eat only sunflower and hemp if they had an unlimited supply.

For a time, these birds might appear to prosper and get into lovely condition. Then one day one is picked up dead on the floor for no apparent reason, because it is in lovely condition and plump to all external appearances. "Scarcely worth having a post mortem—it must have been an accident or a fright." Post mortems are nearly always worth while, provided a proper one is made or you have sufficient knowledge to learn why the victim died. In this case it would undoubtedly prove that the cause of death was due to overfat condition of the heart or liver. Death was really due, therefore, to carelessness on the part of the keeper.

Only best quality seeds should be used at any time, preferably not artificially dried. Canary is the main constituent of the diet for Lovebirds; it should be fairly large but not super-sized. During the post-war period when only English grown canary was available, most birds did extremely well on this seed. It was much "greener" and had a larger moisture content than the present imported varieties, which

look very much cleaner and nicer, but there are still a number of breeders who like to mix in some of this English seed because the birds do seem to like it.

White millet is a seed that is taken intermittently by some birds but scarcely touched by others. It seems to be of little importance whether included or not, but possibly makes a change, and some birds do consume quite a lot at times. They are generally much more interested in brown millets or pannicum, which have a number of names in different parts of the world. In Africa they are said to be fond of sorghum, a species of millet.

The best way to feed these millets is in the well-known spray form, particularly when young are in the nest or recently fledged. Young birds sometimes start eating spray millet within a day or so of leaving the nest.

Groats or oats—the former being merely hulled oats—are very popular with some Lovebirds, but they are a fattening food and should be kept down except in winter, when they help to keep a bird warm, or at breeding time, when the parents are particularly fond of them in sprouting form. Oats sprout rapidly if thrown on the ground when damp. Groats, having been husked and lost the germ, will not sprout.

Rye grass seed is a great favourite with nearly all Lovebirds when ripe and in the head, but they will learn to take this in their mixtures if it is supplied, and an addition of mixed grass seeds as suggested when dealing with floors or flights, may well be added as a proportion of the seed mixture.

Sunflower and hemp are both oily seeds and rich in protein. They are, therefore, undoubtedly good for birds, but they can equally certainly be harmful if taken to excess. Both of these seeds should be rationed; more is said under the individual requirements of the various species concerning the advisability of supplying these two seeds.

Self-plucking, and plucking of young in nest, were always

attributed to excess hemp and sunflower, but this, in the writer's experience, was not the cause. In the lean years after the war these two seeds were almost unobtainable, yet during that time the proportion of plucked youngsters was higher than at any time, which did point to the fact that the cause of this tiresome habit was probably lack of an essential factor in the diet, but it was certainly not due to an excess of hemp or sunflower. However, the danger of overfatness through use of these seeds has already been commented upon.

In any case, the best sunflower to use is one of the small varieties, either white, striped or black, but not too large; these larger seeds are nearly all husk and most birds, even large Parrots, prefer the smaller seeds and they are certainly better value for weight or bulk.

Good hemp seed is one of the most rapid sprouters, but a lot of hemp that has been available here of recent years has been of poor quality in this respect. This may be due to the fact that it is illegal to market it unless sterilised in some countries, and less care is taken in harvesting. Sprouted hemp is most helpful in rearing young, and at this time and in the sprouting state, there is no likelihood of any harmful effects.

Buckwheat is probably one of the most beneficial seeds, but seems to be most underrated. Together with persicaria, it probably saved many of our birds during the war years, and it seems rather ungrateful to cast it aside now. Many of the Lovebirds eat quite a considerable amount once they can be persuaded to start, and there can be little doubt that its use is well worth while. Strangely enough, although analyses of most seeds are frequently published in farming journals, buckwheat is seldom if ever mentioned and no one appears to have given it serious consideration from a scientific point of view.

Many Lovebirds do not display an avid interest in greenfood,

when first supplied. Coming from the tropics originally, they can rely on the rotation of their seasons being fairly constant and regular. After the rainy period there will be plenty of greenfood and it is time to breed. In captivity it will be found that most Lovebirds will take more readily to greenfood and seeding grass when they have young to feed. The trouble is that, if they ignore it beforehand, the chances are that there will be no young to feed, due to the parents themselves not being one hundred per cent. fit and ready to reproduce.

Failure to persuade your birds to take plenty of natural foods is the probable cause of, first, infertile eggs, secondly, weak embryos that fail to hatch, and lastly, the plucking of young in the nest. The absolute importance of perseverance in this direction cannot be too strongly emphasised.

All of the following are useful supplementary items that Lovebirds can be weaned on to, some more easily than others. Chickweed is the prime favourite and will be eaten in the green or seeding stage; it is preferred in the almost ripe stage when the tiny heads are milky when squeezed. Dandelion leaves are excellent early in the year when all greenstuff is scarce, but may be inclined to be scouring to very young birds in the nest, when it should not be too freely given. The seeding heads of dandelion are always good, too.

Groundsel, green and fresh or seeding, shepherd's purse, persicaria, sow thistle are all appreciated in the seeding state. Rye grass in the ear, timothy, poa annua and other weeds and grasses are all picked over with great enjoyment with birds that have been trained to do so. If you have one or two birds used to taking these seeds, the others soon follow their example, but sometimes it is quite difficult to start them off.

Such items of greenfood may be given wet or dry without inducing enteritis—one of the scourges of all bird breeding—always provided care is taken to ensure the seeds come from

a source where they have not been fouled in any way by animals or sprayed with insecticide or weed killer; secondly, that all stale food left over is removed.

Where it is not possible to supply sufficient wild weeds, etc., substitutes may be offered in the form of lettuce, spinach, carrot or turnip tops, or other dark greens or cabbage, grated carrot, etc., but in the writer's experience these are only poor substitutes, and even more difficult to train the birds to take. Spinach has been widely recommended on account of its iron content; but some experts are of the opinion that it also has a relatively heavy content of oxalic acid, which, in a bird, absorbs too much of the vitally important calcium element from the system before it can extract the full benefit therefrom.

Generous supplies of wild greenfood will provide all the needs of breeding birds, so long as the birds are actually partaking of it. It is possible to buy vitamins in a bottle, literally speaking, today; these can be quite expensive compared with greenfood available for the picking, and they must be offered to the birds in a form that they will take.

Most Lovebirds are only too pleased to take advantage of soft food on a basis of brown bread when rearing young. The best method is to use a stale brown loaf that has been thoroughly rusked in the oven, ground up and stored for use. Just prior to use, it is softened by the addition of sufficient hot water to make it crumbly moist; on no account make it wet or sloppy like porridge.

To this may be added, after it has cooled down, one of the vitamin extracts now marketed. Only sufficient of this should be given to the birds so that they clear it all up fairly quickly, as they will do once the taste is acquired.

To ensure that birds have a good intake of vitamins A and D, it has been the practice of many breeders to add cod-liver oil to their seed. This method is not recommended

with Lovebirds. There are too many consequential dangers such as proneness to overfatness and risk of rancidity. Cod-liver oil oxidises rapidly, and some birds definitely dislike seed that has been impregnated.

Sprouted seed is an excellent source of vitamins, when the greenfood supply is restricted by circumstances. Canary, wheat, oats and hemp are all good germinators. Millet is rather too slow. The seed is simply placed in a jar or bowl and covered with water for twenty-four hours. It is then strained off, washed, and left standing in a warm place for a further twenty-four hours. It is then rinsed, not too strongly, just enough to remove the somewhat offensive smell generated in germination, after which it may be fed to the birds. About one teaspoonful per pair is plenty, although considerably more may be given when young are in the nest. At this time, too, sprouted sunflower will often be appreciated by some species.

Apple is seldom touched by any but Red-faced, Abyssinian and sometimes Peach-faced. It should be given to the first two, but Red-faced are particular about the quality; Abyssinians definitely eat more apple than any other species as a rule. Other varieties seldom touch it. Figs are the natural food of some species that seem to do quite well without this commodity in captivity, but any further notes on this point are found under the specific chapters.

Chapter 6

THE BREEDING CYCLE

HAVING decided upon the methods of housing and feeding to suit the particular circumstances, the next important step is to study what may be done to assist in achieving maximum results. By far the most vital matter is to put quality before quantity.

The actual breeding cycle is straightforward enough, though it may vary slightly with the different species; such deviations will be pointed out under the notes on the species later. Apart from the specialised requirements of the Red-faced, all Lovebirds are indiscriminate hole-nesters. This recapitulation of their breeding procedure in brief is necessary to have the main points well in mind while they are under consideration.

The nest chamber is lined with materials, most of this being carried in by the hen, who is also responsible for incubation duties. She is joined by the cock in the nest for considerable periods in some cases, though he does not assist in the operation so far as can be observed. The cock is responsible for feeding the sitting hen and also both her, and the young, as they are being reared. His duties increase in this direction as they grow, and even more so after they fledge.

Incubation takes approximately nineteen days, but the eggs are laid on alternate days. The hen starts sitting on the second or third; thus the first bird hatches on the twenty-second or third after the first egg is laid. The young are in the nest for thirty to thirty-five days before fledging, and they return to the box at night to sleep.

A beginner buys a pair of Lovebirds. He turns them out into a small flight, probably in company with a mixed collection. They promptly go to nest, and by the end of the season have reared fourteen or fifteen youngsters without any trouble at all. Not unnaturally, the novice is very delighted—probably more so with his own skill than the ability of the birds—and he writes and tells the world how easy Lovebirds are to breed.

Many others read of this feat. By a simple calculation it is realised that with six pairs of prolific birds one can rear ninety young Lovebirds in a season at an average selling value of three to five pounds per head—a very remunerative and interesting hobby. Between three and five hundred a year seems feasible, and to those with no conscience a most useful little tax-free bit of income.

That *might* have happened, and indeed those accounts that periodically appear are usually quite true. What *is* more likely to happen, however, is that next year he loses one of his breeding pair through an accident or chill. Of the six young he kept back to increase his stud, two engage in combat and have to be written off or the remains buried. The remaining three turn out to be of the same sex. Now this story is one from which much could be learned. It is strange that the account is not considered worthy of being recorded with equal publicity.

An experienced breeder would have tried to arrange things better. These two hypothetical cases are given as extremes to illustrate the difficulties that may be encountered. Fifteen young from one pair in a season is too many. Where quality is the aim—and it always should be so—eight to ten is the maximum number that a pair should rear.

This number can easily result from two broods. If one brood fails to hatch, or the young are not fully reared, it is reasonable to allow a third effort, but not more than three

in one season, and not more than two fully reared broods. Reasonable management would be satisfied with a total of anything from four to ten young in these two broods.

Few people realise the strain that is put on a pair of birds in raising their families. It is not natural for them to rear three or four clutches each year. Their breeding instincts are excited by the natural seasonal changes in light and availability of suitable rearing food and conditions. Nature has strange ways too of controlling such matters. They do not normally breed all the year round; at least, if birds are found breeding at almost any time of the year, it is certainly not the same individual pair.

In the formation of the eggs, the hen has the ability to draw upon the reserves of minerals, etc., stored in her frame. This ability is dependent on many factors, largely vitamin and mineral reserves, which are rapidly used up. It is not sufficient to increase supplies of these requirements just prior to breeding, they have to accumulate over weeks; and as they are used they have to be replaced. The build-up, therefore, must start weeks ahead of the breeding season, and be considerably stepped-up as well at the critical moment.

Both parents use up further reserves from their systems in partly digesting the food regurgitated for their progeny while being reared. The amount of food consumed to rear a family must be many times their own weight, and it should be obvious to anyone who stops to give it any thought, that the birds are bound to exhaust themselves. The advice, therefore, is to restrict reproduction to reasonable numbers as recommended above.

The most favourable times for breeding here, are from mid-April to September, which gives comfortable time for two nests or a third if one does not run the full cycle. That is one reason why the best results are usually obtained where the birds are brought in for the winter, irrespective of con-

siderations as to whether they can stand our climate or not.

Assuming that care has been exercised to acquire only healthy stock, preferably unrelated, and accustomed to this climate, the next most important point concerns the age at which birds are allowed to start nesting. Lovebirds are very precocious and mature quickly. There are records of them having fertile eggs when only four months old, and one frequently hears of birds having families at nine or ten months.

However, no bird should be allowed to breed under a year old, when it has had some chance to develop fully. Permitting them to raise young at an earlier age is sheer bad management that is bound to end eventually in degenerate stock, and is a matter for shame not pride. To such sources can usually be traced birds that have infertile eggs, dead-in-shell, or the vice of feather plucking.

The problem of fresh blood and inbreeding is not acute today in most species. Ample supplies of Masked and Fischer's came in while the ban was relaxed a few years ago. Provided aviculturists take reasonable care there is no need to weaken the supplies now available. Since the reimposition of the ban, several other species have become available in more limited number, and again with care should become established.

The safest method for a beginner to secure a true pair will be dealt with under sexing. One other point should be repeated while breeding is under consideration, namely, the great undesirability of indiscriminate cross-breeding of species. Establish thoroughbred healthy strains, before experimenting in mongrels and colour mutations by cross-breeding.

The average useful breeding life of a Lovebird is difficult to assess with accuracy. Like most birds, their life in captivity is probably of considerably longer duration than would be the case at liberty with all the hazards of natural enemies. There are definite cases of a hen breeding for at least six

seasons. One cock in the writer's possession reared two broods when he was at least eleven years old.

While the birds are breeding, it is essential to keep up a continuous supply of fresh twigs for the parents to shred up and soak. This process is used by the birds to keep the temperature and humidity of the nests at the correct degree. Bundles of willow, lime, hazel or any similar tree should be hung up where the birds can strip off the bark and leaves. It is also a likely source of vitamin intake as well.

Whether the nests should be inspected or not is a debatable point. With the more difficult species that are somewhat reluctant to nest, it is foolish to add to one's obstacles by interfering with a nervous bird. If the nests are so placed that they can be inspected without the bird's knowledge, there is not much harm done, but in any event, never put a hand in the nest or breathe down into it, as this always seems to warn a suspicious natured hen and she will desert. The only satisfaction really gained by looking is purely one of curiosity.

Birds that have been aviary bred, or are thoroughly used to their owners, do not seem to resent their interference greatly. But with a wild caught bird it is almost invariably fatal to inspect. There is possibly some truth in the idea that inspection should be made regularly every day or not at all; it has already been said that birds are creatures of habit and they soon become used to it. If you are not of too inquisitive nature, better results will probably be obtained if they are not inspected at all. It is a matter of management to be decided on by the individual.

It is not necessary—nor advisable—to clean out the nest boxes between each round. This would only delay and disturb the birds. All boxes should be thoroughly overhauled each year, disinfected and dusted along the cracks around all joints with D.D.T. powder not stronger than $7\frac{1}{2}$ per cent.

The bottom of the nest is then covered with an inch or so of moist peat mould, ready for the birds' use. Where boxes are fixed in position and cannot be taken down for winter or when the birds are not occupying them, they must be firmly closed down with a piece of metal over the hole to exclude mice from taking up residence.

When the young fly for the first time, it is best to keep well away for a while until they can control their movements and so save dashing themselves about. The parents will look after them in almost every case.

Sometimes the hen will start a second round before the last young of the first clutch has left the nest. A second nest box should be put in the flight for the young to roost in before they actually leave, in case one of the parent birds turns them out of the old nest. Father usually sees them safely away for the night. When they are ten days off the nest, that is, when the last one is that far advanced, they should be watched to ensure that they are feeding. They will usually start on millet sprays very quickly.

It is advisable to remove the young to another flight as soon as they are seen to fend for themselves. They must always have a nest box in which to roost from the first. One of the easiest ways of moving them is late in the evening when they have gone to roost. Move the box bodily, and cover the hole with perforated metal till morning. Make sure that the old cock is not in with them.

By taking them away, they soon become independent, and there is no risk of the parent losing his temper and damaging them, as some bad tempered individuals do. It is even more important to remove young birds at the earliest possible moment when more than one pair are being colony bred. If a young bird pesters an adult for food, and that adult does not happen to be its parent, it sometimes inflicts severe damage to the nestling, or even kills it.

Another advantage of early separation is that there is no possibility of getting the old birds confused with their offspring. It is quite difficult to do this later, as they mature outwardly so quickly. When they are still young they can be distinguished without doubt.

Incidentally, it is never wise to ring Lovebirds. Celluloid split rings are useless; they are soon split both ways and the birds easily get them off. Never try to close-ring young birds in the nest either; most parents resent this strongly, and will damage the young trying to remove the ring, or else drag the unfortunate baby out of the nest altogether.

In any event, Lovebirds are so strong in the bill that no metal ring is safe. The birds are able to squeeze the ring so that it stops circulation, with the result that the leg is damaged or the entire foot lost. This has been known to happen with a close-ring. If birds must be marked for identification, it is better to snip the end of the wing or tail feathers, which, of course, moults out in due course.

Rare occasions arise when it may be necessary to hand rear a young bird. This may be done more easily with Lovebirds than probably any other psittacine bird. Tiny young, only a few days old, have been so reared, and have grown into perfectly normal healthy specimens that have in their turn reared good young themselves.

When this is attempted with very young birds, they have to be kept in a box that is heated to a temperature of about 90 degrees at first and feeding has to be done every two hours. This period is lengthened as progress is made. The consistency of the food must be very thin at first and thickened gradually as they grow older.

The crop should be inspected to gauge whether feeding time is indicated; there should always be some food left in the crop, which is easily seen while the youngster is naked. It is necessary to warm the food up to blood heat and keep

it at that temperature during the whole of the operation. This is done by immersing the container in a larger bowl of hot water.

A hypodermic syringe with a special tube attachment in place of the needle is the best instrument, but eye droppers or similar utensils may be used. At first it will be found necessary to open the side of the beak and insert the tip of the syringe tube near the joint of the two mandibles. The food is then gently forced into the mouth, and on to the crop. This does not take long, although it should not be too hurried so as to choke the young bird.

The bird soon realises what is going on and co-operates. In a surprisingly short time, you have a row of small Lovebirds lining up on the table waiting their turn to be fed. Birds reared in this manner rapidly learn to be independent, much sooner than one reared by its parents, and they are often feeding at a month old.

The food consists of a thin porridge at first, made from baby food, oatmeal, with the addition of liquid vitamin extract, which may be thickened with peanut butter for a change later. They can soon be weaned on to brown bread in a crumbly moist condition, not sloppy, and they soon start examining millet sprays.

An excellent base for the nest box during these rearing stages is a pad of paper handkerchiefs one or two of which can be removed from the top every time the young are fed.

Chapter 7

SEXING

IT is uncommon for a genus to contain species in which sexes are alike in some instances and different in others. *Agapornis* are one of these uncommon cases. There is, of course, no difficulty in sexing Madagascars, Red-faced or Abyssinian. Swindern's are alike, but present no problem to the aviculturist as they are unknown in captivity as yet.

When it comes to the Peach-faced and the four eye-ring species, sexing by visual external means is not difficult either—it is impossible. Over many years, guaranteed true pairs have on occasion been purchased from recognised experts in this matter, but have eventually proved to be of the same sex. The only guarantee one can have is when fertile eggs are obtained from the pair; otherwise there is no infallible method.

From earlier writers one can learn that in the opinion of a certain breeder hens are usually larger than cocks. Shortly after this you are bound to come across another who always manages to select a true pair because the cocks are larger than the hens. Probably they were both right. Even more likely they were both wrong, but in both cases they finished with a true pair and the conviction that they were able to pick out a pair. They made no allowance for luck!

With extended experience, the writer is satisfied that every one of these indications of sex, genuine as the exponent may be, is only a matter of individual variation in no way dependent on sex, and there are always exceptions. No reliance, therefore, can be placed on them.

(From a drawing by E. N. T. Vane)

Lovebirds: 1, Madagascar, male and female. 2, Peach-faced. 3. Abyssinian or Black-winged, male and female. 4, Black-collared. 5, Red-faced, male and female.

Systematic scientists give sub-specific recognition to some birds that may only differ from the original race—generally referred to by scientists as the nominate race—by so slight a matter as a wing length of 2 mm. greater or lesser. It is, of course, more often done where birds from one district have, say, a blue rump of slightly intenser hue or a paler head. These slight differences are accounted for by some local difference in environment—or the ecology of a bird.

This branch of science is becoming more and more interesting and complicated, but some rather astonishing facts are being discovered. A bird coming from territory " A " could belong to sub-species " A," but if removed to territory " B " it might well in time take on the characteristics of sub-species " B." A bird, therefore, might conceivably lose entirely, in captivity, some slight characteristic that would enable a scientist to identify it precisely as any particular sub-species.

This somewhat digressive note is to offer a possible explanation for the various opinions sometimes expressed about sexual differences in Lovebirds in captivity. An aviculturist seldom knows much about the exact geographical origin of his bird. They probably came from a certain breeder or on a ship from Capetown or Accra or Freetown, and the point is of minor significance to him.

The interesting fact is, that wherever the bird may have come from, it is possible—repeat possible—that after a moult in captivity in unnatural surroundings, the particular specimen might lose the characteristic that would have identified it with the sub-species to which it belonged.

The inference to be drawn from this is that in all probability a careful observer of birds in his aviary might well be comparing two birds and can note a difference, yet this difference may be due solely to the fact that they came from different areas, and have no bearing on sex at all.

In quite recent years, 1955 to be exact, a new sub-species of Peach-faced Lovebird was named in which the pink was brighter; yet this is a factor often quoted as a possible aid to selecting a true pair. It most certainly is not. Peach-faced hens are sometimes the brighter of the two.

Of the many hints given as a guide to the indication of sex, all of the following have been found incorrect on occasion; therefore, all are unreliable. These are: size of bird generally; shape of head, bill or neck; posture when sitting on the perch; flapping of wings more so than another bird.

Since the Marquis of Tavistock's book suggested that Blackcheeked and Nyasas could be sexed by the colour of the iris, this has often been repeated. One year some half a dozen pairs of Nyasas were carefully examined and paired up on this basis. They were turned out for breeding and all proved to be true pairs. With great relief and thanks, therefore, the theory was accepted and regarded as thoroughly reliable.

At the end of the season, these same birds were all caught up and separated from their young so that no mistake would occur the following spring. Alas for the hopes of no further trouble with sexing. Not one of the pairs showed any difference in the eye, though examined by the same two people who had so cleverly sexed them at the beginning of the season. Some variation was noticeable, but quite definitely it was impossible to separate the adult breeding pairs by means of the iris, and there was no constant variation related to sex.

When a number of Lovebirds are turned out into a flight or cage to observe them, they are often seen to sit together in couples. This is not necessarily a true pair, however. Apparently young boy Lovebirds—or young girls for that matter—are often very good friends and that is all. This can often be seen when a colony of Madagascar or Red-faced

are together. Apparently sex has little effect on friendship.

The most satisfactory procedure for the beginner, is to obtain pairs from an experienced breeder, always realising that even then it is possible for a genuine mistake to occur. Better still, a start can be made by acquiring two complete nests of young unrelated birds and turning all out together in a flight where several nest boxes have been hung up—about twice as many boxes as there are pairs of birds. If left in these surroundings for a few weeks they will soon start pairing up on their own, when no mistake is likely.

Young birds are not usually quarrelsome. They are often very precocious, but breeding should not be permitted at this early age. They have been known to nest at only four months old in some cases.

In leaving the birds to pair off like this, they should not be hurried. Do not try to separate a pair as soon as they are seen to make half-hearted attempts at displaying or feeding each other. Although birds of the same sex seldom do this, they sometimes do it in a half-hearted manner, just to make things difficult for the poor breeder.

After a lapse of a few weeks the birds will be seen to start roosting in the boxes in pairs, and they may then be removed with the box to their own breeding flight. By selecting pairs in this manner, one can be reasonably certain that they are correctly mated with partners of their own choice.

The safest time to remove these pairs is shortly before nightfall just as the birds retire. Do not leave it until after dark or there may be a tragedy through the birds being frightened and coming off when it is too late to settle down inside their boxes once more. Watch your pair enter their box, then as quietly as possible cover the hole and take the box right away, leaving it as their nest in their new home.

Another method of marking the birds fairly easily, is to wait until pairs are using the boxes, then smear the inside of

the hole with brightly stained grease or dripping. Cochineal or blue aniline dye are both harmless and easily seen on the birds' feet and bills in the morning, when the similarly stained pairs may be caught up and separated.

The method of testing for sex by the pelvic bone as described by several experts is undoubtedly helpful, but certainly not one hundred per cent. infallible. Continued experience may enable one to rely on this test, but a lot of practice is required. Immature and untried birds are very difficult. Adult birds in breeding condition are comparatively simple. But, and again but, some males have comparatively wider gaps than others, which is misleading. Matron hens usually have really wide gaps, but these tend to close up again naturally after breeding operations end to a very varying degree.

A bird with the two bones almost touching is pretty certain to be a cock. If the space between is wide enough to lay a forefinger in, it is almost certainly a hen. The trouble is that so many varying widths exist that are intermediate according to the individual and the condition of the bird that this cannot be taken as a sure indication at all times.

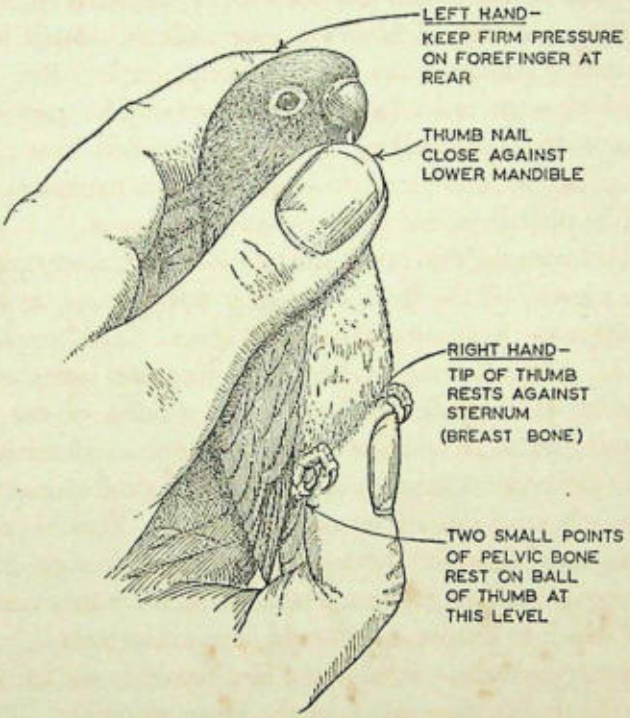
The difference is more easily detected in some species than others. Peach-faced are reasonably reliable. Masked are by far the most difficult; both sexes vary considerably, but if one example of each extreme is taken when there are a number from which to choose, one should have a true pair.

To carry out this test, hold the bird firmly in the left hand with the thumb close up under the lower mandible. This is the only safe way to hold a Lovebird. Be gentle but firm—very firm—for if the Lovebird anticipates your move and takes first hold it will not be gentle and it will be rather more than firm. Place the ball of the right thumb on the keel or breast bone and carefully slide it down towards the vent.

When the thumb reaches the end of this bone a soft area

will be felt which must not be subjected to pressure unduly. The tip of the thumb now rests against the lower end of the breast bone and in the ball of the thumb two small bones can be noticed. In some cases these may at first feel like one small point, the subject is then a cock.

In males, these bones are seldom more than $\frac{1}{8}$ in. apart. If these two points are wider apart the bird is most likely a



Holding a bird for the pelvic bone test.

hen; if they are so wide that it feels as if a pencil could be laid in the gap, it is almost certainly a hen. Some prefer to carry out this operation by using the forefinger, but, personally, the ball of the thumb is more sensitive and definite in use.

There are instruments on the market for poultry breeders which are used to sex day-old chicks by internal visual

inspection. There would appear to be no objection to trying these on Lovebirds, but one can well imagine that testing a helpless, fluffy little day-old chick would be quite a different proposition to handling a struggling little demon with a powerful articulated mandible such as is possessed by a Lovebird.

Beginners may be disappointed with these negative notes on sexing, but it is better in the long run to face the situation as soon as possible, rather than waste two or three seasons experimenting with unsuited pairs.

There is, too, always the occasional occurrence when a true pair is sometimes selected and placed together, yet never go to nest. Masked and Fischer's often refuse to accept mates chosen for them, purely on grounds of incompatibility. They eventually prove to have been true pairs when given other partners, yet for some reason absolutely refused to make any attempt at breeding with a mate that they did not fancy.

Chapter 8

THE SICK BIRD

IN the humorous novel "Three Men in a Boat," by Jerome K. Jerome, the narrator was feeling run down, so he studied a "Home Medical Dictionary" to discover, to his horror, that the only disease to which he was not a martyr, to some degree at least, was housemaid's knee. A birdkeeper might well become victim to similar feelings and decide that all his best stock is suffering from absolutely incurable diseases if he studies too closely some of the books on this subject.

Sickness will be touched on, therefore, only lightly in an attempt to simplify the outlook from a practical rather than a scientific point of view. It is not much comfort to an aviculturist to know how to recognise the symptoms of an incurable disease, but to know how best to avoid their occurrence is of some assistance.

The first reassuring thing is that, properly managed, Lovebirds are not particularly prone to disease at all. The occasion may arise when some guidance would be appreciated, and that is all these notes set out to attempt.

The next point is that diagnosis with a sick bird is very difficult since few veterinary practitioners study the subject. The important thing to remember is that whatever the disease may be, treatment is nearly always the same with birds. That simplifies matters considerably and reduces possibility of error. Whenever a bird is ill, there is no need to panic. The only thing that can be done is to catch it up and place it in heat. It is always better to make a mistake,

on the safe side, by bringing in a doubtful case, than to pick the victim up later on, dead.

Heat is the undoubted panacea of all birdkeepers. It is practically the only cure for any disease that can be cured, plus a little common sense. Lovebirds can stand a great deal of heat. The ideal is between 85 and 90 degrees, but they can withstand much higher temperatures, provided they have access to plenty of fresh air.

The importance of this has already been mentioned when speaking of hospital cages, but the use of a drying cage as a hospital cage is strongly condemned. Lovebirds do not like to feel enclosed in a stuffy, stagnant atmosphere; it does more harm than good. Bringing a bird into the kitchen close to the boiler—the procedure most people seem to think fits the situation—is worse than useless. It will most likely hasten the patient's departure. A high, even temperature with plenty of fresh air is essential.

Plenty of heat will soon make the bird thirsty. It will then start drinking and so may be made to take medicines or tonics naturally, without the need of forcing them down the throat. Compulsory dosing should be resorted to only when a bird is so ill that it does not bother to fight back. The use of force with a Parrot-like bird is more likely to do harm through shock and exhaustion than letting things take their course.

If a bird is below normal, it is either (*a*) obviously very ill, (*b*) apparently well except that it does not fly properly, or (*c*) the most difficult of all, just off colour, apathetic, inclined to tuck its head down; in fact, really doubtfully ill or just trying out its owner's powers of observation.

In any case it calls for inspection, and the bird should be caught up. Types (*a*) and (*b*) cause no trouble in this respect. Before putting the bird in heat, especially case (*c*) types, examine it as follows.

1. Look carefully for any external injury to limbs, bruises

on the top of the head; also external parasites such as mites, ticks or even lice. Make sure that its respiratory system is functioning regularly and without strain.

2. Next inspect the general body condition and the state of the crop. Is the body too fat, in good shape, or thin? Is the crop full or empty?

3. Finally examine the vent. This should at once indicate if it is simply a matter of egg-binding, which would in any case probably be anticipated. But the state of the excreta must also be noted.

If the answer to part one of this examination lies in any item other than the last—respiratory—there is no need to apply heat. If the trouble is to do with the breathing, heat will be necessary, but in most cases, once a bird starts to gasp, or a faint regular click is heard, it is too late to save it.

The second part of the examination will indicate whether the trouble is chronic or acute. If the bird appears to be in good healthy body condition, the trouble must be of recent occurrence. Inspection of the crop will tell whether the patient has been feeding recently; a full crop usually means that the illness is sudden.

If the bird is fat, the trouble is probably due to over-indulgence or laziness, which has made the bird put on weight. This has more than likely caused some of its vital internal organs to function improperly, the liver, kidney or heart being the most vulnerable. If, on the other hand, the bird is thin, the trouble may be caused by internal parasites affecting the internal organs, or it may be very simply, that the bird is being kept away from the seed dish by a bullying partner or other companion. The crop condition will help to answer that point.

The third part of the examination will give some idea as to whether the cause is gastric or not. If the droppings are normal—black and white and not too liquid—the trouble is

not likely to be serious. A caked vent or brownish-red stains indicate internal trouble, probably from some form of parasite. Liquid or greenish droppings are present when enteritis due to chill, or eating stale foods, is the cause.

Most of these diseases mentioned will not be likely to attack Lovebirds in a well-managed collection. However, it will generally be admitted that in those cases where it does occur, mismanagement must have had some contributory part in permitting this to happen.

Egg Binding. This is most difficult to detect with some Lovebirds, who, unlike most Parrots, retire to their boxes and give their owner no chance to see that they are unwell. He probably thinks they are starting to sit. It should not occur where birds are given all that should be necessary to ensure they are thoroughly fit, and are only encouraged to breed in the favourable seasons. Some birds will not co-operate in this matter, and then the trouble occurs.

The only treatment required is to place the affected hen in heat at once, with plenty of sand or peat mould on the floor. The egg will usually be laid within twelve hours. Often in an hour. Sometimes, however, a hen will quickly regain her sleek appearance and still not pass an egg for forty-eight hours or even longer. In such rather rare cases, she is possibly trying to hold out until she is back in her nest.

If she has not laid, on no account should a hen that has been egg bound be put back for a week at least, even if she appears quite normal. The egg may be laid and broken and lost on the floor. If she does lay her egg quickly, she should be put back only if outside conditions are favourable. It is safer to rest her for a fortnight and sacrifice the clutch, rather than lose a valuable hen. If a repetition of egg binding takes place, it seems to get progressively worse.

Such drastic remedies as manipulation and massage are out

of the question with a Lovebird, however successful it may be with a Canary or other domesticated species. Neither is the practice of inserting olive oil on a camel-hair brush into the vent of much practical use. Sometimes egg binding is simply due to muscular cramp; at others the egg is stuck to the lining of the duct. In the latter case the egg is seldom passed successfully.

Injury or Wounds. There is not a great deal that can be done for an injured Lovebird, beyond leaving nature to take its course. Splints or bandages cannot be applied, as the bird will immediately tear them off. Dressing with antiseptic ointments and cleaning is all that can be done.

Conjunctivitis. This may be eye disease, or injury to the eye. The usual root cause of conjunctivitis is vitamin A deficiency. The eye sometimes runs slightly, or is partly closed, swollen and inflamed. At one time this was a most troublesome disease with certain Parrot-like birds, very contagious and often fatal.

It responds to treatment quite readily with either penicillin or chloromycetin eye ointment administered direct to the eye twice daily. Sometimes the infection is resistant to one of the two remedies mentioned. If the eye does not show improvement in two days, the other ointment should be tried at once. Lovebirds do not as a rule suffer from conjunctivitis, but it is sometimes the result of fighting.

External Parasites. These are seldom found in Lovebirds. Scaly leg, or scaly face, are both a form of mange that is easily cured by the application of one of the proprietary preparations available. These are usually made from a benzyl benzoate basis. Scaly leg also yields to paraffin and sulphur treatment.

Other parasites such as lice, fleas, ticks or mites again, are seldom met with. D.D.T. powder may be rubbed into the plumage and then dusted out, and this usually removes the pests. Provided it does not exceed $7\frac{1}{2}$ per cent. strength, no ill effect has ever been experienced. Ticks are rare, but have been known to attack birds. They should not be pulled off by force, as they often leave part of their attaching nippers behind which may turn septic. They are easily moved by touching with a red-hot needle or a small soldering iron. Dab with disinfectant afterwards.

Disorders of Internal Organs. These are usually caused by incorrect feeding or housing, or more likely through internal parasites. If a bird suffers from repeated chills—which it may not show very clearly—it is quite possible that it will set up inflammation of the liver or kidney.

If their excreta is examined regularly, such cases may be suspected in time to prevent any serious trouble, by catching these birds up and resting them thoroughly. It is very difficult to diagnose any such illness until it is too late.

Coccidiosis. This is one of the best-known diseases, at one time considered very common, almost invariably fatal and incurable. Some post-mortem examiners do not believe that it is nearly so prevalent in aviary birds as has been suggested. There are other internal parasites that cause just as much trouble, but are less often met with. In any case, coccidiosis has received a great deal of research in the poultry world and may simply be cured by the use of sulpha drugs.

To begin with, some breeders seem to be under the impression that it is something to be ashamed of to have a bird die of this disease. In fact, so many wild birds carry the disease and are probably immune to it, that it can and will appear in any aviary where a sparrow or starling can perch

on top. There is, therefore, no disgrace attaching to an outbreak, and with ordinary care today it can be controlled and cured.

The cycle of the coccidia's life is roughly that it starts as an egg dropping from an infected bird to the ground. It must pass some time in the ground where it takes on another stage of development. Once more it is then picked up by another host. A further change inside this bird takes place, before the germ becomes dangerous and capable of killing. This very brief explanation should make it clear that it is not a disease that careful management alone can prevent ever from reaching the stock.

It is no use periodically dosing one's birds with sulpha drugs as a preventive. The drug has to attack the coccidia, not the bird, so that repeated dosing when there are no coccidia actually present is not only waste of the drug, but it may enable them to work up a resistance to its effect. Only dose the birds when it is believed that coccidiosis is present among them.

Dosing should be done for a period of five days—birds must be brought in to do this—as it is essential that they do not have access to any other drinking source, or the concentration of the drug will be upset. One dose may well complete a cure. If one is still doubtful and the patient does not pick up, after resting the bird for ten days, a further five days' treatment may be given. The drug is obtainable as a 16 per cent. sodium solution ready for dilution. The best-known form in this country is Sulphamezathine as marketed by Imperial Chemicals (Pharmaceuticals) Ltd.

Enteritis. This is the only other internal disease which the average birdkeeper has much hope of diagnosing or curing. It is indicated by loose or liquid droppings, often discoloured green. Heat alone will generally effect a cure, but it is well

to dose the bird with syrup of buckthorn or a similar mild aperient to clear the bowels.

Buckthorn is particularly good for this purpose and also has a warm, soothing effect. It also is useful when a bird is constipated. Do not give any greenfood or apple until the bird is seen to be well on the way to recovery.

Polyneuritis. This is the term applied to nervous disorders where paralysis of the wings or legs occurs. It is generally due to more complicated internal troubles. Treatment for coccidiosis has often helped in this matter. If a bird is carefully nursed when paralysed it often makes a complete recovery. Possibly sulpha drugs may remove the original cause of the nervous disorder and thus assist in a cure.

Pneumonia, Bronchial or other Respiratory Troubles. These are immediately apparent by the bird's laboured breathing. Pneumonia has almost invariably proved fatal, but recently treatment with aureomycin has effected some cures. The only doubtful point has been whether the bird really was suffering from pneumonia.

Some birds, when affected, do not look terribly distressed and do not sit hunched up with both feet down on the perch and the head under the wing. They seem to be leaning forward, with the wings slightly extended, for all the world as though they were listening intently to something. When they are noticed to start panting it is generally too late to act.

Aureomycin is now obtainable in soluble form and may be administered in the water, always provided the bird will drink. Do not attempt to administer dry aureomycin orally. The patient invariably dies with convulsions in under a minute.

Mycosis is another disease usually noticed through laboured breathing. The cause is mould or fungus growth in the

bird's lungs or air passages. It includes *aspergillosis*. There is no satisfactory cure known for this as yet, although many methods are being tried. The cause is purely neglect in allowing the spores to develop in stale food, refuse, etc., where conditions are damp. The remedy, therefore, lies with the birdkeeper in prevention only, care being taken to avoid the conditions that lead to it.

In giving these few very brief notes, which are intended only to guide a complete novice in the best way to act, reference has been made to some drugs that will require veterinary prescriptions to procure. Most veterinary practitioners do not profess to know much about bird diseases, but if only birdkeepers will consult them when in trouble, and give them some indication of what they believe is the cause of the trouble, the majority immediately recognise the common sense of a good case and are nearly always only too glad to help. Of course a "vet" cannot give prescriptions unless he really believes that they will be of use. It is really up to the birdkeeper to convince him, without creating the impression that he knows more about it than the specialist himself.

Quarantine and Acclimatising. It is always wise to quarantine any new addition to a collection. Where the bird is aviary bred and in good condition, a few days may be sufficient. But diseases often take two or three weeks to develop. Where there is the slightest doubt, a new arrival should be isolated from all other birds, until one is completely satisfied. Preferably it should not be in the same room.

Under present conditions, fresh importations are not likely to be very frequent, but particular care must be taken with any imported bird. It has had to undergo a very trying time on the voyage, although air transport has improved this enormously, by the great saving in time. But a bird

must become accustomed to an entirely new climate by degrees.

It cannot be called acclimatised after a few weeks' rest. It requires at least six months to a year, during which time the bird moults out in its new environment, before it is properly acclimatised, and until that has taken place it is not wise to try and winter them outdoors. Their first winter here should be spent indoors, anyhow.

It stands to reason that restrictions on import—with all the consequent extra work and red tape—are not put on just for amusement. Those responsible must have genuine fears that, without these controls, serious consequences to health, either to animal livestock or humans themselves, may well occur. The original scare was with regard to the disease found in some Parrots and believed to be transmutable to humans.

This unfortunate association with Parrot-like birds became permanent when the disease was named psittacosis. Later it was discovered that many other species of birds could carry the disease and the name was altered to "ornithosis" in an attempt to be fair. However, in the scientific world, once a name has been given, it must remain permanent under international rules, so the apparent guilt is fastened on the poor old Parrot, and will probably always remain so as a result of its name.

Psittacosis, by the way, is not now a disease that is always certainly fatal. Modern drugs and medical skill can combat the disease if transmitted to human beings with comparative ease. Little is still known about it. It is believed to lie dormant in many birds with no ill effect, and in a perfectly harmless state. A severe strain on the bird's system will, however, awaken this virus and it can start an epidemic that can spread rapidly. Hence the strain of importation may be the final factor.

It can be proved to be present only by blood tests or other

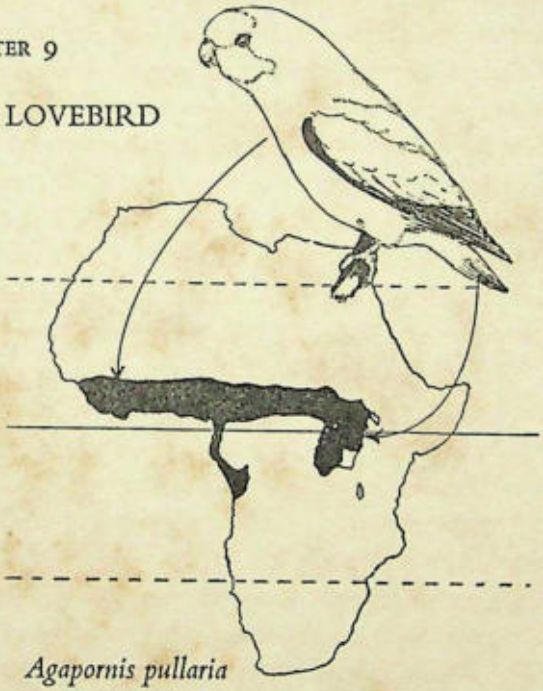
(From a drawing by E. N. T. Vane)

Lovebirds: 1, Fischer's. 2, Masked. 3, Black-cheeked. 4, Nyasa. 5, Blue Masked. 6, Lutino Nyasa.

microscopic examination, but birds that have been found to be suffering from it when post mortemed, usually show signs of mycotic affection, which means that they usually die by gasping for breath due to some impediment set up by growth in the bronchial passages. In human beings, the symptoms are often mistaken for pneumonia at first. If you do import any birds, be sure they are shipped properly and never mix them for several weeks with your own healthy stock.

CHAPTER 9

RED-FACED LOVEBIRD



Agapornis pullaria

TWO sub-specific races are listed in Peters' Check List, but the names have been revised since 1937 as follows:

1. *Agapornis pullaria pullaria* (Linné). West Abyssinia (Omo R.), Uganda and Ruanda region between 1,500 to 4,500 feet as far as the higher altitude west of the lakes Albert, Edward, Kivu, etc.

2. *Agapornis pullaria guineensis* (Müller). West Africa from Sierra Leone, south to North Angola, right across Central Africa as far as the Lake Albert.

Thus *pullaria* is now regarded as the East African type and *guineensis* as the West African. It is safer, therefore, to use the name Red-faced Lovebird instead of West African

or any of the other names that have from time to time been applied to this bird such as Guinea Parrot, etc. The type most frequently available here is *guineensis*, which only differs from *pullaria* in being deeper blue on the rump.

Description:—Cock: Bright green, more yellowish in front and beneath. Face and crown orange-red. A small ring of minute whitish to blue feathers round the eye (variable). Rump bright blue. Flights green with dusky inner webs. Bend of wing, shoulder and underwing coverts black. Edge of wing bluish. Tail green with sub-terminal band of black including the two central feathers, red above this bar, concealed when closed. Bill red. Feet grey. Iris brown. Length 6 in.

Hen: Red areas less bright and more orange. Rump paler blue. Underwing coverts green and edge of wing yellowish.

Immature: Like the hen but the red parts are even paler and more restricted. The wing coverts, however, still differ enough to distinguish sex.

This bird favours wooded territory where grass is found in parts. Such conditions not being found close to the coast it is more an inland species; it does not inhabit dense forest. However, it is found over a very extensive area and occasionally meets other species of the genus and possibly overlaps slightly in places. It is dependent on trees for its unusual nesting sites. It is equally dependent on open grass areas as it is reported to feed mainly on these seeds, and also the seeds of certain fig-like trees.

Unlike any other Lovebird they select the nest of an arboreal ant or termite as their own nesting site. This may be the reason why they have proved so reluctant to breed in captivity, of which more anon. When this habit was first mentioned, many imagined that the well-known equatorial termite hill on the ground was involved, but although this may happen on less frequent occasions, these ant nests are situated up in

a tree, sometimes as much as 40 ft. from the ground, and are said to be of an earthy nature.

How the birds come to some amicable arrangement with these remarkably vicious insects is a problem still unsolved. A similar arrangement is sometimes encountered in South America with a species of Conure. Some observers have suggested that the ants' nests were deserted, but several more recent reports state that when African boys have been sent up to retrieve the birds' eggs for examination they have had to give up the task owing to the cruel biting they suffered from the inhabiting ants.

Apparently the birds excavate the holes themselves, the hens being mainly responsible though both sexes may help. The explanation as to why the ants allow this liberty is yet to be found. Young callow nestlings would appear to be a tasty morsel to these insects.

There is no difficulty in sexing Red-faced Lovebirds. When an extra bright hen or a less brilliant cock may make it less obvious, the underwing coverts will remove any doubt; the point can usually be noticed quite easily by looking at the wing butt.

They are one of the species that have a characteristic small eye-ring of tiny feathers. These are somewhat variable in individuals and not at all similar to the bare eye-ring of the other species. Sometimes these feathers are whitish or yellowish and are more restricted in the hens; in fact, hardly noticeable. In flight, these birds are extremely beautiful when the bright red and black of the tail feathers are visible.

So far as is known definitely, they do not line their nesting cavity. The tunnel is made with a small chamber at the end. Some observers say that there is a small pad of material under the eggs, others that the eggs are laid in the chamber on a base only of excavated material. This rather leaves the debated point as to how they carry material as a matter of

secondary importance; it hardly seems necessary to carry it at all if it is not used.

When first hatched the young are covered with white down, the beak and feet are also white. By the time they leave the nest their plumage resembles that of the hen with the red areas paler and less extensive and the general colour is rather more yellowish. They have been seen begging to be fed by their parents shortly afterwards by opening the bill, throwing back the head and quivering the wings as so many young birds do.

This was certainly the first Lovebird to be imported and, although it was first described scientifically some two hundred years ago, its first appearance seems lost in antiquity as Lord Tavistock (later Duke of Bedford) says in his book that it figured as a lady's pet in portraits painted in the sixteenth century.

When first imported they frequently arrive pinioned and probably permanently disabled. They are most difficult subjects to acclimatise, being of an exceedingly timid and nervous disposition. This trait may be one reason for pinioning them so that they will realise they cannot escape by flight and will learn not to dash madly about every time anyone approaches, thus causing further injury to themselves in their panic. If the birds habitually raid native crops, this may be the reason so many of them are so ruthlessly trapped and shipped out of the way rather than killed outright, though the latter might well be more humane if not so profitable.

Coming from equatorial Africa they are not accustomed to great variation in temperature, either from day to night or season to season. They are, even more than Madagascars, easily frightened and losses among them even when in small cages can be very serious in proportion to their numbers. Shock appears to regenerate some latent disease that causes them to die to such an extent as to indicate a virulent epidemic

from symptoms indicating either cerebral haemorrhage or even pneumonia.

Birds are sometimes picked up dead from the floor of the cage with no apparent external injury, or they may start to pant heavily and without any slow sickening signs of incipient illness. Once a bird starts this panting it never recovers and dies in a few hours as a rule, though some more robust specimens appear able to linger for some days. The importance of careful handling, or better the avoidance of any direct handling if possible, cannot be too strongly stressed, even when dealing with thoroughly acclimatised birds.

They were at one time usually brought over on paddy rice. The only food they seem to take on arrival is small brown millet. These small seeds, such as pannicum, sesame and sorghum, do not contain a balanced diet entirely suitable to maintain a bird in robust health. Sprouting the seed will increase its active vitamin property, but this has not been found satisfactory by some, as the birds are inclined to overindulge with detrimental results.

Individuals will take a little apple. One of the best tonics for these birds is nectar, containing vitamins A, D and some of the B complex, as supplied to Softbills. The last can be supplied in the form of brown bread as recommended elsewhere; most Red-faced will take to this with patience. They do not appear to take any interest in the dried figs obtainable here in spite of their addiction to fruits of this nature at liberty.

Soft sweet apple or pear should be persevered with. Millet sprays will usually be the mainstay. Wild greenfood is usually ignored, but they will eat fresh Rye grass seed if stripped off the stems; when supplied in a bundle they do not consider it worth their attention. Efforts to encourage the use of canary should never be given up.

There is still a considerable amount of research to be done

to make this bird a sturdy aviary inmate, though once acclimatised they become entirely hardy and probably even do better if left out all the year round. The difficulty is to build them up into such virile specimens that they are capable of such spartan living, as by so doing the risk of annual catching up is overcome.

In the opinion of many, they are the prettiest of the whole group. Quiet in habits once steadied down—in fact, they are sometimes accused of lethargy—their voices are quite inoffensive. They frequently climb or walk in preference to flight. It must never be tried to winter them outdoors for their first season over here, for they are birds that take an exceptionally long period to acclimatise. The late Duke of Bedford wintered them out of doors the whole year round, but no attempt at breeding was ever made under these conditions.

In more recent years, many efforts have been made to create artificial tree termitaries to awaken the breeding instinct. Past records of nesting attempts exist, even to the extent of hatching and almost rearing young to the stage of fledging. Budgerigar boxes were often used, and it may be no more than a coincidence that on at least two such occasions the site chosen was a coconut husk. These were, of course, almost universally employed for Budgerigars in early days, and perhaps the Lovebirds saw some resemblance in appearance of this bulky fibrous container that reminded them of a termitary in the tree of an African savanna.

The only fully authentic and carefully recorded breeding record is given by Mr. A. A. Prestwich in the *Avicultural Magazine* for January, 1957, with a very fine coloured plate. His persistence and determination over a number of years in studying this difficult subject is a lesson to all aviculturists, especially as he eventually achieved his goal. He found that they throve as a self-contained colony with precautions to

ensure privacy and avoidance of sudden fright so far as was humanly possible to arrange. A description of his flight has been given elsewhere in this book.

Among the many interesting discoveries he made, was that the most acceptable and satisfactory type of nest was a small barrel about 14 in. × 12 in. tightly rammed with wet peat mould and then allowed to dry out hard. These were suspended on their sides with the bottom of the barrel against the side of the flight, the top being partly covered with timber to prevent the peat falling out as it was used, the upper part being left open for the birds to gain access.

Several pairs made tunnels which ascended into a chamber about the size of a large orange and laid eggs; more than one certainly hatched young. One was eventually fully reared and gained the long sought medal for the first breeding in captivity. Strangely enough, no nesting material was found in these chambers when opened at the end of the season. The excavation was shared by both sexes though the hens did most of it.

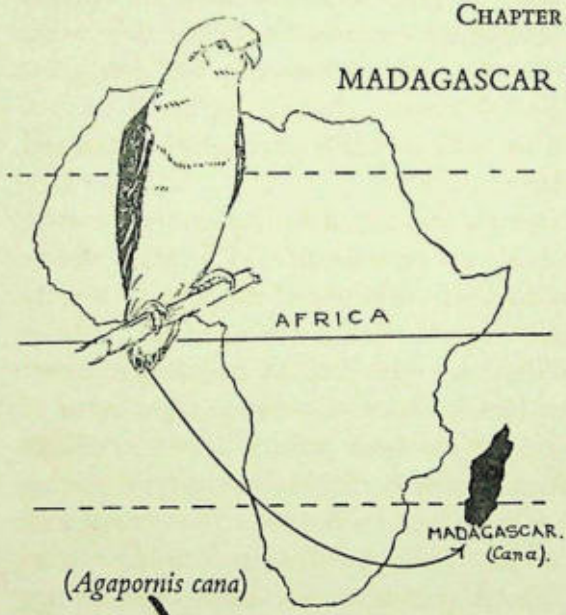
At least two other pieces of information were added to general knowledge of these birds, points which probably could be discovered only by an aviculturist. Regardless of sex, the birds often sat about in couples, not mated pairs, two males or two females would partake of a siesta side by side. They seldom resorted to the ground, which is rather surprising for a species that naturally are grass seedeaters.

Of particular interest to scientists may be the observation that they habitually roosted, not in a thickly walled peat box, but suspended inverted from the aviary roof after the manner of the *Loriculus* genus of Hanging Parrot from Asia. The Lovebirds also have another affinity to these birds in that they are one of the very few genera that line their nests and also have the unusual habit of carrying materials for this purpose tucked in the rump feathers.

Finally, although so nervous a bird is hardly a suitable subject for exhibition, individuals occur that settle down into very steady birds, when they make excellent showmen, seldom failing to reach top places in the cards. Particularly are they likely to achieve this well-deserved success if the judge is aware of the attendant difficulties and risks run in staging these attractive exhibits.

Chapter 10

MADAGASCAR LOVEBIRD



IN Peters' Check List of the Birds of the World, 1937, two sub-species of *Agapornis cana* are recognised:

1. *Agapornis cana cana* (Gmelin). Madagascar (except south-western and central plateau). Introduced into Mauritius, Cormoro Islands, and Zanzibar and Mafia off the east coast of Africa.

2. *Agapornis cana ablectanea* (Bangs). Confined to the arid south-western portion of Madagascar.

The latter only differs in having a purer grey tone in those areas where the normal race are grey, and a slightly darker shade of green.

Description (*cana*): Cock: Whole of head, back of neck

and breast pearl grey, slightly tinted yellow at base of feathers, noticeably in the cheek. Body colour green, darker on the back and wings, paler on the rump, and upper tail coverts. Flight feathers blackish; underwing coverts black. Lower breast and abdomen pale green as are the undertail coverts. Tail green with a black sub-terminal band extending to the central feathers as well. Bill whitish-grey, feet pale grey. Iris light brown to dark brown. Length 5–6 in.

Hen: Differs from male in being green on the head and having green underwing coverts.

Immature: Resemble parents according to sex, but in captivity the sex is always determinable. Cocks are said to be greener on the back of the head and the bills are slightly darker. The underwing coverts differ as in adults.

Coming from the large island of Madagascar, it is not surprising that this bird is somewhat different from others in the genus. Very little has been written about its life at liberty. They are encountered in flocks sometimes numbering up to a hundred or more, and are reputed to do considerable damage to rice crops. Their diet consists mainly of grass seeds and they inhabit deciduous woodland areas on the verge of forest land, not being found in deep forest. Their flight is strong, rapid and direct.

They nest in holes, and are one of the species that use a "pad" as a cradle for their clutch of four to six white eggs. The hen alone is responsible for all serious nest building, which is carried out by tucking strips of leaves, after cutting them to the desired size, into the feathers of the rump.

Once a clutch is laid the hen does all the incubation, being fed in the nest hole by her mate. The nest chamber is not lined all round with materials.

When young are hatched they are covered with white down, and as they develop they are reported to resemble the hen contrary to aviculturists' observations who find young

males have grey markings on the head from the time they leave the nest.

There is no eye-ring in this species, either of feathers or bare skin. The bill is the smallest of the whole genus.

At one time this was the commonest of all species and was often available for a few shillings a pair, which is not difficult to understand if they are a menace to the most important food crop. They were imported in thousands, generally with badly clipped wing flights and half denuded of the rest of their plumage. That was a long time ago, the first recorded importation being about one hundred years ago. Today they are hard to obtain and have proved reluctant breeders on the whole, in spite of early reputations of being free breeders.

Freshly imported specimens have always been very difficult to acclimatise or even accustom to life in captivity. This may have been accounted for in bygone days when a long and arduous journey started their new life, but today the means of transport are much more rapid and one would expect a considerable improvement in results. The fact remains that, although new arrivals do not have to suffer the hardships of a prolonged voyage and actually reach their destination in apparently good condition, they still retain a most persistent ability to die.

They retain the trait of being difficult to acclimatise and it would appear that they are really not suited to close confinement and do better in an outdoor aviary, provided it is summer time. On the whole, therefore, they are not really worth the trouble of obtaining import permits, while much more satisfactory species can be more easily come by. Beginners are advised to leave these to the more experienced aviculturist who feels that he is ready to accept the challenge this bird offers by its drawbacks, to persuade them to breed in spite of themselves and eventually establish a strain, a feat

so far not achieved as far as can be gathered from past records.

It should not be accepted that these are "impossible" aviary subjects. With modern dietetic research and continued effort there is no reason why some future discovery may not yet make them much more ready to multiply in captivity.

There is no doubt that they have been frequently bred, although comparatively rarely in proportion to the numbers imported in the past. Data with regard to the development of the fledglings or the possible foundation of a strain is sadly lacking; one can only assume that no such experiment has been prolonged far enough. The late Duke of Bedford bred them at liberty in this country, but found that they were not able to winter successfully under controlled liberty conditions and the young were susceptible to lung trouble.

One record at least of successful cage breeding comes from Denmark, where a pair reared as many as seven in one season in a 4 ft. cage. This particular breeder was very fortunate in having a flair for persuading many species of birds to breed well in cages.

They are definitely happier in an outdoor flight rather than a cage. Maybe at liberty the sexes show remarkable affection for each other, but in captivity the hen, at least, more usually behaves in a very different fashion. One lady once described her hen as "petulant, exacting and impatient," always nagging her husband. Coming from one of the same sex this may be taken as fairly honest and unprejudiced.

They are timid and intractable. When approached, they invariably crouch down in one corner and scold incessantly. When handled, they sometimes roll over on their backs and use their feet as well as their bills with which to repel any interference. Should they gain the first hold, in spite of having the smallest bill of all of the Lovebirds, they can bite with painful eagerness and very deeply.

Like all Lovebirds they take material into the nest box,

but only sufficient to form a pad for the eggs; the whole of the chamber is not lined. These observations are repeated, as the information has been supplied mainly from avicultural experience. In captivity, nesting procedure follows the details given above. The hen usually disappears almost completely, being fed in the box by the cock.

At this time it is strongly advised that Madagascars should be left entirely alone in view of their extremely nervous disposition; they definitely resent inspection as a rule. Most successes recorded, have been when no interference was attempted. The cock, too, is very careful to feed his hen when no one is observing him.

The clutch is usually four to six eggs and they take about eighteen days to hatch. The young leave the nest when about five weeks old, there sometimes being a considerable interval between the first to leave and the last, caused, of course, by the fact that the hen starts incubation on the second or third egg.

When the young fledge, the cock takes over most of the feeding duties. He is sometimes inclined to be more partial to his daughters and drive the young cocks about their business too soon. As at first the whole family retire to the nest box at night to roost, arrangements should be made for an additional box for a dormitory. It is well to remove the young as soon as they are independent. It is not safe to leave birds of the year out for the winter anyhow. Indeed, it is safer to bring all Madagascars into as roomy a flight as possible and provide sheltered and well ventilated winter quarters. Young aviary bred birds are every bit as wild and timid when caged up as any imported birds, if not more so.

Some Madagascars live almost entirely on small brown millet or pannicum. They are partial to millet sprays and exceedingly fond of seeding grasses, particularly rye grass. Canary and white millet should be persevered with until

they do take it. Hemp should only be given very sparingly, with a slight increase when breeding, if they take it. Sunflower is not taken as a rule, and in any case is too large for this small bird.

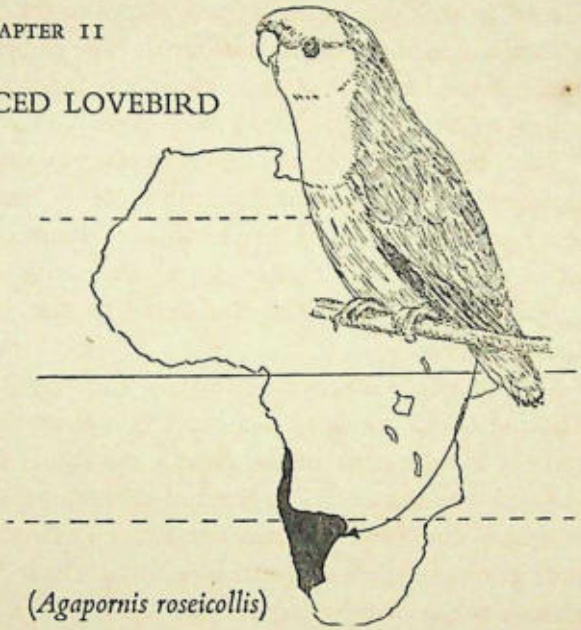
In spite of their gregarious habit in nature, colony breeding is not recommended as they are spiteful and dangerous companions for any bird approaching anything near their own size.

On at least two occasions have claims been made that a hybrid Madagascar × Budgerigar has been reared, but these records are at least suspect and hard to believe; in fact, almost lost as a legend.

As a show bird the Madagascar should do well in view of his striking appearance and ease of sexing. The difficulty is to train these birds to stand for the judge, instead of instinctively scuttling to the bottom of the cage.

CHAPTER 11

PEACH-FACED LOVEBIRD



(*Agapornis roseicollis*)

ONLY one sub-species was contained in Peters' list, but another was recognised in 1955, though it was first discovered in 1905 or thereabouts.

1. *Agapornis roseicollis roseicollis* (Vieillot).
2. *Agapornis roseicollis catumbella* (Hall).

Description (*roseicollis*): Male and female alike. Bright almond green, yellower on underside. Frontal band deep rose-red. Lores, sides of head and throat paler rose-red. Rump and upper tail coverts brilliant blue. Flight feathers darkish green to blackish, underwing coverts green with bluish tinge. Central tail feathers green without a bar, lateral tail feathers orange-red towards base, then green, then

a black incomplete bar. Iris brown. Bill whitish, green towards tip. Feet greenish-grey. Length 6 in.

Immature: On leaving the nest young birds differ from the parents in that the areas that will subsequently become pink are a dull greenish hue at this stage. The upper part of the upper mandible is blackish. This soon fades and the pink colour comes through shortly afterwards.

The pink areas in the Peach-faced are not sharply defined against the green, but imperceptibly merge into each other in a narrow margin. There is no eye ornamentation at all, either as bare skin or feather decoration in this species.

Habitat: Southern Angola, south to the banks of the Orange River.

The *catumbella* differs from *roseicollis* in brighter colouring. The red of the forehead and brow is slightly deeper in tone and the salmon pink of the cheeks and throat more heavily suffused with scarlet. The green of the mantle and underparts is deeper and brighter, and the rump is frequently deeper and purer blue, less green-blue. Iris dark brown. Bill pinkish white with greenish tips. Skins were exhibited by Mrs. Hall to the British Ornithologists Club in 1955.

Habitat: Benguella district, Angola.

In 1946 Boetticher suggested that *roseicollis* merited sub-generic rank, and named it "*Amoravis*." This does not appear to have been accepted by subsequent writers, and scientists still refer to the species as *Agapornis roseicollis*.

The Peach-faced is usually encountered in small flocks up to ten or so in number in dry country of deciduous woodland character, but is seldom far from water and has been recommended to travellers as a good water guide. Its territory extends below the tropic of Capricorn and it is the only Lovebird that can claim this distinction. It lives at varying altitudes from sea level up to 5,000 ft. and is therefore more accustomed to temperature variation than others.

Their flight is usually direct, rapid, and has been described as "partridge-like" as they often conclude a trip with a vol-planing glide. During flight they often utter their characteristic shrill call. Their food consists mainly of large seeds and berries. For nesting sites they are reported to use the nests of the Sociable Weaver and similar allied species. Some say that they nest alongside the Weavers, others that they drive the Weavers out or take over abandoned nests—these are huge community affairs. Crevices in rocks and holes are used indiscriminately, even nooks in man-built structures.

This species was probably the first to be observed carrying the nesting material tucked into the feathers of the rump. Both sexes have been seen to engage in this task, and both sexes have a peculiarity of feather construction which consists of a brush-like tip turning inwards like a tiny hook. This may be to assist in carrying nesting material, but is more likely only an aid to closer interlocking of the feathers with the layer underneath. Such feather detail is found in other genera of Parrot-like birds that do not carry any materials to line their nests.

The fact remains that comparatively little authenticated detail on nesting habits in nature is published. The clutch is given as normally, four to five eggs laid on alternate days, incubated by the hen, starting with the second egg, and she is fed by her mate during this process. It is quite probable that all these details are supplied by aviculturists. Young are covered with orange-red down at first which turns grey at about ten days old. They fledge at about five weeks of age.

According to the British Museum Catalogue, this species was first discovered in 1793 but was then assumed to be synonymous with the Red-faced, and it was not until 1817 that it was officially recognised as a valid species. The first importation record was around 1862.

On account of its very attractive and neat appearance, also its readiness to breed, the Peach-faced has earned a well-deserved popularity with aviculturists. Its drawbacks lie in its penetrating high-pitched grating call and its spiteful nature. To be fair over both these allegations, this call is very trying indoors but not really bad when out in the open.

There can be little doubt, however, about it being spiteful and rather cunning in hiding this defect. Practically all writers mention this fact, either through bitter experience or through repeating the notes of others. Sometimes a number of Peach-faced will live quite amicably together in a fairly confined space for a reasonably long period. But it is only for a time. Without warning one day, some tough character will start a " rough house " with catastrophic results, a number of mutilated bodies being gathered up afterwards.

They should definitely be kept only in pairs, and the young should be removed before adult plumage is assumed. These young may be kept in a colony for some months, but must be separated as soon as they show signs of pairing up and before they are old enough to start thinking seriously of nesting, which they do at an age far too early to permit their indulging.

As a rule they do better in aviaries than in cages. They are little larger than their congeners and require more room to exercise, though they are quite satisfied with a six-foot flight per pair. At one time they were often guilty of plucking themselves or their young in the nest, but this was probably due to after effects of wartime feeding and has not become an habitual vice. One does not encounter such cases where care is taken to ensure good feeding and management.

The main item of diet in captivity should be canary seed and millets. Sprays are always welcome. A few individuals take to sweet apple, but many will not touch them, and it is not really necessary. They do eat rather more sunflower

than others, but this and hemp should be rationed so that only about a teaspoonful per pair is available daily though the amount can be increased *ad lib* when a family is being reared.

Too much oily heating seeds can encourage plucking. What is worse, they can enable the birds to become overfat, and this is probably the cause of the not uncommon cases one hears about birds being affected with paralysis of the legs or sudden death through a fit. It is probably failure of internal organs to function properly through excess fat. Wild greenfood is the best answer to counteract these possibilities, but some birds require considerable patience to wean them on to it. Once they do start, it is amazing how much and how varied is their intake of these foods.

Under favourable conditions, Peach-faced have proved one of the most prolific species and their young are almost always excellent in quality as well. There is one record of a pair rearing twenty-four good young in fourteen months. Such uncontrolled reproduction is not to be recommended however. Clutches in captivity are sometimes as many as six or eight eggs although the normal number is four to five.

The unusual nest building habits were first observed in aviaries, and have been described by several breeders; one of the first was Mr. R. Phillips who gave the following details in 1896.

"The female flies on to a young bough of a growing tree, bites off—by passing her beak along sideways, nipping away as she goes—a strip of bark some three or four inches long, doubles it, by giving it a nip one-third of its length from one end until the two sides form an acute angle, and tucks the piece, at the angle, under one or more of the feathers of the lower back or upper tail coverts, leaving both ends sticking out.

"This performance is repeated until some half-dozen pieces have been hooked on, though the number varies according

to the time occupied in obtaining the bark; she then flies off in anxious haste to the nest. . . . When on the nest the female employs her time in passing the strips of bark backwards and forwards between her mandibles, mumbling away at them until they are beautifully soft and nice."

When caged up, his birds made only half-hearted attempts at nesting, and the hen carried material both in her beak and under the feathers. When free in a very large avaiary, only the feathers were used and the beak was kept free to enable her to climb about more easily. Very few pieces were lost in squeezing through a very small hole. Once dropped, however, they were never retrieved and used again. In this large aviary, they kept strictly to themselves.

The Peach-faced definitely works down the material to a softer and finer texture than do the eye-ring species, neither do they dome over the top of the nest to the same extent. It is more usually a cup-shaped packing, not interwoven, but relying on the sides of the nest cavity to retain it in position. Throughout the period of incubation, supplies of material should be maintained as further additions are made, and in the process the correct moisture is controlled to some extent by the birds themselves.

The hens do all the incubating, but cocks sometimes roost in or near the box. They certainly feed the young in the box as well as the hen. On more than one occasion, cocks have been known to complete the rearing of a family when the hen was lost through accident.

The difficulty of correct sexing has been mentioned. The pelvic bone test is fairly reliable and comparatively simple with the majority of Peach-faced. Another way in which they are inclined to denote their sex more readily than some, is that two hens, when placed together on their own, soon start to build nests and lay large infertile clutches. Two cocks seldom use a box together and do not build a lined

nest. The hen, in particular, seems to have a one-track mind with regard to reproduction. There should therefore not be any prolonged delay when sexes are incorrectly separated off.

In no species is the external colour more confusing. It has already been pointed out how hens are sometimes larger and brighter than cocks. One breeder noted that his birds appeared to take on a slightly brighter hue with the approach of the breeding season. The existence of a brighter sub-species also renders visual sexing pretty well of no use.

The late Duke of Bedford kept and bred them at liberty and found them good stayers, but not entirely hardy in his experience. This is contrary to most opinions and may only apply to birds left at complete liberty, having to fend for themselves. They can certainly winter outdoors without any heat in this country. They are, however, prone to the possible risk of egg binding as the hens will nest at any time of year and give no warning if they do become affected.

On one isolated occasion a hand-reared specimen belonging to Dr. M. Amsler learned to say " Naughty Joey." No other authentic case of this species learning to talk is recorded so far as the writer has been able to establish. Can a Peach-faced Lovebird learn to talk? The answer is, it has been known to happen, but do not waste time hand rearing your young in the hope that they will make charming hand tame talkers. The odds are a million to one against. They are easily hand reared, however, in emergency.

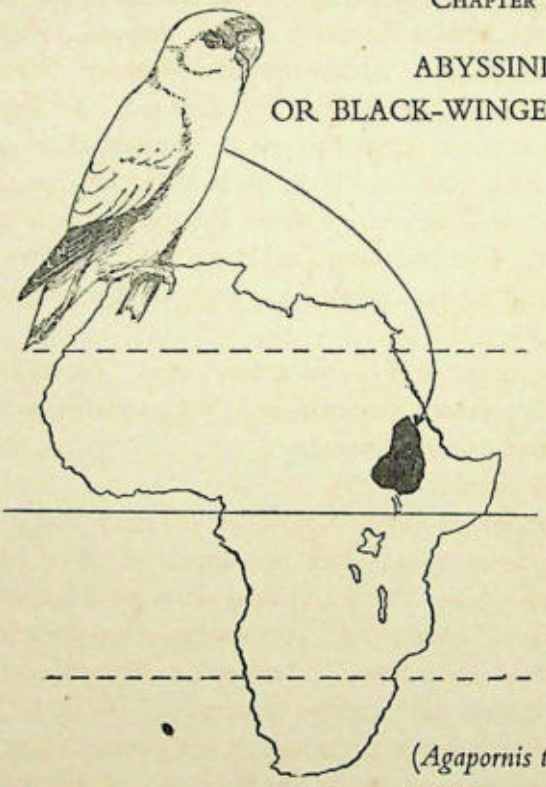
There are a few records of colour mutations. In 1942 Mr. Sidney Porter had a lutino Peach-faced sent to him, which had retained the rose-red of the head colours. He considered it was one of the loveliest birds he had ever seen in his very wide experience, but to his great distress it arrived dead, having been carelessly handled on rail. To complete his disappointment, he was offered 4s. 6d. compensation.

Other lutinos have been reported occasionally, but none appear to have reached this country.

Abnormally coloured pink birds have also occurred many years ago. One was described as being pink in the face, cardinal red in the body, brilliant blue on the rump and with brown wings. There is some possibility that such mutations may be found once more to open up a considerable field of experiment for the Lovebird breeder.

CHAPTER 12

ABYSSINIAN OR BLACK-WINGED LOVEBIRD



(*Agapornis taranta*)

TWO sub-species of this lovely variety are recognised, but they do not differ greatly.

1. *Agapornis taranta taranta* (Stanley). From southern Eritrea southwards over central and eastern Ethiopia, east to Harar and south to Lake Abaya.

2. *Agapornis taranta nana* (Neumann). South-western Ethiopia in region of the middle and lower Omo and upper Sobat. This only differs from the nominate race in having a shorter wing and smaller bill.

Description: Cock: Viridian green, rather paler on the upper tail coverts, rump and underparts, but rich in hue. Forehead, lores and a small ring of feathers round the eye carmine red, the head areas being sharply defined. Flight feathers blackish-brown, secondaries and primary coverts black; underwing coverts black. Tail green, crossed by a wide black band towards the tips, which extends to the tip of the two central feathers. Inner webs of lateral feathers yellowish towards base. Iris brown. Bill deep red, lower mandible paler. Feet blackish-grey. Length 6½ in. Sometimes the green at the back of the head and nape has a bronzy wash.

Hen: Lacks the red of the head and eye area. The underwing coverts are somewhat variable, being green in some; black, with some green, in others.

Immature: Resemble the hen.

As with the Peach-faced, Boetticher in 1946 proposed some reclassification which does not appear to have been accepted. He suggested an entirely new genus for this species which he named "*Donkorella*," presumably after the name given to the bird by natives, "Donkoro." The old name of *Agapornis taranta* is therefore retained. "Taranta" is taken from a mountain pass in the region, as a point of interest.

Very little information on the life and habits of this handsome species is recorded from field observers. It differs from other *Agapornis* in several minor respects. It is found in mountainous regions at an elevation of 6,000 to 10,000 ft. The *taranta* race is said by one writer to inhabit the plains and, incidentally, to line its nest habitually, while the *nana* race chooses more mountainous surroundings and does not line its nest.

It is thought that the territory of this Lovebird and the Red-faced may overlap slightly geographically, but if so, the two birds are likely to be separated still, by the varying

altitudes at which they live. It is said to favour high, dry, evergreen forest regions, often close to cultivated areas. It is, accordingly, quite accustomed to somewhat lower temperatures than would naturally be expected from the latitude of the tropics. The main food consists of seeds, berries and fruits, the sycamore fig being a particular favourite.

Although the two sub-species differ so slightly in external appearances, there may be other features of variation in behaviour. Most of the observations in this direction are probably due to aviculturists' findings, and there is considerable divergence of habit in this species. It is fairly certain that they nest in holes in trees, though one report credits them with the same liking for Weavers' nests that is evinced by the Peach-faced. Whether they line the nesting cavity or not, or what procedure is adopted to carry nesting material, may be matters of individual taste or possibly the ecology of the sub-species.

This varying of habit is clearly shown in the observations made by different breeders of captive birds. The Abyssinian is comparatively rare in aviaries, and the opportunity to observe their nesting peculiarities of even rarer occurrence.

It was first imported into this country in 1909 privately by Mr. Hubert Astley, who described the birds and a coloured plate appeared in the *Avicultural Magazine* in 1910. It was not bred at that time as the cock was lost through an accident. No further importations took place until about 1925–6 when several pairs came over, and two breeders achieved success almost simultaneously. Others soon followed. In one case the pair went to nest in a coconut husk; four eggs were laid, two hatched and reared, and the period of incubation was thought to be about 16 days.

The Abyssinian has been observed by some to carry the nesting material in the rump feathers; by others to carry it in the beak; by still others, to be so secretive in the operation

that it was not noticed. They have, in some instances, not made any attempt at nest construction beyond pressing the base of peat or shavings supplied by the keeper into a cup-shaped hollow to hold the eggs close together for incubation. At most they build a kind of platform or pad on which the eggs are laid, the nest chamber itself is never lined entirely, or even partly.

Incubation is all left to the hen. The cock feeds her in the nest as a rule, and also takes on the bulk of this duty as the young progress, though initially all food goes to the hen first and she passes it on to the young, according to some breeders.

Being nervous in disposition and normally resenting interference, precise rearing details are meagre and conflicting. One breeder, who made daily inspections, recorded that the young were entirely naked at first. Later, when about ten days old, they grew white down. If this is accurate, they differ from all other Lovebirds, which are covered with down of one colour or another from the start.

Captain Clarence had a pair that reared a family of four. The parents then went to nest again, and had four more on the point of fledging when a young hen from the first clutch entered the nest and murdered her young brothers and sisters, the evidence of her guilt being plastered all over her plumage. In his experience, they were prepared to go to nest all the year round. His birds, too, chewed up a considerable amount of twigs, but were never seen to carry any in.

Abyssinians are rather more partial to sweet apple than other Lovebirds. They also like sunflower and may be allowed a slightly more generous ration. Their liking for figs has been mentioned, and they will enjoy the dried figs available here as well as other fruits. Early breeders have attributed their success to such items as mealworms and gentles, which their birds took eagerly. Maybe they did in

a mixed collection, but probably they only took them because they saw other birds doing so, or just to prevent other birds from getting them. Such extras are not necessary to produce good young.

Abyssinians should not be kept in mixed collections, anyhow. They can be very spiteful, and although they are one of the quietest and slowest moving of the genus on first acquaintance, this does not mean they cannot move quickly when so inclined, as many a weaker companion has discovered to its cost.

Their call is quite soft and inoffensive, and the cock has a little twittering song. In the majority of cases they are single brooded, but some pairs are double or even treble brooded, an unpredictable trait often found in other genera of Parrot-like birds, where individuals differ considerably in this respect.

When young birds leave the nest, they resemble the hen and do not come into adult plumage until the first moult. This usually takes place at about four to nine months of age. Birds showing no trace of red at a year old, therefore, may safely be regarded as hens.

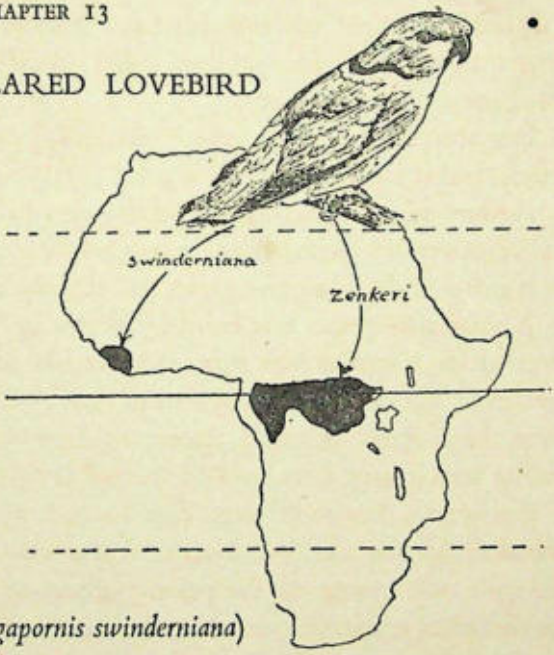
One is sometimes troubled with Abyssinians that are "pluckers." This is usually as a result of some dietetic deficiency and is most likely to occur in newly imported stock which at times in the past have come over in appalling conditions. If the vice is persisted in, with stock from which it is hoped to use for breeding, the only course is to stop any attempts at breeding from the culprits. Wild greenfood is the best remedy, and the diet should be enriched with vitamins of the B complex as well as plenty of protein without too oily a seed basis.

For some inexplicable reason, the males appear to be rather more delicate, or perhaps one should say less robust, than hens. This applies to both imported and aviary bred stock

in the personal experience of the writer. It is nearly always the cock who is picked up dead for no apparent reason in an established pair. Post mortems usually show no radical defect. However, on the whole this is a naturally healthy species well worth cultivating, if only they would be a little more co-operative in going to nest more readily.

CHAPTER 13

BLACK-COLLARED LOVEBIRD



(*Agapornis swinderniana*)

THERE are now two sub-species of this bird that are recognised:

1. *Agapornis swinderniana swinderniana* (Kuhl). Liberia. Known as Swindern's Black-collared Lovebird.

2. *Agapornis swinderniana zenkeri* (Reichenow). Cameroons, east to central part of Belgian Congo as far as Ituri and Semliki regions. Known as Zenker's or Cameroon Black-collared Lovebird.

Description (*swinderniana*): Sexes alike. Main body colour dusky green, lighter on cheeks and underparts; the throat washed yellowish. A narrow black collar on the nape,

below which is a chrome yellow area merging into the green of the back. Lower back, rump and upper tail coverts brilliant blue. Primaries blackish, green on the outer webs, primary coverts black. Underwing coverts green. Central tail feathers green, sometimes with a red-orange spot; lateral tail feathers bright red towards base, with a black bar and green tips. Iris golden yellow. Bill blackish horn. Feet dark grey. Length 5¼ in.

Immature: Duller in colour generally and lacking the black nuchal collar. The bill is paler.

Zenkeri differs in having the yellow area below the nuchal collar orange and rather more extended than in *swinderniana*. It is also a slightly brighter green and slightly larger in size.

A third sub-species was listed by Peters as "*emini*" which was to be found in the Ituri and Semliki areas. In 1939, however, this was rejected as a valid race by Chapin. However, birds from this area appear to have some distinctive habits which may later lead to further revision.

Swindern's Lovebird was first named in honour of a Swedish doctor, van Swinderen. Apparently the name was misspelt, but owing to the priority given to names as first published in scientific journals it remains Swindern's.

Although portrayed in several early works, probably from skins or museum specimens, none of these birds has ever been imported, or even kept alive for any lengthy period in captivity, and notes on their life in freedom are very scarce. Unlike any other Lovebird, they inhabit dense evergreen forest in Liberia, and also in the Cameroons and Belgian Congo, these two areas being separated by country of different character between Lagos and Accra.

Both sub-species overlap the territory of *pullaria* slightly, and have been observed sometimes feeding from the same tree. Both species do share a liking for certain figs, but they would meet only at the edges of forest regions, and are

otherwise unlike each other in their respective requirements.

Collectors have variously reported finding fig seeds, together with remains of insects and larvae in the stomachs of specimens collected. It, therefore, has highly specialised feeding habits, but it is particularly interesting to read that in the Ituri district these birds "have a predilection for the rice fields and sesame crops." They have also been reported as being shot and found to have been feeding on ripening maize cobs, which were still in the milky state.

In the *Ibis*, 1948, R. E. Moreau gives the following interesting note: ". . . in the light of information kindly obtained for me by Mr. J. M. Vrydagh from Father Hutsebout in the Congo, who must be one of the exceedingly few people ever to have *swinderniana* in captivity. Father Hutsebout states that he has never been able to keep them alive except when he is able to supply them with wild figs. He has tried mixing these fruits with eleusine grain (a small millet), to accustom them to it, but with complete lack of success; and they will not touch local grass seed. They will bite at palm nuts, and ground nuts, but deprived of figs, they die in three or four days.

"They do not, however, eat the figs in the same way as other frugivorous birds. They pluck the fruit and only extract the seeds to eat. Hence it appears that this *Agapornis* is a seedeater of a peculiarly specialised type and that it could not exist outside an area of evergreen forest where figs are perpetually available."

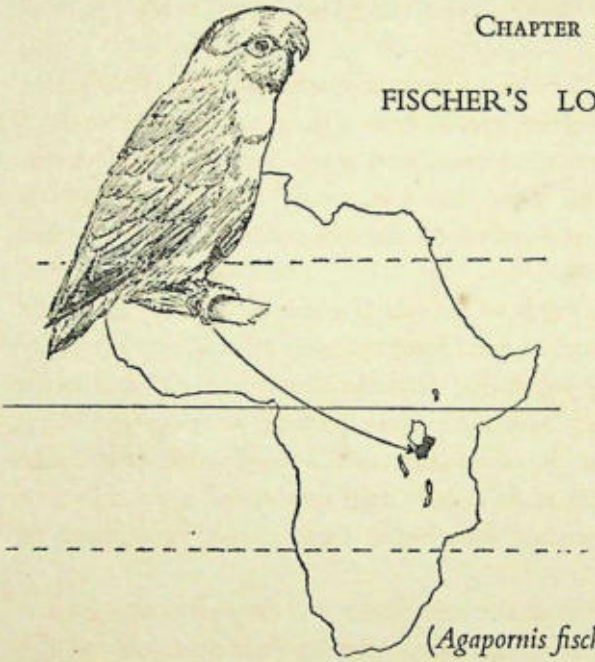
Usually encountered in groups of four to a dozen, they have short, sharp calls that are also uttered on the wing as well as when feeding. They are seldom far from water.

They are the only species of Lovebird with a black bill, and also one of the few with no form of eye decoration of bare skin or feathered surround. The colours of the rump and tail are said to be the brightest of the whole genus, the

tail being rather short so that the wings, when folded, almost reach the tip. There is no information on their nesting habits or development beyond the fact that the young do differ from the adults in colour intensity and the collar marking.

CHAPTER 14

FISCHER'S LOVEBIRD



(*Agapornis fischeri*)

IN this case we have a Lovebird of which there are no recognised sub-species.

Habitat: North-west Tanganyika Territory, south and south-east of Lake Victoria.

Description: Sexes alike. Green, darker on wings and back, lighter on underparts. Forehead bright orange-red, top of head deeply suffused with dark olive, more orange towards back of head and nape; cheeks and throat paler orange, also slightly tinged with olive and merging into green of abdomen across chest. Rump and upper tail coverts bright blue. Flight feathers blackish on inner webs and green on outer. Underwing coverts green to greyish blue. Central tail

feathers green, pale blue towards tips; lateral tail feathers orange towards base, then green with black band on inner webs and blue at tips. Bill coral red. Cere and bare skin round eye, white. Feet blackish grey. Iris brown. Length $5\frac{1}{2}$ in.

Immature: Similar to parents, but duller generally.

The four eye-ring species bear a close resemblance to each other and some scientists regard them as probably all of one species, but this view is not generally accepted. They are alike in habits and each is confined to a comparatively limited area.

Fischer's are birds of an inland plateau between 3,500 and 5,500 ft. altitude where long intervals of drought are experienced. The vegetation is deciduous woodland and bush. Normally, they nest after rainy periods when greenfood is more likely to be abundant. Their food consists of grass seeds and acacia seeds mainly, and they spend a good deal of time on the ground foraging in small parties of a dozen or more.

Their flight is rapid and direct and they make a distinct whirr with their wings, often uttering their short, sharp calls. They have proved quite adaptable, and in some places have become established at liberty, solely through escapees setting up a colony and breeding.

These colonies are usually found where, at one time, considerable wholesale traffic in these birds was carried on. Birds used to escape from the large consignments and soon settled down and made use of local weed seeds and grasses. The traffic in these birds became so great that legislation was brought in to prevent or control it. They are frequently a menace to cereal crops in cultivated areas.

Although the limits of their territory approach those of *personata* within some forty miles, they do not appear to overlap at any point, being kept apart by natural barriers of

thicket that they will not attempt to penetrate, or high ground or other physical barriers. No hybridising is, therefore, reported.

They proved their adaptability during the war and ensuing years of austerity, by taking to a very makeshift diet, with excellent fortitude—buckwheat, unmillable wheat, condemned oats, all supplemented a few grains of canary and weed seeds—and did remarkably well, all things considered. This fact, coupled with the limited numbers of survivors, and consequent resort to some measure of inbreeding, may account for the increasing vice of parents plucking unfledged young.

However, when the Parrot ban was relaxed for a year, Fischer's simply poured into the country—thousands must have entered in—together with a number of Masked, and there is no lack of new blood today. There is a danger that aviculturists will not appreciate the necessity of maintaining the quality of these birds which are today so easily obtainable.

There is absolutely no reason why these birds should not become perpetual inmates of our aviaries, but there is now a new generation of breeders who may not realise the necessity of thoroughly establishing reliable studs while the material is still available in good heart. Fischer's will never breed on an economical basis if the prices being asked sometimes today are continued. Their only hope would be that they become completely domesticated. At present this is not the position; no Lovebirds are doing well, generation after generation, when bred in cages, although this may be a much desired goal.

It may appear contradictory to say that Fischer's are too easy. This, in fact, may be the very cause of their undoing. They seem over-eager to reproduce their kind. Many beginners think, therefore, once they have had a good season, that they are scarcely worth cultivating as they will not pay for their keep. One instance is recorded of a pair being

purchased by an absolute beginner, going straight to nest and rearing fourteen young from May to November.

Such occurrences are rare, not usual. They do, however, sometimes encourage the beginner to give up so easy a subject and try something more difficult. Unless care is taken, therefore, there is a danger that the day will not be far distant when, once more, it will be almost impossible to obtain a pure bred pair of virile breeding Fischer's. The Parrot ban does not look like being relaxed ever again.

An account was once published of a lady who started off with these birds and literally reared them just like a fully domesticated species. This illustrates the point that such a happy position may arrive one day, but in the meantime there are many optimistic beginners who have tried to repeat the success on the same lines with disastrous results.

This lady turned the hen off her eggs daily, and took the eggs out to inspect them. After the fifteenth day she soaked them in water to assist hatching. When the young hatched, she removed them daily and cleaned them and the nest. What is more she got away with it. This is not the way to success; such results are most certainly the exception rather than the rule.

Fischer's are reasonably easy birds to sex by the pelvic bone test. They cannot be sexed with certainty by any external visual feature. Those quoted have often proved unreliable.

They are, however, one of the quickest to start nesting or preparing to breed, given the facilities, and soon show by their behaviour, whether they are a pair, or two of the same sex. It is not unheard of for a Fischer's hen to lay up to eight eggs, so do not be in too great a hurry to decide that six or more eggs indicate that there are two hens. Give them time to incubate for a while and see if they are fertile. Two cocks will not make any nest so, in that event, it is time to look out for other partners fairly soon.

Both Fischer's and Masked sometimes appear to sit very fitfully. One pair in the writer's possession literally never seem to sit. No matter when one goes round the aviaries, or however quietly one may do so, these birds are always sitting outside the box, or carrying on in any manner but that of an incubating hen, yet they always hatch their eggs and always rear their young.

It is really astounding, but even when the weather is cold the results seem to be unaffected. Do not start worrying, therefore, about moving the eggs under Budgerigars, etc. Incidentally, if you ever do try this, never choose your best breeding Budgie hen. Always select a young hen who has never reared a family of her own. She, in her ignorance, is far more likely to rear a clutch of young covered with whiskers, such as no self-respecting bald Budgerigar would ever have.

The nesting cavity is roughly lined with coarse twigs, grasses, millet sprays and other available materials that take their fancy, and domed over the top, all carried in the beak. Eggs are laid on alternate days. Incubation commences with the second or third egg and the hen does all this work, taking about nineteen days, or twenty-two from the first egg. The young are in the nest for almost five weeks. These details apply to all four of the eye-ring species.

A rather extraordinary case is recorded from America where a cock had a flight with two hens, both of whom built separate nests and laid eggs. Each hatched and reared two young ones, the cock entering both boxes in turn to feed the hens and the young. It would probably never happen again, but the record does stand.

Another record, also from America, concerns a young hand-reared Fischer's that was kept with a talking Budgerigar and learned to say "sweet" and "Pretty boy." Well, some people can distinctly hear a Canary say these words, in fact some people have claimed that they had talking dogs,

so—whilst it is not suggested that the fond owner was mistaken —it is quite definitely stated, here and now, that Fischer's do not "make excellent talkers."

On several occasions colony breeding has been attempted. It is not recommended. Having seen some of these colonies that had been well written about in the Press, and having noted the number of damaged feet and bills among the inhabitants, quite apart from the casualties that were admitted on enquiry, mainly through young birds pestering for food adults who were not their legitimate parents, the writer is satisfied that for rearing good whole specimens, colony breeding is not successful.

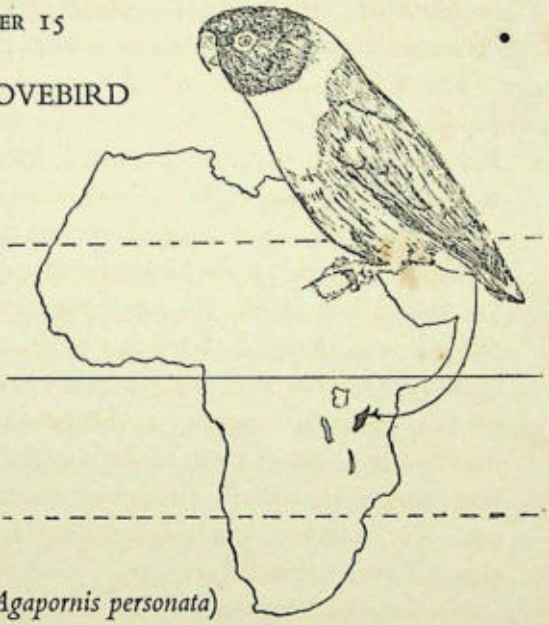
No definite colour mutations have appeared as yet in this breed. In pre-war days a number of pied yellow birds occurred from time to time, but usually moulted out normal. It is to be hoped most sincerely that no one will try to introduce colour varieties by crossing other species to produce most undesirable mongrel hybrids of a different colour. Such experiments are an abomination and a menace to serious breeders.

As full liberty birds, they have been found quite good stayers and have been bred quite well under these conditions. They are probably the hardiest of all, once acclimatised, but always run the egg binding hazard when left out for the winter. They require only the normal seed mixture without additional sunflower or hemp, but as much greenfood and seeding grass as they can be persuaded to take.

Fischer's are delightful aviary birds well worth the trouble and care to ensure the propagation of healthy stock. It is to be hoped that their simplicity of management will not let aviculturists become careless enough to let them ever approach rarity again.

CHAPTER 15

MASKED LOVEBIRD



(*Agapornis personata*)

HERE, again, as with the Fischer's, no separate sub-species are recognised.

Habitat: North-eastern Tanganyika Territory in the Irangi region north to Lake Manyara and south to northern Uhehe.

Description: Sexes alike. Head, including lores and cheeks, brownish sooty black. A yellow collar about half an inch wide at the narrowest part extends from the hind neck right round to the breast where it widens to merge into the main body colour of green. Wings, back and lower underparts all green. Lower rump and upper tail coverts with a faint greyish blue wash. Flight feathers green on outer webs and black on inner webs. Underwing coverts green with greyish

blue areas. Central tail feathers green; laterals orange at base, then green with black bar and yellowish tips. Iris brown. Bill red. Cere and bare skin round eye, white. Feet blackish grey. Length $5\frac{3}{4}$ in.

Immature: Resemble the adults, but are less bright in colour and have black marks on the upper mandible.

The Masked Lovebird was discovered in 1877 shortly after its close relative the Fischer's; both were named by Reichenow. It was first imported 1925. Their respective territories approach each other closely, but do not actually meet. In habits and general requirements they are very similar. If anything, the Masked is more spiteful in captivity, yet this failing is not so noticeable in a really large flight where they can avoid each other when a bully is present.

Birds that have been aviary bred for several generations are, on the whole, less inclined to be vicious. Perhaps the vice has been bred out of them to some extent, or the quarrelsome ones have automatically eliminated themselves by fighting it out. Nevertheless, control breeding in separate flights is strongly recommended.

No Lovebird is hardier than the Masked, once properly acclimatised. There is always the risk of egg binding to watch, however, if they are left outdoors all the year round. For the past few years, while building up a stock of Blue Lovebirds, all the Masked have been brought in for the winter, simply because it was not thought worth while risking a rather valuable bird. Under this method, all the Lovebirds have improved considerably in stamina, general condition and size.

There is no doubt that healthy Blues are equal to normal coloured birds in this respect and they have been wintered outdoors under really rigorous conditions. The majority of the Blues imported from the Continent have been difficult to keep alive under even favourable conditions.

At various times in the past there have been a number of cases where young Masked left the nest in a semi-denuded state. This defect was traced fairly conclusively by some breeders to lack of grass floors and consequent insufficient greenfood. Being natural grass seed feeders, it is quite possible that on wood or concrete floors they did not get sufficient vitamin or mineral intake to fill their needs. The trouble seldom occurs today.

In no species are the birds more difficult to pair up. Although a true pair may actually be chosen, one or the other will sometimes refuse to accept the partner and waste a whole season with no result. The loss of one of a proved breeding pair can often cause considerable delay before a new mate is found.

The Blue mutation has not met with the same success in this country as it achieved in the sunny Californian climate. The first blue bird was wild caught and imported into this country in 1927, only a few months after the first normal bird was actually brought over. In fact, during a short period of eighteen months, three new species of Lovebird were made available for the first time to English aviculturists: Masked, Fischer's and Nyasas.

This first blue bird was depicted in the *Avicultural Magazine*, 1928, and every effort made to start building up a strain. It was found to have a recessive inheritance factor that needed the blue to be present in both parents to produce a blue coloured youngster. There being no alternative to some inbreeding to attain this object, it was scarcely surprising that progress was slow with our climate as an added drawback. Nevertheless, some blues were reared in spite of these disadvantages.

In 1932, there was literally a small eruption of blues from perfectly normal coloured specimens in California, and at least three breeders had blue offspring from some half-dozen

different pairs. In France, too, one fortunate beginner acquired a pair of Masked which he complained about to their breeder. They were unsatisfactory because their young were poorly coloured, being white where they should be yellow and blue where they should be green. His good fortune was pointed out to him, and no doubt a solution to everyone's satisfaction was arranged.

In California the blues multiplied rapidly; they had a good supply of unrelated stock to work with too. Unfortunately, they did not appreciate the difference between a Masked and a Black-cheeked, and both of these species were bred indiscriminately. Normal coloured hybrids are easily recognised, but it is comparatively easy to mistake a cross-bred blue bird. When these blues produce split young with a normal mate, however, the impurity does show up. It is more than likely, therefore, that the blue Masked and the blue Black-cheeked sometimes mentioned are one and the same, probably hybrids.

Where the Japanese obtained their original supply of blue birds is not known. It is more than likely that they purchased them in America, just as they paid fabulous figures for blue Budgerigars when they first occurred. It is from the Japanese that the blue birds often offered recently on the Continent are reputed to come. There is no doubt that these birds are not equal to Californian stock in stamina and condition.

Other mutations of Masked Lovebirds have also been developed such as the so-called yellows, greys and whites. The yellow birds are not a good coloured type at all; they are mostly pied yellow and green. The greys appear to be a dilute form of the blue, and a poorly coloured one at that. The whites resemble the yellows in a blue form, in other words are mottled rather than a good even colour.

It is to be hoped that these mutations have been developed only by breeding true to species and not by crossing other

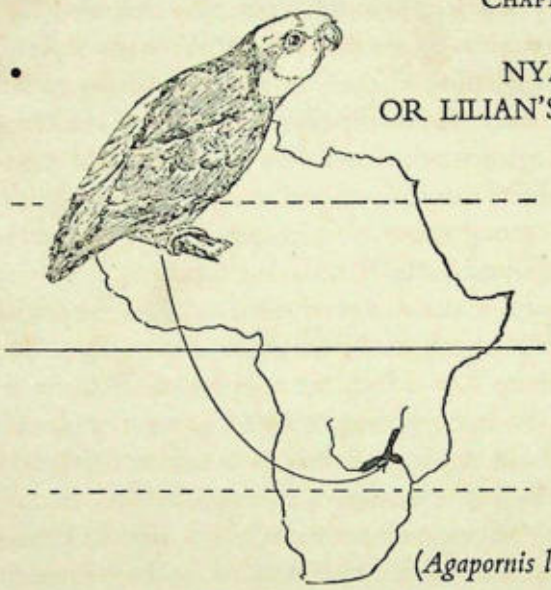
species in which different sport mutations have occurred, but at present their genetical make-up is not known and open to suspicion. The yellows at least bear no resemblance to the lutino Nyasa, which is a beautiful even clear coloured bird with faint orange areas where the normal bird is so coloured.

In California the Blue Masked, as they are usually called, are almost invariably bred on the colony system. The climate is simply ideal for aviculture and their floors are believed to be kept entirely free from disease and never require replacing, owing to the strong action of the sun. Such conditions should make any bird fairly equable in temper.

Another thing is that the size of the average flight used is really very much larger than that which is ever built over here. Many more nest boxes are supplied than there are breeding pairs to occupy them. This ensures that freshly fledged young birds can find a home without interfering with their parents' further breeding activities. In our climate, control breeding of one pair per flight is still advised though the facts mentioned above must be included for those fortunate enough to enjoy tropical or similar favourable conditions.

CHAPTER 16

NYASA OR LILIAN'S LOVEBIRD



(*Agapornis lilianae*)

THE Nyasa or Lilian's Lovebird is the only member of its species, no sub-species being recognised.

Habitat: Northern Rhodesia, east of the Loangwa Valley to Nyasaland, and south to the Zambesi River.

Description: Sexes alike. Green, paler on the underparts, darker on the back and wings, slightly more yellowish on rump and upper tail coverts. Head, salmon pink, brighter on forehead, paler on cheeks, throat and upper breast. Back of head yellowish-green. Flights dusky green, underwing coverts green. Tail, green on two central feathers; laterals orangeish towards base, then green with a black sub-terminal bar and green tips. Cere, and ring round eye, bare white skin. Iris yellow to brownish red. Bill red, and comparatively small. Feet grey. Length 5 in.

Immature: Dull editions of parents, often with darkish patches on the cheek.

The Nyasa Lovebird is not described in the British Museum Catalogue, which was issued in 1891. It was first reported in 1864 from the Shire River in Nyasaland, but was then assumed to be *roseicollis*. The first description appeared in *Ibis* in 1894, by Shelley, who named it in honour of Miss Lilian Sclater. It remained unknown to aviculture until 1926, when a shipment of Peach-faced arrived in London, which looked rather unusual. These were identified by Mr. Seth-Smith eventually as the first Nyasas.

In habit, they follow the other three "eye-ring" species. They are, however, always found close to rivers, rather than in arid areas, and at an altitude of between 1,500 and 3,500 ft. At places their territory approaches within fifty miles of that occupied by *nigrigenis*, though they do not overlap, neither do they hybridise naturally, although this was at one time believed to happen occasionally. For some obscure reason, they do not meet apparently, so far as present knowledge goes.

The extent of their region is greater than that of the Black-cheeked, but still fairly limited; it does, however, reach into Portuguese East Africa, and birds that reach the market today must originate from this source, as there is an export prohibition ban in Nyasaland.

They are gregarious and always go round in groups of twenty or more. Little is known about their nesting in a wild state, but it is well known in captivity.

Once the first importation was made, the birds settled down so well in this climate, and so quickly, that the Marquess of Tavistock wrote in his book that it was "likely to become the commonest of aviary birds, threatening to rival the Budgerigar in popularity." Unhappily, this state of affairs did not eventuate. The Parrot ban and then the second

World War, between them almost exterminated the Nyasa as an aviary bird.

In 1947, when a census of Parrot-like birds was taken, only five unsexed Nyasas were left in the entire country. More recently (1958), a few pairs have been imported, but the number remains far too few, because they are one of the most delightful birds to keep.

In temperament, they are much more tolerant of each other's company in captivity than other *Agapornis*. If a colony is gradually built up, the older birds seem to agree well together, and what is more, they keep the younger ones in order, more or less. There may be occasional squabbles when selection of mates is under consideration, but it seldom develops into anything serious.

Introduction of a stranger, however, requires a certain amount of diplomatic supervision and preparedness. If a quarrelsome individual is inclined to spoil the peaceful atmosphere of the family, catch him up, give him a mate to himself and let him start another tribe on his own. The cares of rearing a family soon take his mind off such trifles.

In spite of this digression on colony breeding, in view of the present scarcity of established breeding strains, it is still strongly recommended that control breeding, in pairs, is the better method of increasing healthy stock.

Training them to take sufficient greenfood usually requires some patience, but once the taste is developed they look forward to their food, especially when rearing young. The nest is of the domed-over type, usually with two chambers or at least well covered and hard to see into. The materials are carried in the beak, not under the rump feathers. The young are covered with orange down that turns grey as the feathers start to break through.

The unreliability of sexing by means of the colour of the iris has already been commented on fully under sexing notes.

They are best left to themselves to sort these matters out. Young birds are particularly difficult to sex by the pelvic bone test.

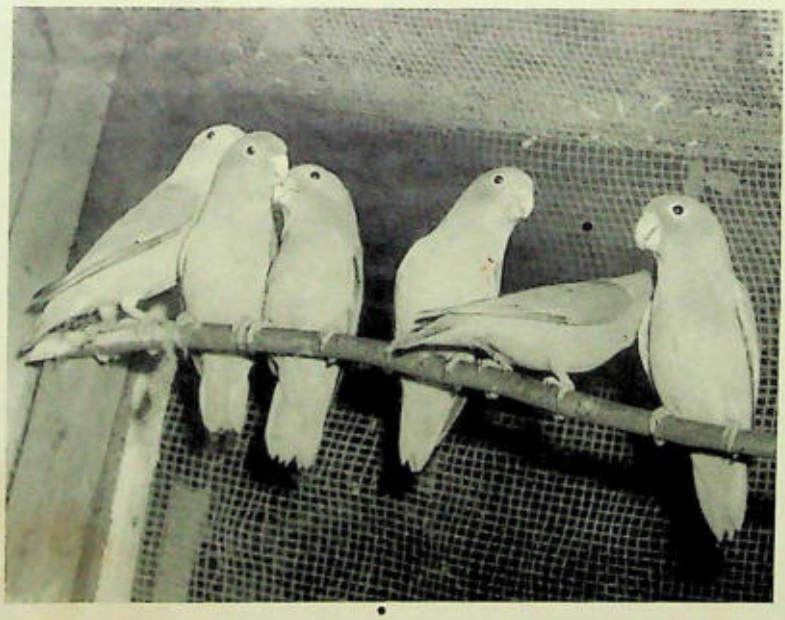
No trouble should be too great to try to re-establish the Nyasa once more as a favourite aviary bird. While endeavours are being made to do this, it is advisable to bring these birds in for the winter. This does not mean they are less hardy than other species; they are in fact subject to greater temperature variation than most, although they are not used to anything like such low temperature as would be experienced in an English winter. In the past, they have frequently been wintered out—after thorough acclimatisation; but with the supplies so precarious, it is wiser to take extra precautions, until aviary-bred stock becomes stronger and more plentiful.

The Nyasa is the only Lovebird that has produced a lutino *strain* anywhere in the world. It is one of the loveliest little birds that can possibly exist. A colour plate appeared in *Foreign Birds* in 1956. This mutation first appeared in Adelaide, in the aviaries of a Mr. Prendergast, where two normal birds produced two lutinos in 1933.

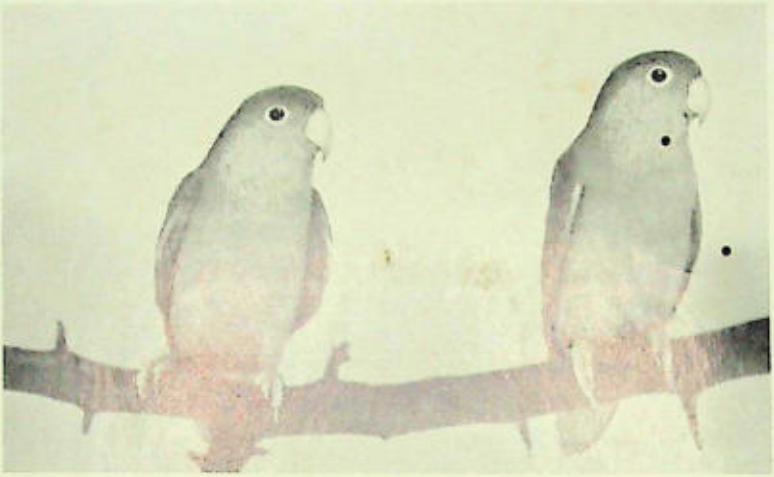
One Australian record gives this date as 1943, but this must be a misprint as the writer obtained some of these birds from this source in 1938. The Lutinos became well established eventually in Australia, and they are quite readily obtainable there. Elsewhere, they have proved most stubbornly opposed to reproducing more of their kind; even in the wonderful climate of California, progress is not very great.

All the lutino blood in this country was lost in the war years. The Duke of Bedford secured one lutino cock after the war which eventually came into the writer's possession. It was reputed to be sex-linked—as, indeed, all these lutinos are supposed to be—but this was eventually disproved beyond any doubt; the inheritance is recessive. A number of young have been reared from this original lutino cock, including

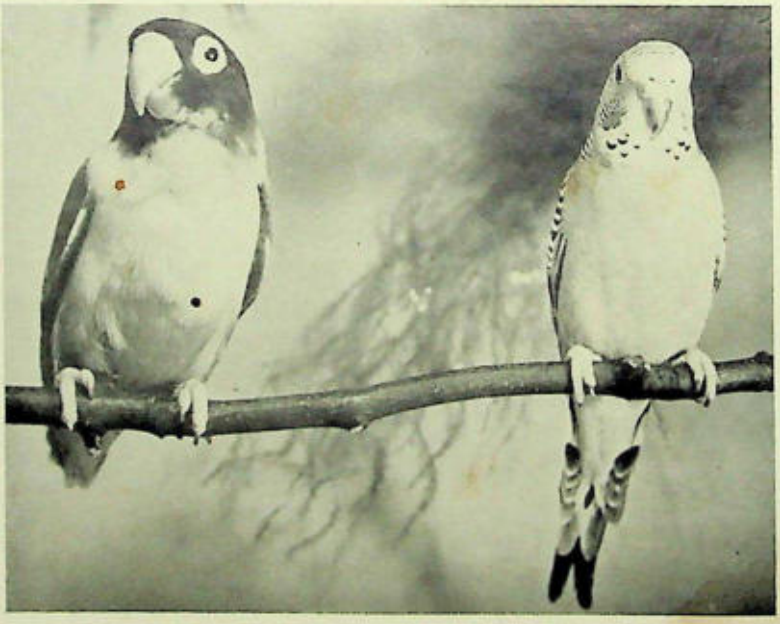
Catching a Lovebird. Quickly place the hand (left) *on the back of the bird with a finger against either cheek, and ensure that the bird cannot turn its beak round. The bird is usually on the floor or wire netting. Now,* (right) *as soon as possible ease the thumb well under the lower mandible, with the forefinger exerting a light but firm pressure on the back of the neck.*



The first breeding of Spengel's Parrotlets in this country was recorded by Mr. D. W. Drury of Stapleford Abbots, Essex in 1958. The birds seen above are left *to* right*: Young hen, young cock, young cock, adult hen, young hen, adult cock.*



A pair of Peach-faced Lovebirds belonging to the author. Male and female are alike, and there are two sub-species.



This interesting comparison shows well the anatomical differences between the true Lovebird and the Budgerigar. Particularly noticeable is the difference in the size and power of the beak. The photograph shows how much more robust in build the Lovebird is, and the difference in the length of tail is also interesting.

some half a dozen beautiful yellow birds.

However, for one reason or another, these do not occur with anything like the frequency one would anticipate under the Mendelian Law. Moreover, if an accident does happen, Fate always singles out the rarest and most prized specimens as victims. Although Nyasas are the most amicably inclined of all the Lovebirds, the young green normal coloured birds turned on the lutino young one day and killed two of them. It is better to keep them in pairs.

CHAPTER 17

BLACK-CHEEKED LOVEBIRD

(*Agapornis nigrigenis*)

NO sub-species of the Black-cheeked Lovebird are recognised, although, in fact, it closely resembles the Nyasa.

Habitat: Northern Rhodesia on the northern tributaries of the Zambesi River between Sesheke and Victoria Falls.

Description: Sexes alike. Green, somewhat darker than *lilianae*, lighter on the underparts and rump. Head warm brownish black, darker in front of face and cheeks, but not sooty black; throat and chest orange-salmon; back of head yellowish olive. Wings darker green with dusky green flights and green under coverts. Tail green on two central

feathers, the laterals orange towards base, then green with a sub-terminal black bar, green at tips. Cere and ring round eye, of bare white skin. Iris yellow to reddish brown. Bill bright red and comparatively small. Feet grey. Length 5¼ in.

The history of the Black-cheeked is similar in many respects to that of its closest relative the Nyasa. It was first discovered in 1904 by Dr. Kirkman and described in the Bulletin of the British Ornithologists Club in 1906. Unlike the Nyasa, however, it was first imported through the Continent a few years later in 1908.

This bird is so close to the Nyasa in habit and territory that some scientists take the view that they are only sub-specifically separate. All that has been said of one applies to the other. The area in which the Black-cheeked is found is even more restricted, although it was very numerous at one time in that limited space. Also, like the Nyasa, this species took to captivity remarkably well, and at first, set out to be a prolific breeder.

Probably this fact has accounted, in part, for the apparent apathy of aviculturists in failing to appreciate what a lovely little bird they had here, and proper care to ensure its preservation was not given at the right time. When this was realised, it was too late. If the opportunity does present itself once more, every effort must be made to see that this species receives the attention it really merits.

After the initial success of its introduction, a few more birds were imported from time to time and they generally proved ready breeders. A recession occurred during the first World War, when supplies ceased, and also correct feeding materials were unobtainable. In 1926 further supplies were brought in, direct from Africa in large numbers. The birds multiplied in captivity and became really common in most collections. Further supplies still poured in from the very small district where they lived; this was only some

seventy miles across in any direction. It was small wonder, therefore, that an export embargo was brought in, to save the birds.

It is said that over 16,000 were ruthlessly trapped in one month in 1929 by scaring the birds from the sorghum crops, so that they took refuge in trees that were previously limed to catch them. Such senseless cupidity on the part of some dealers quite rightly forced the authorities to take drastic action. They can scarcely be blamed for taking a very unfavourable view of the aims of some aviculturists, though it was not the aviculturist who benefited from this stupid action.

Once again, World War II eliminated the stocks of aviary birds. But now there is a ban on the export from Rhodesia, and it is difficult to say from where the limited supplies trickling in from the Continent today originate. Either they are coming from some captive bred source that is getting very degenerate, or the circumstances in which they come over so weakens the birds that inherent or dormant diseases are reactivated by the general weakening of their constitutions.

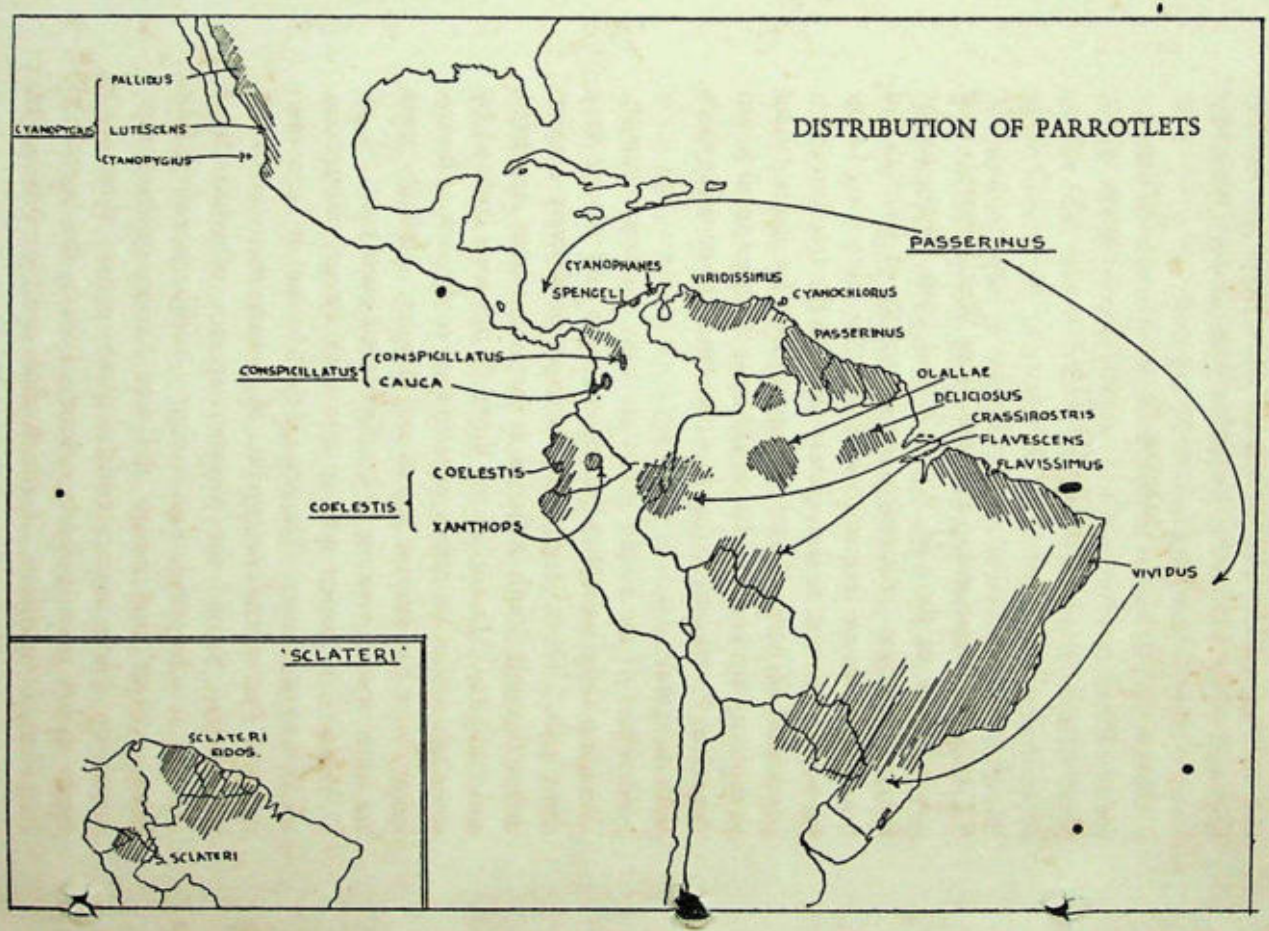
It is significant that whereas, in former times, Black-cheekeds settled down, and usually had young in a few weeks after arrival, although they have been available, in small numbers, for the last two years, no one has so far claimed a certificate for their first post-war breeding.

In pre-war days, the Black-cheeked was most prolific. It was reasonably hardy and could readily be wintered outdoors after proper acclimatisation. It could also be kept on the colony principle with little comparative danger from serious squabbling.

The Marquess of Tavistock tried them at liberty and found that they prospered, but he used to lose them in the autumn. He believed they migrated, but this was not one of their normal instincts, as their limited domain shows. The migra-

tion was more likely due to hawks, when the leaves fell and removed natural cover—a condition with which a Lovebird from evergreen surroundings could not cope.

Obviously this species deserves special attention in view of the circumstances, but as things stand at the moment, this is not a task for the beginner to start on. It may lead to disappointment before the pleasure that can be derived from breeding this delightful genus of birds is fully understood. The best course would appear to be for some scientific research to be made to establish the cause of the unsatisfactory progress being made with the only available material today.


DISTRIBUTION OF PARROTLETS
PALLIDUS
CYANOPYGIUS
LUTESCENS
CYANOPYGIUS
PASSERINUS
CYANOPHANES
SPENCELI
VIRIDISSIMUS
CYANOCHLORUS
PASSERINUS
CONSPICILLATUS
CONSPICILLATUS
CAUCA
OLALLAE
DELICIOSUS
CRASSIROSTRIS
FLAVESCENS
FLAVISSIMUS
COELESTIS
COELESTIS
XANTHOPS
VIVIDUS
'SCLATERI'
SCLATERI
EIDOS.
SCLATERI

CHAPTER 18

PARROTLETS
(*Forpus*)

THE only relationship that any New World Parrots bear to those of the Old World is that both belong to the family *Psittacidae*. Although the Parrotlets of Central and South America are frequently known as the Blue-wing Lovebirds, they are not, in fact, closely allied to the true Lovebirds (*Agapornis*) of Africa, but their requirements for management in captivity are very similar, as are those of other small South American Parrakeets, so that it is convenient to consider them with this genus.

Members of the *Forpus* genus are truly miniature Parrots, averaging only some five inches in length and having very short tails. Their range extends from north-west Mexico down through South America as far as northern Argentine and Paraguay. Details of the limits of the areas covered by some sub-species are rather vague owing to the lack of knowledge about the interior forests and jungles; probably there are more species waiting to be discovered even yet.

Five species, further split up into some twenty sub-species, are known to science. The first are the Mexican or Turquoise-rumped Parrotlets, *cyanopygius*, of which there are three sub-species. Second the *passerinus* species, of which there are eleven sub-species, one having a turquoise rump, four having cobalt blue rumps and five having green rumps. Third, the *sclateri* species with two sub-species; these are a much darker green in body colour. Fourth, the Spectacled Parrotlets, *conspicillatus*, of which there are two sub-species,

with a markedly noticeable coloured area around the eye which gives them their name. Lastly, the *coelestis* species, the Celestial Parrotlets, which are either very bright green or yellow on the head and frontal areas; again there are two sub-species.

Of these races, only three are likely to come into the possession of aviculturists in this country, namely: 1.—The Turquoise-rumped or Mexican Parrotlet (*Forpus cyanopygius lutescens*), which might possibly be either of the other sub-species *cyanopygius* or *pallidus*; 2.—The Guiana Parrotlet (*Forpus passerinus passerinus*), which has a green rump in the male and could, therefore, be one of the other green-rumped species (*cyanophanes, viridissimus, cyanochlorus* or *deliciosus*); 3.—The Blue-winged Parrotlet (*Forpus passerinus vividus*), which could be one of the other blue-rumped sub-species (*flavescens, crassirostris* or *flavissimus*). Spengel's Parrotlet (*F. p. Spengeli*) might be placed between groups 1 and 2, with a torquoise rump.

There is a code of international rules governing the naming of new species that requires, among other things, that once a bird is given any specific title, it must always retain that name if it is the first to receive it. This has led to some most unfortunate shuffling around of names at times and although it may not concern aviculturists greatly, it is well to understand something about it to avoid confusion when referring to earlier writers' articles on some of these species.

For many years these little Parrots were named *psittacula*, but this name was eventually found to be the correct title, by priority, of the Asiatic Parrakeets of the Ringneck genus, so that the Parrotlets had to be rechristened *Forpus*.

Similarly, it was found that the Blue-wing of Brazil, which was known for many years as *passerinus*, was not entitled to that name as it had already been granted to the Guiana sub-species which was then generally known as *guianensis*.

However, the rules having been made, they had to be observed, so that these two well-known species had to change names and *guianensis* became *passerinus*, and a new name had to be found for the old *passerinus* which became *vividus*. If, therefore, one of the earlier writers describes his *passerinus* as having a blue rump, he is quite correct but the names have now been changed.

A similar muddle occurred with the Mexican Parrotlets, *cyanopygius*, where the race that had borne the name *cyanopygius* had to yield priority to the island sub-species which had for many years been named *insularis*, which is again more logical to a layman. But it was discovered that the actual bird on which this name had been bestowed was one from these islands, therefore it had to be called *cyanopygius* and a new title found for the mainland race, which was *lutescens*.

In all these sub-species, the differences occur in the males, but the hens are all very much alike and almost impossible to distinguish. The important thing, so far as aviculturists are concerned, is to remember that a Parrotlet with a turquoise rump is a Mexican species, with a green rump a Guiana Parrotlet or one of the close allies mentioned above, and if it has a deep blue rump it is a Blue-wing or Brazilian species or one of its close relatives as listed above.

If the bird has a dark green body colour throughout it is one of the Sclater's Parrotlets, and if with a blue eye-ring it is one of the Spectacled Parrotlets, while a yellow or bright green head and face means that it is one of the Celestial Parrotlets.

As a further aid to identification, the distribution map will enable one to place the most likely species if the exact locality of its origin is known. These areas are only approximate from present available information.

In all cases, the question of sexing the species is quite simple.

The hens differ from the cocks in being generally much lighter on the forehead, which is yellowish, and having little or no blue areas on the rump and wings; this difference is noticeable even in immature specimens and can be seen as soon as they leave the nest. It is more apparent in some species than others where the amount of blue is greater.

Replacing a lost hen, however, requires some care to ensure that the same sub-species is obtained, although in view of their great similarity it is not a matter of great importance, as all sub-species are able to interbreed and the progeny can scarcely be distinguished.

Apart from their habit of sitting together as close as possible in pairs, they have little claim to the appellation "lovebird." Few Parrotlets are really amiable in disposition; indeed any one that is an inoffensive type may be regarded with suspicion as being out of condition. New arrivals are often tolerant of the company of a number of their own species, but they should never be associated with weaker birds, nor with their own kind if breeding is the objective. Always give a breeding pair a flight to themselves.

When newly imported they are decidedly delicate at first, and it is not wise to try to winter them outdoors for the first year; neither should young birds, reared during the summer, be allowed to stay out for their first winter. Once properly acclimatised and moulted out over here they are perfectly hardy.

Normally, Parrotlets do not take kindly to cage life; they are exceedingly nervous and will not steady down. Whenever their cage is approached they dash about and scold continually, yet they have been known to breed in a very small all-wire cage, so that this nervousness is not always present.

In spite of their diminutive size, their bills are enormously powerful as can be seen on close inspection. Any doubts on

the point will quickly be removed if one is a little careless in handling a bird. Once they secure a firm hold of your finger, it is very difficult to free it and most painful. Do not believe that when one species is described as being "weaker in the bill" it means that they cannot inflict a painful bite.

Breeding pairs will thrive in the small six-foot flights described for the Lovebirds, but if a flight without a proper shelter is used, it is wiser to move them to more sheltered quarters for the winter months. In flights with a shelter, they can well stand the English winter once they are acclimatised. Some species were bred at complete liberty by the late Duke of Bedford.

In one important detail they differ from true Lovebirds. They do not build any nests with materials taken into the cavity. It is not so necessary, therefore, to provide too large a box; one about five inches square and up to ten inches deep with an inch of leaf or peat mould to cradle the eggs is quite sufficient. The details of its construction may follow those given for Lovebirds in all other details.

When a Parrotlet hen does go to nest, she really takes things seriously and literally disappears. Usually they are exceedingly intolerant of interference and should be left entirely alone. The opportunity to take a sly peep when the hen is off to feed will seldom, if ever, occur, as she never does appear to leave the box.

The cock can often be heard inside feeding her, but in this operation individuals vary, as some cocks are very furtive in entering the nest and will never do so if they are being observed. Inspection while the hen is actually brooding is asking for trouble. Although you may be very anxious because the hen is never in sight, the only procedure to adopt is one of utter patience. Leave them alone and rely on what you can observe in the behaviour of the cock, and listen to hear him feeding his hen.

The average clutch of eggs may be as many as eight; five or six are quite normal. If left alone, they usually rear all of their young without trouble, though there are exceptional cases where the parent birds are inclined to neglect the fledglings shortly after leaving the nest. This may be due to a desire to go to nest again, as they are often double-brooded or even three broods are attempted, but in the average English summer most hens seem to think that one nest is sufficient.

The young, unlike Lovebirds, are born naked. They fledge at about thirty-five days old and the parents can usually be heard feeding them in the nest, much more so than one can hear a Lovebird. After leaving the nest, the young usually return at night, but not always; in any event it is wiser to provide extra boxes for roosting at this time. The young hens may easily be picked out by the paler and more yellowish colour of the forehead and absence of blue in the plumage, which is always more noticeable in the wings of the males.

Their requirements as regards food are very similar to Lovebirds. Fattening oily seeds like sunflower and hemp should be rationed, but these birds may definitely have a good deal of these two seeds without coming to any harm. Some breeders feed almost unlimited supplies, but even though the birds may appear to be none the worse, it would be wiser to ration the supply except when a family is being reared.

The main seeds should be canary and millet, spray millet being very popular with some individuals. Oats and buckwheat are also appreciated by some. Rusked and moistened brown bread as an additional rearing extra saves the parents considerable work. As regards greenfood most Parrotlets do not take to our weeds enthusiastically, but this must be persevered with to ensure a balanced diet. Some will take apple or pear.

Sprouted seeds are of considerable use when rearing, and

seeding grass is also accepted. Incidentally, Parrotlets use long grass for their bathing medium and do not normally bathe in water. They frequently roll in long grass or leaves when dew-soaked.

Parrotlets generally make an excellent change for an aviculturist to keep at the same time as a collection of Lovebirds. They are quieter than the latter, and particularly attractive when seen in flight and the full beauty of the blue wings are shown. Yet their management is very similar.

TURQUOISE-RUMPED OR MEXICAN PARROTLET (*Forpus cyanopygius lutescens.* van Rossem). As noted earlier there are three sub-species, this one originally being the nominate race which is found in west Mexico from southern Sinaloa to Colima. The cock is bright green above, more yellowish on forehead. The greater wing coverts, lower back and rump are light turquoise blue, secondaries darker blue. Underwing coverts are blue and green, primaries dusky green. Sides of head and underparts are lighter yellowish green. Bill whitish. Iris yellow. Legs and feet deep brownish or dusky.

Young males are less blue in intensity. Hens are like young males, but wing coverts are greener and the secondaries dark green.

Forpus cyanopygius cyanopygius (Souance. Formerly *insularis*). This is very similar but larger slightly, particularly in the bill. Its colour generally is darker and more in contrast with the light underparts.

This bird is found in the Tres Marias Islands off the west coast of Mexico.

SONORAN PARROTLET (*Forpus cyanopygius pallidus.* Brewster). This sub-species comes from Sonora, west Mexico, and is slightly paler and more ashy in colour than the former species. The hens are wholly lacking in blue on the wings.

The foregoing Mexican Parrotlets are extremely attractive little birds, but are the least often imported here. In the U.S.A., where they are much better placed geographically to obtain supplies, and with a more favourable climate, they have been bred on several occasions.

On arrival in this country, they are inclined to be delicate, but have been wintered outdoors after acclimatising. In 1927 five young were reared by a lady in Swindon in an aviary that contained some Lovebirds as well. These latter were most probably responsible for the nest box being found to contain grasses and millet sprays as a lining, as Parrotlets do not line their nests. The young could be sexed on leaving the nest by the blue rump.

The next species is the *passerinus*, which is divided into eleven sub-species, some of which are blue on the rump while others are green.

(1) First is SPENGEL'S PARROTLET (*Forpus passerinus spengeli*. Hartlaub). This comes from the Santa Marta region of Colombia. The cock resembles the Mexican species in having a turquoise rump, but differs in having a larger bill, and being noticeably smaller in size. The underwing coverts are spotted with dark and light blue on the inner parts, and this is a distinct feature. Hens are almost indistinguishable.

It has been imported on rare occasions, and was exhibited some years ago, but it was not until 1958 that the first breeding success was recorded when a pair reared five young in two broods in the aviaries of Mr. R. W. Drury, of Stapleford Abbots, Essex. The young could be sexed from the time they fledged and the parents were unmistakably identified by their larger bill and the characteristic underwing coverts of mingled turquoise and ultramarine when inspected closely.

(2) The second is the HACHA PARROTLET (*Forpus passerinus cyanophanes*. Todd), also from the arid tropical zone of the

Santa Marta region of Colombia. This type does not appear to have been imported, or more likely has not been recognised as being different from the following species as it only differs from it in being deeper hyacinth blue on the primaries and secondary coverts.

(3) VENEZUELAN GREEN-RUMPED PARROTLET (*Forpus passerinus viridissimus*. Lafresnaye). This only differs from the more frequently imported *passerinus passerinus* in having the underwing coverts glaucous green with a blue patch on the secondary coverts. It also averages a slightly larger size.

Again this has very rarely reached these shores, but some were bred in the Paignton Zoo.

(4) HARTLAUB'S PARROTLET (*Forpus passerinus cyanochlorus*. Schlegel). Another green-rumped species from the upper Rio Branco region of northern Brazil, which closely resembles *passerinus passerinus* once again. It has a smaller bill and the under surface as well as the lower back and rump is said to be decidedly more yellowish green.

(5) GUIANA PARROTLET (*Forpus passerinus passerinus*. Linné). This is the former *guianensis* and the most frequently available of the green-rumped Parrotlets. It is found in Guiana, Surinam and Cayenne.

The cock is green, tinged with grey on the back of head and nape. Sides of head, lower back, rump are emerald green; upper tail coverts and underparts yellowish green. Some blue on the bend of wing and lower edge, the secondaries and underwing ultramarine blue. Bill whitish. Feet fleshy, grey. Iris brown. Length $5\frac{1}{2}$ in.

The hen is green, brighter on the rump, underparts paler. Forehead and sides of head yellowish green.

This bird has been known for at least two hundred years, and has presumably been imported long ago as they can easily be obtained from native boys, usually being taken from

the nest. Although bred on the Continent during last century, it was not until 1926 that the first success in this country was obtained.

Whether they decide to nest in captivity or not, appears to be a matter of individual temperament, but some records have proved them to be quite prolific once the attempt was started. Clutches of eight have been reared and one pair reared a total of fifteen young in one season. Needless to say, this is exceptional or they would be as common as the Budgerigar by now.

They have been very successfully bred on the Continent in large indoor cages or flights for two or more generations. There is always the difficulty of separating the different sub-species of the hens if one should be unfortunate enough to lose one. At one time it was suggested that the colour of the legs was a good guide, being grey in some and pinkish-grey in others, but this is now thought to be only an inconstant variation, encountered in any of the sub-species.

(6) DELICATE PARROTLET (*Forpus passerinus deliciosus*. Ridgway). Found on the banks of the lower Amazon, this is one of the smallest species. It is almost intermediate between the green-rumped and blue-rumped species as its rump is described as green with a turquoise tinge; the wings are also rather more blue than the foregoing species.

(7) LARGE-BILLED PARROTLET (*Forpus passerinus crassirostris*. Taczanowski). Another blue-rumped variety from west Brazil and northern Peru. It resembles *vividus* and is sometimes known as the Large-billed Parrotlet on account of its considerably stouter bill. The forehead and cheeks are deep emerald green and contrast with the main body colour which is lighter underneath. The rump and wings are bright cobalt, the underwing blue. Hens have no blue

(*From a drawing by E. N. T. Vane*)

Parrotlets: 1, Turquoise-rumped or Mexican. 2, Blue-winged. 3, Guiana, male and female. 4, Spectacled. 5, Sclater's. 6, Yellow-faced. 7, Celestial or Lesson's.

whatever and the head is greener. Apparently it has never been imported.

(8) SALVADORI'S PARROTLET (*Forpus passerinus flavescens.* Salvadori). Another inland species from western Brazil and Bolivia, the exact territory being unknown precisely. Differs from *vividus* in the green colour being lighter and more yellowish and the rump and underwing being lighter blue. Feet grey. Bill whitish.

(9) CEREA BLUE-WING PARROTLET (*Forpus passerinus flavissimus.* Hellmayr). This is very similar to the ordinary Blue-wing (*vividus*) but is lighter green and more yellowish green on the forehead. Sides of head and lower parts are apple green. Lower back, rump and most of wings are a uniform cobalt blue. From north-eastern Brazil.

(10) BLUE-WING PARROTLET (*Forpus passerinus vividus.* Ridgway). This was formerly *passerinus.* Found from Cape Roque, Brazil, right down to Paraguay and north-eastern Argentine. This is the most commonly imported species of all the Parrotlets. The green is slightly more intense, lighter round the sides of the head. The blue is a rich ultramarine and extends over the wings and rump more than any other sub-species; the underwing coverts are also blue. Tail green. Bill whitish. Feet grey. Length 5 in.

The hen has no blue areas, the forehead is yellower and the rump more emerald green.

The Blue-wing Parrotlet has been bred on many occasions; one case was recorded by Green in his book published in 1884, and another in 1903 when a brood was reared in an all-wire bell cage. The parents were acquired for the sum of five shillings.

Apart from the fact that they do not take kindly to cage life, rarely steadying down, it is only when in flight in an aviary that the full beauty of their glorious blue wings and

rumps can be properly appreciated. Nevertheless, they have also been bred indoors in large flight cages with extraordinary success on the Continent.

(11) *Forpus passerinus olallae* (Gyldenstolpe). This sub-species was only named comparatively recently when discovered in the middle Rio Amazon region of west Brazil. The cock differs from the *crassirostris*, to which it is closely allied, in the blue of the rump being distinctly darker. The underwing coverts are paler blue, as a rule the green colour above is also darker. The bill is whitish, dusky at the tip. This species is not mentioned in Peters' Checklist.

THE SPECTACLED PARROTLET (*Forpus conspicillatus conspicillatus*. Lafresnaye). The cock is a dull green, brighter on the forehead, crown and cheeks. Around the eye is a characteristic cobalt blue ring. Lower back, rump and most of the wings ultramarine blue, very dark on rump. Upper tail coverts are green, lower parts dull green tinted greyish-blue, tail green. Bill whitish. Feet pinkish. Length $4\frac{3}{4}$ in.

The hen has no blue at all, but the green colour generally is brighter. The young males have no blue round the eye and other blue areas are less intense.

Habitat: Eastern Darien and Colombia.

These birds are one of the smallest of the group. They do not appear to have been imported here, but have been bred in America.

CAUCAN SPECTACLED PARROTLET (*Forpus conspicillatus caucae*. Chapman). This comes from the tropical zone of west Colombia in the valleys of the Cauca and Dagua Rivers.

This is similar to the foregoing, but larger, the wings and tail constantly longer and the bill heavier. The blue areas are not so purplish blue.

SCLATER'S PARROTLET (*Forpus sclateri sclateri*. Gray). The habitat of this bird is eastern Ecuador and eastern Peru.

This is a much darker green bird than any other of the genus. The cock is dark green, lighter on forehead and sides of head, paler on the underside and vent. The central part of the wings, the underwing coverts and the bend of the wing are deep blue as is the rump and lower back. The bill is dusky brown above and whitish on the lower mandible. Length 5 in.

The hen is also dark green, lighter on the rump. The sides of the head and throat are yellowish-green. There is no blue colouring.

It does not appear to have been imported.

SCHOMBURGK'S PARROTLET (*Forpus sclateri eidos.* Peters). This was formerly known as *Psittacula modesta.* It is found in eastern Venezuela, the Guianas and western Brazil.

It is very similar to the foregoing, but the males have the rump a darker blue and the green colour is also somewhat darker.

CELESTIAL PARROTLET OR LESSON'S PARROTLET (*Forpus coelestis coelestis.* Lesson). From western Ecuador and western Peru.

The male has the forehead, crown, cheeks and chin bright green. The back of head and nape is bluish grey, which extends down the back but becomes greenish-grey. Behind the eye is a bright blue streak round the green cheek patch. Wings are greenish with dark blue wing coverts above and below. Lower back and rump are very dark blue. Upper tail coverts are green with bluish tinge. Tail green. Underparts are green with greyish tint on the sides. Bill whitish. Feet flesh colour. Iris brown. Length 5 in. The hen is slightly smaller, with no blue on the wings and sometimes a little on the rump. Breast and underparts yellowish.

This bird has been imported privately, but has not been bred here. It is apparently quite common in the districts in which it occurs and has been kept and bred in captivity in Peru.

Although it is gregarious in habit and often seen in small flocks, it was given the reputation of being almost cannibalistic in a colony flight.

The American aviculturist who bred them found them almost as prolific and easy to manage as Budgerigars apart from this unfortunate lapse. They are apparently often taken from the nest and hand-reared. Their requirements are exactly similar to those recommended earlier for their congeners. On rare occasions a blue variety has been observed flying around with some normal coloured birds in a natural state.

YELLOW-FACED PARROTLET (*Forpus coelestis xanthops*. Salvin). This sub-species is found in Marañon valley in northern Peru.

Similar in colour pattern to *coelestis*, but the face and crown are yellow and the underparts are much more yellow. There is no blue streak behind the eye. The bill is larger and whitish in colour. Feet blackish grey. Iris light brown. Length $5\frac{1}{2}$ in., larger than *coelestis* which is on the small side.

Apparently this species has not been imported.

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