



AVIARY AND CAGE BIRDS

THEIR CARE AND BREEDING

♦
ILLUSTRATED IN NATURAL COLORS

AVIARY and CAGE BIRDS

THEIR CARE AND BREEDING

IN THREE PARTS

By M. L. FLOWERS and FLORA FLOWERS



PART 1

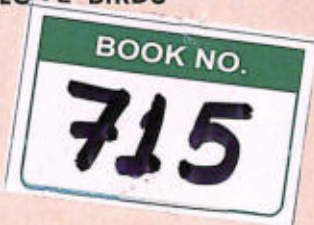
FINCHES, QUAIL and DOVES

PART 2

PARROTS, PARRAKEETS and LOVE BIRDS

PART 3

CANARIES



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PART 1

FINCHES, QUAIL and DOVES

Their Care and Breeding





Color Plate A

Upper — Brazilian Cardinal
Text on Page 49 and 74

Lower — Mexican Cardinal
Text on Page 47

FINCHES

THEIR CARE AND BREEDING

By M. L. and FLORA FLOWERS

Written at
BIRD HAVEN
Reseda, California



DEDICATED
TO ALL LOVERS OF
BEAUTIFUL BIRDS



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TO COLOR PLATES

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FINCHES

THEIR CARE AND BREEDING

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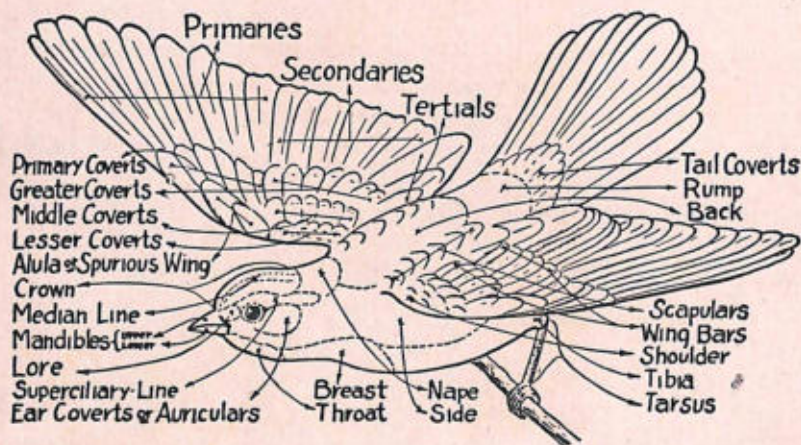
PREFACE

The name Finches, as applied to birds, is a rather indefinite name given to a large group of small birds, embracing several well defined and distinct families, such as Buntings, Sparrows, Grossbeaks, Waxbills, etc. Therefore, for the most part, this book will be confined to birds of the Finch family that are most desirable for cage and aviary life. A few of the more popular birds not related to the Finch family, yet that go nicely with a collection of true Finches are included.

The writer has chosen for discussion only the hardiest and most desirable species, birds that are most adapted to cage and aviary life. I do not presume to know all there is to know about this fascinating subject but have endeavored to confine this thesis to those varieties that have come under my personal observation as a breeder.

The object of the book is to aid those who are desirous of acquiring a pair or a collection of these popular birds, to offer suggestions as to their proper food and care and to help those who are interested in breeding them, particularly the amateur bird lover. If the veteran Aviculturist can glean a few helpful suggestions from these pages also, then the writer will feel more than justified in the undertaking.

There are many hundreds of Finches and other small birds throughout the world that have not yet been classified by Ornithologists, and there are probably many hundreds more in remote and inaccessible parts of the world that have not yet been seen by civilized man. These will be left to the seasoned Ornithologist to discuss and classify. Our book is written only for the true Aviculturist.



Guide to Description of Plumage



STRAWBERRY FINCH



Color Plate C

Top — Orange Cheeked Waxbills
Text on Pages 32 and 67

Bottom — Gray Java Rice Birds
Text on Page 43

BIRD KEEPING

When one takes up Finch breeding it is well to begin with the study of proper housing conditions. One must decide whether cages or out-of-door aviaries are to be used and plan from the very beginning for the comfort of the birds. Whether one wishes to keep a large number of birds in an outside aviary or a few pairs, or even one pair in a cage, it is not at all necessary to invest a large amount of money in expensive equipment. In fact much pleasure is derived from planning and building one's own aviary or breeding cage, but the main thing to remember is to plan for the birds' comfort and convenience.

On pages 27 and 39 are shown drawings of both indoor and outdoor aviaries. They may be built as elaborate as one wishes to build them, but the thought to carry out in the construction of any building is the comfort of the tenant. Seed pans and drinking cups should be placed in the most conspicuous places to make sure the birds can easily locate them.

Have the cage or aviary ready when the birds arrive, perches in place, seed cups filled with seed and water cups filled with water. It is well to supply the new arrivals with distilled or boiled water, thus eliminating any chance of diarrhoea that might be caused by the change in drinking water. Give the boiled water for a day or two and then gradually add the local water until the birds are accustomed to it. Have the bottom of the cage covered with clean newspaper. Place the seed and Health Grit in open dishes on the floor where they will easily be found.

Remember that grit is the birds' teeth and without it they cannot masticate their food. It is also a good idea to keep grit on the floor of the cage, as it helps to keep their feet clean. A piece of Cuttlebone should be fastened to the side of the cage well up from the floor near the perch, where the bird can reach it easily. A mistaken idea among many

people that Cuttlebone is something on which a bird may sharpen his beak is rapidly giving way to the truth, that it is actually a valuable food.

If the birds are to be kept indoors, have your cage or aviary ready for occupancy. Put it in a comfortable room out of drafts, where the new occupant will not be disturbed. After releasing the birds in their new home, stay away from them until they become used to their new quarters and are rested up a bit. Do not feed any green food the first day, but let them have a small quantity the second day and increase the amount each day until they are eating all they will clean up. Birds kept in small cages indoors should be covered at night with a cloth. In warm weather a light weight cloth is best; in cold weather a heavier one should be used. Birds kept in cages do not get as much exercise as do birds kept in aviaries; therefore, it is easier for them to get cold at night. Most of the Finch family like to sleep in little Nest Boxes or Gourds and these little comforts should be supplied them.

When putting birds into a strange outdoor aviary for the first time it is advisable to nail a few small shelves to the side walls well up from the ground or floor, near the perches, and place extra seed dishes on these. Birds may be timid for a few days and might not come down to the ground to eat. After they have become accustomed to their new surroundings the seed dishes may be put where the owner wishes them to stay, but always where they will be easily seen by the birds.

Most birds are fond of bathing and should be allowed this privilege frequently. Place a shallow dish of water on the floor of the cage or aviary for their use.

Birds are truly happy in cage or aviary when accorded the proper care because the struggle for existence that goes on in the wild state is eliminated. Some of the beautiful birds we sometimes see in private collections are now practically extinct, there being often only a few pairs in captivity and none at all in the wild state. It is a well known fact among Avicul-

turists that the life of the birds in captivity is from three to six times as long as life in the wild state. In an aviary they are protected against the ravages of storms and wild animals (as well as humans with guns) which prey upon all smaller creatures. If those who are interested in the fight against the extermination of these gems of the air had realized a few years earlier just what was taking place in the bird world, and had begun their work of saving them from being ruthlessly killed, we would today have many more of these lovely creatures that God made to beautify the world in which we live.

Many Doctors find Aviculture the best panacea for the tired business man and prescribe the keeping of birds to professional men and office workers everywhere as a delightful diversion as well as a relaxation for nerves that have been at a tension. Many Doctors are taking their own prescription and finding, after a day of listening to "grunts and groans" that there is nothing so restful as a trip to the bird room or aviary.

Bird raising is a fascinating hobby and one in which the American people are just beginning to interest themselves. We in America are so busy looking out for the "future" that we forget we are living in the "present" and by the time we actually arrive at that "future" we have worked so hard trying to amass a fortune that we are nervous wrecks and begin looking around for some way of getting back to nature, some way of getting our minds off the wild, mad race we have so tensely won or lost. Bird keeping will usually meet this need.

There may be some who do not care for a large aviary of birds but greatly enjoy the antics of a single pair of brightly colored birds, who with their pretty colors and cheerful manners will make a bright spot in the most somber surroundings.

Bird keeping is truly a game and one so intensely gripping and fascinating that it usually gets "under the skin" and we seem never to lose interest in it. As a study for children there

is nothing that will hold the interest as surely as will bird breeding. Wherever bird study has been taken up in the public schools it has been found that the students of these classes show more interest in their studies and are more anxious to learn than in any other branch of public school work.

GLOSSARY OF TERMS USED

Below is a glossary of the terms which will be used throughout this book.

FINCH MIXTURE: A mixture of seeds that forms the principal diet of practically all members of the Finch Family, consisting of the following: 4 parts small yellow or white millet, 1 part large red millet, 3 parts large yellow millet, 2 parts plain canary seed.

HEALTH GRIT: A good, sharp grit, containing bone, shell, sulphur, charcoal, iron sulphate and a touch of salt.

COMMERCIAL INSECT FOOD: A ready-mixed food for soft billed birds obtainable at most bird stores, and sometimes called Mocking Bird Food. It usually contains ant eggs, dried insects, suet, hemp meal and other foods suitable for these birds.

GREEN FOOD: Any kind of freshly picked non-poisonous greens that grow in the bird owner's locality, such as lettuce, turnip tops, spinach, cabbage, clover, alfalfa, dandelion, and various grasses.

NESTLING FOOD: A slow well baked, unsalted, unleavened bread ground finely so that it will mix easily with boiled egg. This food can be bought in sealed packages at any bird store. A good substitute may be found in unsalted cracker meal.

FRUIT: The word fruit generally would mean any variety of our well known fruits, but when used in the following pages will mean **ONLY** apples and oranges, unless other fruits are specified.

PEPTONE: A commercial food containing a large variety of various seeds such as thistle, poppy, flax, lettuce, red pepper, charcoal and many other foods that are valuable in the proper feeding of Finches and other birds.

SPRAY MILLET: Small Indian Millet in the head, hand picked just before the seed is ready to fall out. It is then tied into convenient bunches and sold at most bird stores.



SOCIETY FINCH

(*Uroloncha domestica*)

Habitat—Propagated by man.

Size—About $\frac{2}{3}$ that of the Canary.

This little guinea pig of the bird family is the most docile of all the Finches having always been bred in captivity.

The Society or Bengalese Finch, as he is sometimes called, was developed by the Chinese many years ago by cross breeding several of the Asiatic Finches. Having never been a wild bird, he knows nothing but cage or aviary life. There are three color combinations in this lovely little finch: the brown and white mottled, the fawn and white mottled, and the pure white. The last named being the rarer is the more expensive of the three colors.



Small Finch
Nest Box

They will breed just as well, if not better, in a regular Canary breeding cage than in an aviary.

The male and female are so nearly alike that it takes a practiced eye to tell them apart. This does not mean that the dark colors are distributed alike on male and female, for such is not the case. All of them are beautifully mottled, but no two are exactly alike. In fact one of the interesting things about breeding these little fellows is the uncertainty as to what the babies will be like, for they are not always like their parents.

The male sings a little, but his song is low and modest. The attractive part of his song is the quaint little dance which usually accompanies it. The female sometimes attempts a little song of her own, but she is not nearly as jubilant over her song as is her lord and master, especially when he is trying to attract her.

When the male is courting he spreads his tail until it resembles an open fan, puffs out his chest and dances along the perch or on the floor of the cage, depending upon where she may be, twisting his neck around until he is looking straight into her face as if trying to show her how handsome he is. He continues this singing and dancing until copulation takes place.

Society Finches are always busy either building nests or raising their families. Fourteen days is usually the time taken for hatching but it is well to allow two or three days beyond the given time as they do not always begin to sit, or incubate, until the third egg is laid. Occasionally a pair will have four or five eggs before starting to sit in earnest. They will take turns incubating the eggs during the day, but both stay on them at night.

When the babies are hatched feed Nestling Food, mixed with hard boiled egg, as well as the regular seed mixture.

Societies are often used as foster parents for the rarer Finches, who, because of their temperamental dispositions sometimes neglect to feed their own young.

If one has never raised Finches in a breeding cage there is no better bird to begin with than the Societies, as they seldom prove a disappointment, for they are gentle and easy to care for. In fact they are far easier to breed than Canaries and will continue to breed any month in the year as long as the nest box is left with them. After the babies have been out of the nest two or three days, remove the dirty nesting and give them new material with which to build a new, clean bed for the next clutch of eggs.

It is well to wait until the first or second egg of the new clutch is laid before taking the first babies away from their parents. By that time they are usually old enough to feed themselves. Put them in a small cage with clean grit on the floor and water where they will see it. Put the seed in an

open top dish measuring at least three inches across, so they will see a large surface of seed. Feed the young birds the regular Nestling Food with hard boiled egg for a few days. Watch the seed dish for husks, for when they are eating hardily of seeds there will be an accumulation of husks in the seed dish. This indicates that they are eating plenty of seeds and the Nestling Food can be left off gradually.

Society Finches do not require much green food but should be fed a small amount.

STRAWBERRY FINCH

(*Amaduvade*)

Habitat—India and Malaya.

Size—About $\frac{1}{3}$ that of the Canary.

This little bird is one of the most popular of all the Finches, and there are many reasons for this. First of all, it is not usually an expensive bird; another is its docility, and last but not least is its beautiful color and sweet song.

A good many years ago I kept a pair of Strawberries in a cage in a sun parlor. The room was a wilderness of flowers and ferns, and was naturally moist and warm. When my birds arrived they were in perfect color and plumage and I hung their cage from a bracket above a beautiful feathery fern. The artistic effect was perfect, but alas, I was doomed to pass through a peculiar experience. Soon they began changing color and losing their feathers until they had only their tail and a few flight feathers left. They seemed well, ate as much as ever and the little man kept singing away as if he thought himself fully clothed and handsome as ever. This condition existed for a long while until quite by accident I learned of the harmful effects of the sun's rays shining on



Color Plate D

Black Hooded Red Siskin
Green Singing Finch
European Gold Finch

Mexican Yellow Siskin
Red Headed Linnet
Text on Page 65



the birds through glass, causing premature moult. I moved them into another room, and very soon to my delight they began to grow new feathers and within a few weeks my birds were just as nice looking as ever. All of which goes to prove that all live things will respond to the proper care and treatment.

I believe that ninety-nine times out of a hundred, if a bird is in good condition when one buys it, and later proves disappointing, it is because local conditions are not conducive to its happiness and by turning on the white light of investigation we will soon be able to determine what is wrong. We will usually find the trouble to be lack of care or improper food. Watch the seed cups in your cage and if you do not see a sufficient quantity of husks around the cup you may know that your birds are not getting what they should have to eat.

Strawberries will nest in an aviary or a large breeding cage indoors. A few live worms or tiny bugs each day while feeding their young are helpful, as well as the usual nestling food with hard boiled egg. Commercial Insect Food is an excellent substitute for live insects.

Feed regularly the ordinary Finch Mixture. A little Peptone should be added two or three times each week. Strawberries are also very fond of Spray Millet.



SHAFT TAIL FINCH

Habitat—Northern Australia.

Size—A little larger than the Canary.

The Shaft Tail or Long Tail Grass Finch as he is commonly called, is one of Australia's most interesting and attractive Finches. The blending of the soft pearl gray of the head and the rose gray of the body is in itself a work of art. The rose gray color has been called by some authorities rose fawn, but be that as it may, its chief attraction is the way in which the colors are blended.



Nesting Gourd

The head is pearl gray and the beak yellow, a black slash beginning at the beak goes back through, but not past, the eye. Under the lower beak is a large black spot which looks for all the world like a large black plush button or bib. This he mysteriously manages to pouch forward when he is singing his love song to his mate. There is a broad band of black between the rose fawn of the breast and the white feathers of the lower abdomen. All the black on this bird appears to be of a rich silk plush. The tail is black with two long center feathers or quills extending from two to three inches beyond the regular tail feathers.

The female is so much like the male that it takes a practiced eye to tell them apart. Usually the bib of the female is narrower than the bib of the male bird and the general appearance of the female is less masculine than that of the male.

The nesting habits are practically the same as those of most other Finches. If breeding in a cage, a large roomy one should be used with either a Gourd or a Finch Nest Box for the nest. A Gourd is always good and lends rather an artistic atmosphere to the cage.

They will do better if kept one pair in a large cage by themselves where no other birds of their own kind can disturb them, although, strange as it may seem, they agree quite well in an aviary with other varieties of Finches.

They will lay from five to nine eggs and successfully raise their babies if care is taken not to disturb them. The Shaft Tail resents having her nest peeped into, so do not let curiosity get the best of you; just wait until the brood are heard to beg for food to satisfy your curiosity.

Feed Shaft Tails regular Finch Mixture, a little commercial Insect Food occasionally and greens. A little grated carrot should also be fed to them along with their other food. While feeding their young they should have nestling food mixed with hard boiled egg daily as well as the regular food outlined above.

MASKED GRASS FINCH

(Poephila personata)

Habitat—Northern and Western Australia.

Size—About that of the Canary.

This little Finch is a first cousin to the Shaft Tail, both being Grass Finches. He is of a soft rose gray, back a little darker, breast and abdomen lighter rose brown with a broad black band across the lower body. The tail is black. The beak is a pretty creamy tan with a black mask directly back of it.

They are uncertain breeders and require the same general care as the Shaft Tail, although they are a little more difficult to breed.

Feed the same as the Shaft Tail Finch.

BUTTERFLY FINCH*(Cyanocephalus cyaneus)***Habitat**—Mexico.**Size**—About that of the Canary.

The Butterfly Finch is really a member of the Bunting Family and is commonly called the Nonpareil Bunting. The male's beautifully colored plumage is always attractive. In the wild state the head is a royal blue which projects well down the back. The shoulders are a brilliant bronze green with a greenish yellow back or saddle. The whole of the under part from the chin to the abdomen is red, but in captivity, after he moults, the red of the breast turns to a rich yellow, which the writer considers really more beautiful than the original red.

The female is a very pretty olive green without any of the bright colors of the male. While she is not as attractive as the male bird, she is always trim and neat.

I have never kept these birds in a small cage but in an aviary they are most attractive.

They should be fed the regular Finch Mixture with a little Hulled Whole Oats added and always plenty of fruit, such as apples and oranges. It is also well to feed commercial Insect Food about three times a week.

Keep a plentiful supply of Health Grit and Cuttle bone before all birds at all times. This is so very important that I feel justified in repeating this advice often.

It is well not to get the Nonpareil Bunting confused with the Pintail Nonpareil. The Pintail Nonpareil is rather a delicate bird and is not advisable for beginners. It is similar in color and requires the same general care, but owing to its delicacy is not as desirable as the above species.

Both the Butterfly Finch and the Pintail Nonpareil are very difficult to breed.

LADY GOULD FINCH*(Poephila mirabilis)***Habitat**—Australia.**Size**—That of the Canary.

The Lady Gould is the king of all the Finches and I hesitate to try to give a description of him. It is almost impossible to paint a word picture of this beautiful little Finch, and no artist could put the life in his colors that nature has put into the coat of these wonderfully colored birds.

In the red headed variety the beak is reddish purple with a tiny black line between it and the red head which appears to be covered with red velvet. Back of the head is a black line which extends under the chin and broadens a tiny bit. Back of the black line is a gorgeous turquoise blue which has a metallic sheen like the sheen of a Peacock's head feathers. This blue shades into a bronze green on the back of neck and shoulders. The back is solid green, while the flight feathers are a darker green, shading into nearly black. Beginning under the chin and extending across the breast from wing to wing and well down over the upper part of the breast is a large spot of color which resembles nothing so much as it does the purple of the pansy. Adjoining this is the deep golden yellow of the lower breast or abdomen, which shades into white at the vent. Now if there is any other color you might think of just throw it in for good measure and you might come a little nearer to doing justice to this, the most colorful of all the Finches.

The Black Headed variety is like the Red Headed in all colors except the head. This is solid black with no red at all.

The female of both species is like the male, except that the colors are less brilliant.

Their breeding season in this country begins in the Fall, due to the fact that the seasons in Australia are just the reverse of our own. Their nesting habits are simple but they

do not like to be annoyed after their housekeeping begins. They like a regular Finch Nest Box or Nesting Gourd in which to nest, but I have always found them lazy builders, so when I hang their nests up I have the nesting material arranged in the nest box for them. I always leave an ample supply of grass and feathers lying around for their use in building. I have never had a Lady Gould build a nest in the branches of the shrubbery with which I keep my aviaries plentifully supplied.

The Lady Goulds will breed and rear their young just as easily in a cage in the house as they will in an out-door aviary. They lay from six to ten eggs, often hatching and raising them all. In fact a fellow breeder claims to have raised eleven youngsters from one nest, but this is an exception and is not often accomplished. They usually begin breeding about the latter part of August and if conditions are right should have three nests of young during the breeding season, which lasts until March of the following year. The male sits on the nest during the day while the female sits at night. The eggs require about sixteen days to hatch. Never be impatient and disturb them while hatching, as you may have mistaken the day on which the young are due to hatch.

The babies are not as colorful as their parents, being a uniform soft gray green. They do not get their brilliant plumage until they are ten or eleven months old.

It has been said that Lady Goulds should have live insect food while feeding their young, but I have never given mine any kind of live food. I tried keeping it before them while breeding, but after giving it a thorough trial I am convinced that it is not necessary. I always feed a good Nestling Food (mixed with hard boiled egg) cracked Hemp seed and the regular Finch Mixture with a little extra Canary seed added. I also feed Peptone and Spray Millet, as well as plenty of green food, Cuttlebone and Health Grit.

SPICE FINCH

(*Munia punctulata*)

Habitat—India.

Size—That of the Canary.

The Spice Finch is one of the prettiest of the modestly colored Finches. The head and back are a rich chestnut brown. The feathers of the breast and sides are grayish white, edged with brown, giving them an appearance similar to the scales of a fish.

They have a little song, not much for variety, but rather soft and sweet.

Their nesting habits are about the same as the Lady Gould.

Their diet consists mostly of Millet and Canary seed. A well proportioned Finch Mixture is usually the proper food. Green food, Cuttlebone and Health Grit must also be supplied, and when breeding, nestling food and Spray Millet are invaluable.



Cuttle Bone Feeder

SAFFRON FINCH

(*Sycalis flaveola*)

Habitat—Southern Brazil and Venezuela.

Size—A little larger than the Canary.

The body of the male is greenish yellow, back and wings streaked with grayish black feathers. The head is yellow with a bit of orange on the forehead. The breast and throat are pale yellow, while the tail is greenish black.

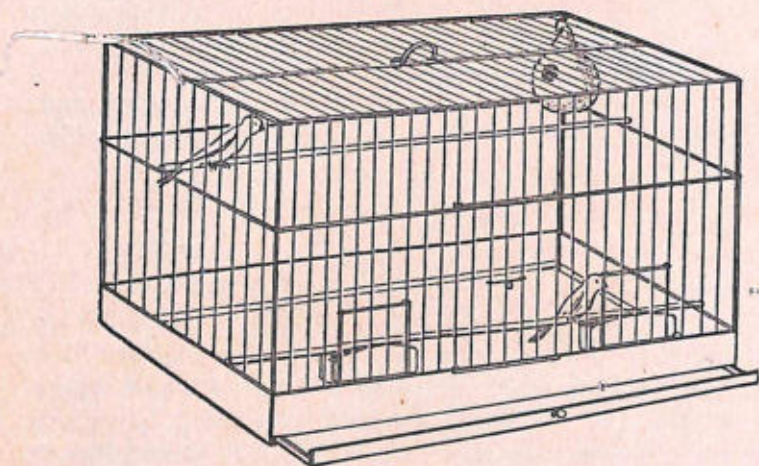
The female is like the male but her plumage is not quite as bright and she does not have the orange forehead.

The Saffron Finch is a very hardy bird and a good breeder. They will do well in an aviary of assorted birds such as Rice

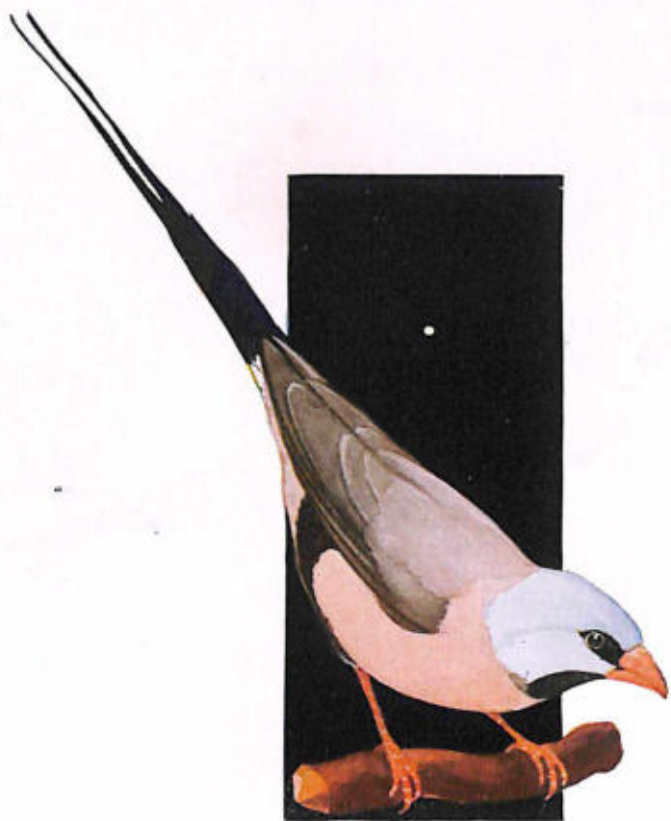
Birds and Weavers, as they are quite capable of taking care of themselves. However, with the smaller birds, they are often disturbing.

The young are a mixed pale gray not unlike a young Sparrow. They build an open nest very much like the nest of a Canary, but I have had them build in a Finch Nest Box.

For food they require Finch Mixture, greens, Cuttlebone and Health Grit. While they are feeding their young they should be given Nestling Food mixed with hard boiled egg and Commercial Insect Food.



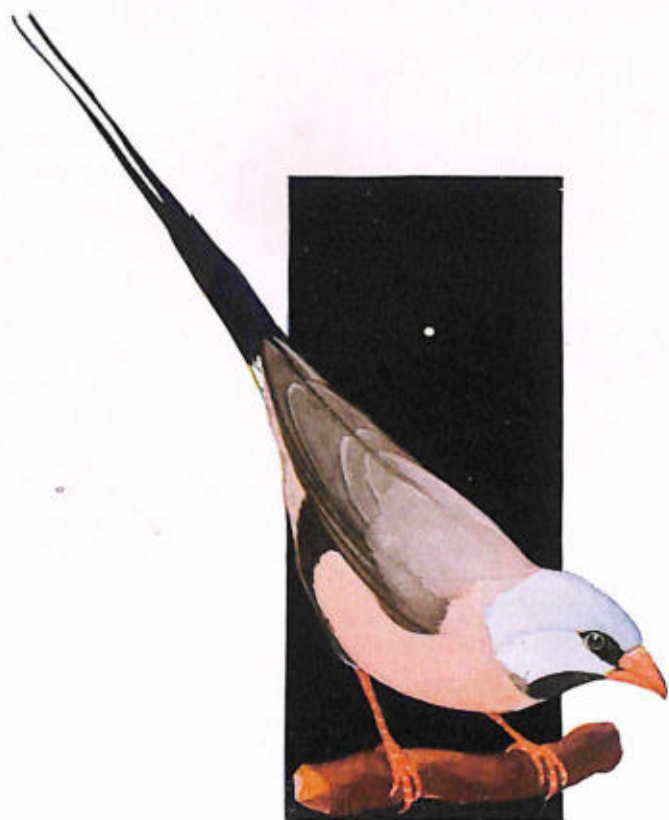
Breeding Cage Equipped for One Pair of Finches



SHAFT TAIL FINCH



ZEBRA FINCH



SHAFT TAIL FINCH



ZEBRA FINCH

TRICOLORED PARROT FINCH*(Erythrura trichroa)***Habitat**—The Moluccas and Solomon Islands.**Size**—About that of the Canary.

This bird is about the size of a Canary but because of his rather thick plumage and short tail, may appear to be a little larger. His body is a deep rich green, head royal blue, the tail red. In appearance both sexes are alike.

The habits of this bird are very much the same as those of the Lady Gould Finch. They like to nest in Gourds or Finch Nest Boxes the same as do most other Finches. The eggs are about the size and shape of a Canary's but are a pure white in color. They require about fourteen days to hatch.

The breeding season is controlled somewhat by climatic conditions. The early Fall is usually the season they seem to prefer; however, when you see the male chasing his mate about in the cage or aviary, you may know that the breeding time is near.

Feed the usual Finch Mixture with a little Thistle and Poppy seed, green food, Health Grit and Cuttlebone. When they are rearing young feed them a good Nestling Food mixed with hard boiled egg. Feed also Spray Millet when obtainable. They require the same general care as the Lady Gould Finch.

RED HEADED PARROT FINCH*(Erythrura psittacea)***Habitat**—New Caledonia.**Size**—About that of the Canary.

This bird is practically the same in appearance as the Tricolored Parrot Finch with the exception of the head, which is a bright red. The tail is bright red, while the rest of the

body is a solid rich green. There are only two colors on this beautiful bird, red and green, whereas the Tri-Colored variety has the three colors, blue, green and red.



Nesting Food
Cup

Feed the usual Finch Mixture, Thistle and Poppy seed with green food, Health Grit and Cuttlebone. They require the same general care as the Lady Gould Finch.

ZEBRA FINCH

(*Taeniopygia castanotis*)

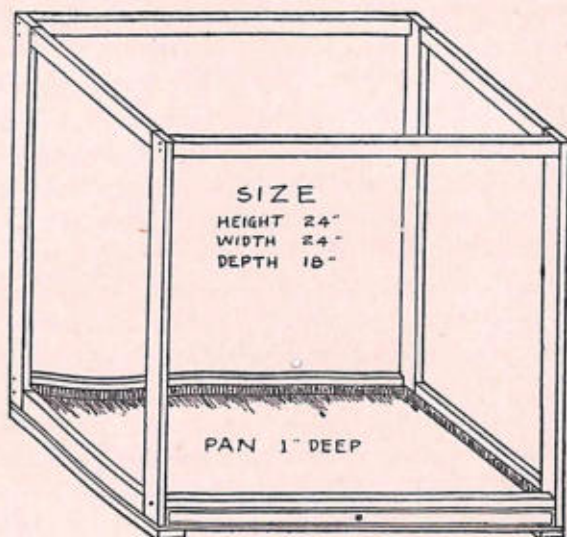
Habitat—Australia.

Size— $\frac{2}{3}$ that of the Canary.

This little fellow is one of the liveliest of all the Finches. He is always busy raising a family and even though he is not as expensive as many other species he is one of the prettiest and most popular.

The beak is coral red and appears to be made of sealing wax backed up against a face of gray black. A white band extends from the eyes, which are hazel, to the throat. The back is gray shading into a darker gray on the rump. The tail feathers are black and evenly marked with white bars. The throat of the male is marked with black and white bars running diagonally in a series of stripes down to the breast, which is a soft pearl gray, shading away to a light tan at the vent. The sides of the body just below the wings, are orange brown with white spots interspersed, while the legs are a bright red. On each cheek there is a dainty patch of burnt orange.

The female is similar to the male described above, except that she is without the orange cheeks, the breast stripes and the spotted sides. If one wishes to breed them indoors, the



A GOOD HOME-MADE BREEDING CAGE

The framework of this aviary is made entirely of $1\frac{3}{4}$ " by $\frac{3}{4}$ " lumber. This frame is to be covered with $\frac{1}{2}$ " square mesh wire fabric, painted dark green for better visibility.

First make the base by nailing onto two timbers a square of three-ply veneer board 18" by 24". Next nail the four uprights as shown in the picture. The rest is too plainly illustrated to need explanation except to explain that the narrow piece in front, over the pan is $\frac{3}{4}$ " by $\frac{3}{4}$ " and is made by ripping one of the $1\frac{3}{4}$ " by $\frac{3}{4}$ " timbers. This piece is put in so that the wire fabric can be securely nailed to it above the pen.

For a door, cut a $3\frac{3}{4}$ " by $4\frac{3}{4}$ " opening in the wire fabric in the exact center of the front and then hang a 4" by 5" piece of the wire fabric over it, so as to swing upward to open.

Have pan of galvanized sheeting made to fit cage. This aviary can, of course, be made any size.

ordinary breeding cage is quite the thing. Always use open cups for seed and water, as the ordinary Canary cups that fasten on the outside of the cage are not good for any of the Finch Family. They do not like to put their heads into a cup of this type. I have known people who bought Finches in perfect condition, as well and healthy as a bird could be, who put them in a cage with cups on the outside of the cage and the little fellows would live only a day or two. The owners, besides being disappointed in the venture, would conclude that either the dealer had sold them inferior birds or that they themselves simply were unlucky with them. As a matter of fact the poor birds simply starved to death. And by the way, let me say right here there is no such thing as luck in bird breeding. Nothing happens by chance. If this were so the hobby would not be nearly so fascinating.

Never will I forget the first nest of Zebra Finches that I raised. Each day I had watched them build their nest until it was finished and shortly thereafter I missed the female. Then as I watched the young husband guard the entrance to the nest for fourteen days I could keep still no longer and peeped into the box. As I did so she flew out of the nest like an explosion from a gun and I saw six little grey-white eggs. I was afraid I had scared her so badly that she would not go back to the nest, but such was not the case. She was back on the nest in a few minutes, but after this experience I determined not to bother them any more. However, when about a week had passed I noticed that she was off the nest most of the time. I therefore felt justified in having a second look, so I took another peek and there they were. All six eggs had turned into little gray-black birds that looked for all the world like six little bugs. After that I was all patience and one morning about two weeks later, when I went to feed them, I heard the queerest noises—very much like children in the distance blowing tiny tin trumpets like the little prizes

we used to get with penny stick candy. Then I knew I had been rewarded for my seemingly long wait, for there they were out of the nest and on the floor of the cage with their little heads twisted around to their shoulders and their mouths wide open begging to be fed. The little mother and father danced around excitedly trying to fill up their little mouths which looked exactly like so many open caverns.

No sooner were these little ones reared and off the hands of their parents than another nest was started.

I feed a regular Finch Mixture which contains mostly small Yellow Millet to my Zebra Finches. I also feed a plentiful supply of Cuttlebone, Health Grit and Spray Millet, but I feed green food sparingly. While the parents are feeding their babies I give them Nestling Food and egg, as it is quite a task for the parents to crack and shell enough seeds to satisfy a large nest of young. Feeding a family keeps Mr. and Mrs. Zebra on the jump all the time. If a good nestling food cannot be procured, one can be made that will answer the purpose. Boil an egg about thirty minutes, shell and mash it thoroughly. Add about one heaping tablespoonful of unsalted cracked crumbs and work together with the egg. Usually the egg is sufficiently moist to make the moisture just right. However, if too dry, add a little water, being careful not to make it soft and mushy, as soft, mushy food is apt to cause diarrhoea.

The writer has raised thousands of these lovely Finches, having bred and raised as many as 7,000 in a single season from about 600 pairs of breeding stock. Some of the high lights of this experience will no doubt be of interest to the reader. In the first place, the breeding stock was kept twenty mated pairs to an aviary, like the one shown on page 39. In each aviary were hung on the walls twenty-five covered nest boxes. The birds were mated up and started to work in February and were kept working until the following Novem-

ber, during which time they produced better than 7,000 fine youngsters. This is an average of about eleven and one-half birds to the pair. Of course some of the pairs produced a great many more young than others. Several pairs produced as many as twenty-five young, whereas some only raised a single clutch. The largest number of young raised in one clutch by a single pair was eleven, which was very unusual. Some of the young in this nest had to be removed to other nests before they reached the flying age, as the nest box would not hold so many.

I also made several interesting experiments with these wonderful little Finches. I knew that Zebra Finches were prolific breeders and started nesting when quite young, but was amazed to learn that it was possible to breed them when only six weeks old. For this experiment I recorded the age of a flock of youngsters that were too young to sex. I put them all together into a fair sized aviary equipped like my regular breeding aviary. Within a short while they had paired off and were building nests. One pair started laying when only forty-two days old and laid four eggs. This pair actually reared two fine youngsters from this nest. Most of the other birds in the aviary did practically nothing until they were from three to five months old. I of course do not advocate breeding birds so young, but felt justified in making the above experiment from a scientific standpoint.

A peculiar thing about Zebra Finches is that when the young leave the nest they look very little like the parent birds, being mostly black and gray. They do not begin to put on any of their brilliantly colored plumage until about five weeks old.

AFRICAN FIRE FINCH*(Lagonasticta senegala)***Habitat**—Africa.**Size**— $\frac{2}{3}$ that of the Canary.

The male Fire Finch is almost solid dark red, feathers are quite compact, back of head and shoulders reddish brown with tiny yellow rings around the eyes.

The female is a pretty shade of gray brown with tiny little white spots on her breast. Her rump feathers are red.

Fire Finches are only fair breeders.

However rare this little fellow may be in this country, it is nevertheless a nuisance in the towns and villages of the Niger districts of Africa, where it builds its nest under the eaves of houses and in any cracks or crevices it may find. Its nest may be found in any kind of building, very much the same as our English Sparrow nests in America.

In an aviary they will select a corner which is almost entirely hidden from view and lay four or five eggs. They will hatch about four babies and usually raise only two or three of them.

Fire Finches should be fed Commercial Insect Food occasionally and plenty of greens. A few live insects should be given if possible while they are feeding their young, as well as the usual Finch Mixture and Nestling Food.

AUSTRALIAN FIRE FINCH*(Zonaeginthus bellus)***Habitat**—Australia.**Size**—About that of the Canary.

The Australian Fire Finch is extremely rare in this country and seldom seen; however, the writer feels that mention should be made of them in order to distinguish them from the African variety.

They are a lighter shade of red than the before-mentioned variety with a longer, slenderer tail. They are somewhat more attractive and require the same general care as the African variety.

COMMON AFRICAN WAXBILL

(*Estrilda astrild*)

Habitat—Africa.

Size— $\frac{2}{3}$ that of the Canary.

A very pretty bird of reddish brown above and reddish gray breast below, the male having more red on the abdomen than the female. Both male and female have a red streak beginning at the beak and going straight back to and through the eye. The rump is red and the tail is black. They are beautiful little birds, are easy to care for and are quite contented alone or in an aviary with other birds. They are not considered good breeders but have, however, been bred in both aviary and cage.

For food they require the regular Finch Mixture, Green Food, Cuttlebone and Health Grit. They should also be supplied with Spray Millet.

Their nesting habits and general care are the same as the Fire Finch.

ORANGE CHEEKED WAXBILL

(*Sporaegmthus melpodus*)

Habitat—Africa.

Size— $\frac{2}{3}$ that of the Canary.

The Orange Cheek, one of the prettiest of the small Finches, is another of the many African Waxbills. The head is a soft pearl gray with red beak and bright orange cheeks. The back of the bird is a darker gray with deep red rump feathers, while the tail feathers are reddish black. These birds are very attractive with their slim little bodies, darting about always in search of new adventure.

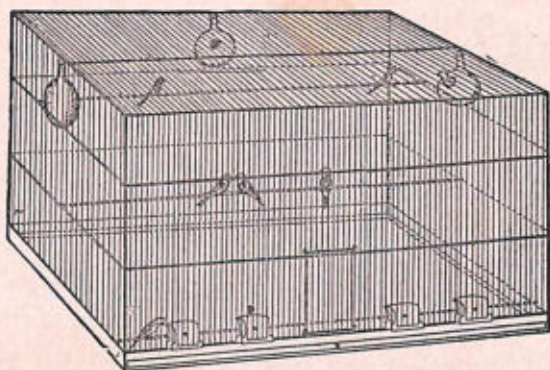




Whether kept in cage or aviary they should be allowed a small hiding place or closed nest box for seclusion. This is especially true when they are in a cage in the house, for here there is apt to be more or less disturbance. Strangers who do not know birds, invariably rush up to the cage with some exclamation of pleasure. In such cases the birds are frightened, and therefore, out of simple kindness to them, you should provide a little hiding place or sanctuary for them.

In an aviary they will build in a Finch Nest Box or Gourd placed about three or four feet from the ground.

Feed the regular Finch Mixture, Cuttlebone and Green Food, as well as Spray Millet of which they are very fond. Feed nestling food and hard boiled egg also when rearing young. Their general care is the same as that of the Fire Finch.



**Breeding Aviary Equipped for Three
Pairs of Finches**

CORDON BLEU FINCH

(*Uraeginthus bengalus*)

Habitat—Africa.

Size— $\frac{3}{4}$ that of the Canary.

The Cordon Bleu is one of the prettiest of the African Waxbills. He is about the size of the Zebra Finch but more slender and has a longer tail.

It is very hard to describe the color of this little fellow, as no description quite does him justice. His beak is crimson with a little black at the tip, which looks as though he had dipped it into black ink. The head, throat, breast and sides are "Cordon Bleu" or French blue. A spot of crimson on each cheek of the male has given rise in some quarters to the name of Red Eared Waxbill. The back and upper wings are a brownish green.



Finch Color Chart

The female is like the male except that she is minus the red spot on the cheeks.

Their breeding activities are simple after they become established in their new quarters. In an aviary they will build in a high place if they find it secluded, or they will build in a low bush, or perhaps in a regular covered Finch Nest Box. They are not particular as to location but should be furnished with plenty of soft dried grass or fiber for nesting material.

Feed the regular Finch mixture, Cuttlebone, Health Grit and green food. When the young are hatched feed Nestling Food mixed with hard boiled egg in addition to the seed diet.

EUROPEAN GOLD FINCH

(*Carduelis carduelis*)

Habitat—British Isles, Russia and Central Europe.

Size—That of the Canary.

In the European Gold Finch the sexes are so nearly alike that it is very hard to distinguish one from the other. However, as in most birds of the Finch family, it will be found upon close observation that the female is not quite as brilliant in plumage as the male, especially on the head.

The face is red, backed up by a black cap and white cheeks and throat with a band of black back of the white cheeks. The body is brown, slightly tinged with gray, gradually becoming white underneath. The vent and rump are white. The tail feathers are black tipped with white, while a broad band of yellow extends across the back, making a very striking contrast in colors.



Spray Millet

Gold Finches should be cared for about the same as Canaries, but they require a more varied diet such as Thistle and Poppy seeds as well as the regular Canary Mixture. Peptone is a commercial food which I feed to all birds requiring a greater variety of seeds than the ordinary Finch Mixture.

When they are feeding their young add nestling food and hard boiled egg.

European Gold Finches are often used for cross breeding with Canaries and the young from such crosses are very pretty and are sometimes good singers. They are, however, Hybrids and, of course will not reproduce.

BULLFINCH*(Pyrrhula pyrrhyla)*

Habitat—British Isles.

Size—1½ times that of the Canary.

The Bullfinch, a little larger than the Canary, is a short, stocky bird with a short, stocky beak. He is a bird with a sweet disposition but has a rather hard, stubborn name—in fact the Europeans call him "Bully." This is not because he has a bullying disposition, as his nature is quite the opposite, but the English people are very fond of him and affectionately give him this nickname.

The male has a brick red breast and soft gray back, while the flight feathers and tail are black. He has a short black bar on the upper wings separated from the flight feathers by a patch of white. His head is black, giving him the appearance of a man with his cap pulled well down over his eyes.

The female wears the same black cap but her dress is entirely gray and black.

It must not be taken for granted that because this bird has such a bovine name that he is a coarse, uncouth creature, for he is in fact just the opposite. One is apt to think from his name and buxom appearance that he is an extremely hardy bird, but I have not found him so. In fact he is rather delicate and given to periods of extreme quietness or melancholia. In such case he needs to be given a change of diet, for the chances are he has been neglected, which he does not like.

"Bully" is a nice whistler and if taken while young can be taught to whistle two or three tunes. In England they teach them to whistle "God Save the King" for the home folks, and "America" for the American trade, but it is all the same to "Bully."

If one wishes to cross breed with these birds, the female is the one to use and when paired with the Canary will pro-

duce lovely hybrids which are of course mules, but make nice singers and show birds.

Their food requirements are the regular Finch Mixture and Peptone. When they are feeding their young, add a good Nestling Food mixed with hard boiled egg to the above diet.

Note—During 1937 a law was passed by the U. S. Department of Agriculture, prohibiting further importation of Bull Finches.

STAR FINCH

(Bathilda ruficauda)

Habitat—Northwest Australia and New South Wales.

Size— $\frac{2}{3}$ that of the Canary.

The Star Finch, sometimes called Rufus Tailed Finch, is one of the rare Finches from Australia, mainly Northwestern Australia, Queensland and New South Wales.

The body above is olive green, but I think I shall start at the beak of this little fellow and follow through with the description of him to the tip of his tail.

The beak is a fiery red, merging into a bright red face, backed by countless little white or silvery spots which go down the body on the sides of the bird and grow larger and farther apart as they reach the abdomen. The throat and breast are a pale olive green with rather a creamy shade thrown in which shows plainly through the little silvery spots. This must be the reason for the name "Star Finch," as one gets the impression of a starry sky against a background of pale green. The rump is a dull garnet red, the tail a duller red, feet and legs yellow. It has no song to speak of.

I tried for a good many years to raise these birds in an aviary containing only Star Finches but did not seem to have much success. They would lay their eggs and sit for a few days, then move out and leave them to be scratched out or eaten by other birds. After a few bitter experiences of this kind I decided to try them in a small aviary by themselves and

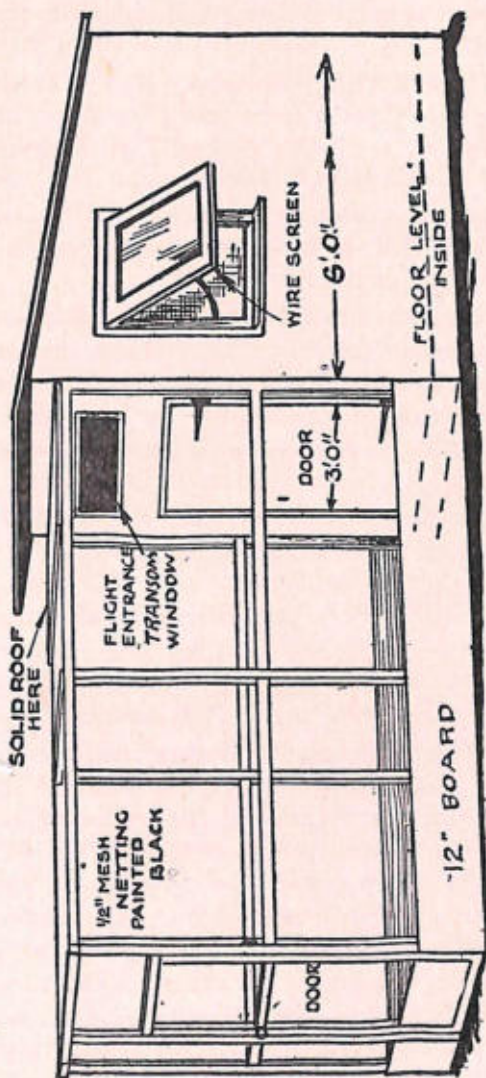
presto-change, it worked. I gave them plenty of tough grasses such as our well known "Devil's Grass," for building material. By having them in an aviary where I could watch them I soon found that they wanted to do their own building, whereas before, I had tried to make them nest in a box which they were not particularly anxious to do.

I believed that if I could study the natural habits of these birds that I would be as successful in raising them out of doors as I had been in raising them indoors.

I learned, after much experience and some disappointments, that they wanted to build their nests in shrubbery or bushes not too far from the ground. So I proceeded to bedeck my aviary with evergreen bushes about six or eight feet tall, interspersed with stalks of bamboo grass pulled up by the roots, thus creating a veritable wilderness into which I released several different kinds of Finches that I knew were agreeable. Very soon the whole lot were busy as could be darting in and out of their artificial "native haunts" with straws and grasses in their beaks and all were happy as could be.

I paid very little attention to the other birds, as I knew they would breed anyway, but watched my Stars closely and soon they had built an enormous oval shaped nest. I believe the nest must have been about the size of the largest cocoonut I ever saw, made by weaving straws, grasses, string and feathers, in and out until the dome-like affair was finished with a hole about the size of a fifty cent piece in one end.

When the building was completed they moved in and set up housekeeping in great style. The male would sit on a limb near by and utter his queer little mincing song, swell up his throat and bend back so far trying to impress one with his importance that I sometimes thought he certainly would fall off his perch. During these days I did not see the little lady at all, but I knew she was in the nest and that I would



A MODEL AVIARY

This Aviary is 14 feet deep by 6 feet wide by 7 feet tall, and is suitable for housing fifteen pairs of Finches. It should have a window on each side. Paint white or whitewash it on the inside to make it lighter. Leave the large door open in day time but close it at night for better protection.

soon have some tiny "stars" twinkling in my aviary "firmament."

One day, after a wait of about two weeks, I saw her sitting on a perch preening her feathers and looking for all the world as I thought a proud mother should look, so I let curiosity get the best of my better judgment, crept in, stood on a box to reach the level of the nest and peeked in. There in the nest as quiet and peaceful as a midsummer day lay six BABY MICE.

Well, my heart dropped with a dull thud, but I had proved to myself that these birds breed just as well out-of-doors as they do in-doors. But I realized that I could not raise birds and mice in the same aviary, because mice are very fond of bird's eggs and they like nothing better than a bird's nest in which to deposit their young.

I had many obstacles to overcome before I reached the conclusion that I might know enough about Star Finches to offer suggestions as to how to breed them. I believe most birds can be successfully bred in captivity if the environment is conducive to their comfort and happiness. If one is not concerned with the health and happiness of his birds it is reasonable to assume that breeding will not be successful.

For all cage breeding, the important thing to consider is to make sure of the proper kind of cage. An all-metal one is best, as they are sanitary and easier cleaned than any other kind. Arrange the cage (which should be about 16"x16"x14" deep for a single pair) where you expect it to stay, in a quiet place. Do not disturb the birds any more than is absolutely necessary. Give them a nest box or nesting gourd with plenty of nesting material; it is also a good plan to put a cloth around the sides, top and back of the cage. A white cloth is better, as it will not keep the light out but will serve admirably to keep the birds from being disturbed by any outside activity. Give them plenty of food consisting of the usual Finch Mix-



Color Plate J

Text on Pages 21 and 65



Color Plate K

Text on Pages 25 and 80

ture, Cuttlebone and Health Grit and of course fresh water every day. A small dish of Commercial Insect Food should be kept before them at all times. When the babies arrive, feed Nestling Food mixed with hard boiled egg, also feed plenty of greens.

DIAMOND SPARROW (DIAMOND FINCH)

(*Staganopleura guttata*)

Habitat—South Australia.

Size—A little larger than the Canary.

This is one of the rare Australian Finches that one seldom sees but always wishes for. The head is a beautiful gray, while the beak is all red. A black band extends from the upper mandible to the eye. The back is grayish green, while the upper tail feathers are fiery red. The tail is jet black. The breast and abdomen are white. A broad band of black separates the breast and the throat, while the sides are black, profusely marked with small white spots.

The male and female are alike in appearance.

They require the same general care as do the other Finches. Their food consists of the regular Finch mixture with a little large millet added. Always feed plenty of green food.

When breeding in captivity these birds seem to do better in a covered nest box.

THE SILVER BILL

(*Aidemasyne cantans*)

Habitat—Africa.

Size—A little smaller than the Canary.

The Silver Bill is a modestly garbed Finch, a little smaller and slenderer than the Canary. The beak is a silvery black while the head and back are pale tan, shading to a grayish white on breast and abdomen.

They are fairly easy to breed in cage or aviary using the ordinary Covered Nest Box or Gourd. They will cross with the Society Finches but the offspring of these crosses are mules and therefore will not breed.

Feed the regular Finch Mixture, Cuttlebone, Health Grit and green food. Their care and habits are the same as most of the small Finches.

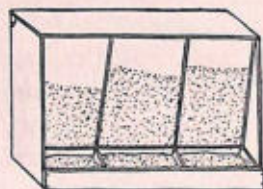
RIBBON FINCH

(*Amadina fasciata*)

Habitat—Africa.

Size—That of the Canary.

The Ribbon Finch is a common bird in Africa and is about the size of the Canary. They have practically no song but do make nice pets in a cage. A single pair in a cage will soon become quite gentle if care is used not to frighten them, and in this connection let me add that one should always move slowly when around any caged bird.



Aviary
Seed Hopper

It is rather hard to describe the color of the Ribbon (or Cut Throat) Finch. His plumage is very compact, the body feathers are a beautiful tan or fawn edged with dark brown, thus producing a scaly effect something like the Spice Finch. The male has a slash of

red from ear to ear across the throat which is bordered by light tan, nearly white, on either side of the red. Many people when seeing him for the first time will exclaim: "He looks as if he had a red ribbon tied around his neck." Thus they have named him the Ribbon Finch. The female is like the male except that she has no red on the throat.

Their nesting habits are simple, as they seem mostly to want to be left alone and will breed equally well in cage or

aviary. They should be fed the regular Finch Mixture and if breeding in a cage, given plenty of greens such as clover blossoms or leaves, spinach, alfalfa or lettuce. One should begin on the greens slowly, just a little pinch at first, increasing the amount gradually until they are allowed all that they will eat up clean. They are not too fond of greens but in cage breeding it is a preventive of eggbinding. Always keep Cuttlebone, Health Grit and toasted egg shells before them while they are mating. They are also fond of Spray Millet.

In an aviary they will occupy a regular Finch Nest Box, laying from five to eight white eggs, almost round but slightly oval that require about fourteen days to hatch. They require Nestling Food mixed with egg and Insect Food when feeding their young. Always begin feeding these foods the day the eggs are supposed to hatch.

Ribbon Finches are wonderful parents and very affectionate toward their young. They will rear nest after nest if properly cared for. The babies look like little black bugs having long extended necks with mouths on the ends. When they are being fed they open their mouths so wide that they appear to be little caverns and one fears lest the little mother will fall in.

JAVA RICE BIRD (JAVA SPARROW)

(*Oryzornis oryzivora*)

Habitat—Malacca, Java and Sumatra.

Size—About 1½ times that of the Canary.

There are two varieties of this bird, the white and the gray. The Gray variety is the original wild bird of the tropics.

The male and female look alike to the average person. In the Gray variety the head is jet black, the cheeks white, the body blue gray, the breast rose gray, the tail black and the beak cherry red. At certain seasons these birds are quite freely imported and may be purchased at a very low price.

However, these newly imported specimens are not recommended, as they are usually weakened from their long and tiresome journey.

It is not an easy matter to persuade the imported birds to start breeding, but the Java Rice Birds that have been bred in captivity are entirely at home and make free breeders. In the wild state they build dome-like nests in vines and bushes well up from the ground. They are built of straws and grasses and seem to be propped up with sticks. However, in a cage or aviary they require a covered Nest Box or Gourd.

The song of the Java is rather sweet but not as varied nor as musical as the Canary's. They like to go merrily up the scale and come merrily down again, while dancing to their own tune.

They make nice cage birds, as their habits are clean.

The White Java Rice Bird is the same size and shape as the Gray bird; however, he is all pure white except his red legs and red beak. These white birds are not known in the wild state, as they have been propagated by man from the original gray bird.

Java Rice Birds should be fed Canary seed, Millet seed, and Unhulled Rice. However, the Millet and Canary are more important than the Rice. Many people do not feed Rice at all. These birds often raise their young without Nestling Food, but it is best to feed it while the babies are in the nest.

PARSON FINCH

(*Poehila cincta*)

Habitat—Australia.

Size—That of the Canary.

This is another Australian bird closely allied to the Mask and Shaft Tail Finches. In fact it closely resembles the Shaft Tail, but is a little more thick set. The head is gray with a

black bib, body light brown, tail black, vent white. The female is like the male but the plumage seems to be a little duller. As in the case of the Masked Finch and Shaft Tail Finch it takes an experienced eye to tell the sexes apart.

The Parson Finch is not very common in this country, therefore quite expensive, although in the writer's opinion they are not as pretty as either of the other two Finches mentioned. Feed the same as the Shaft Tail Finch.

CUBAN MELODIOUS FINCH

(*Phonipara canora*)

Habitat—Cuba.

Size— $\frac{2}{3}$ that of the Canary.

Apparently this is a first cousin to the Olive Cuban Finch. Anyone seeing the two different species together would know immediately that they belonged to the same family. The front and sides of head are black. Throat black with yellow band beneath, extending across the front from ear to ear in the form of a crescent. A border of black beneath the crescent fades to a pale gray towards the vent. The flight feathers and tail are darker tinged with green.



Open Nest
Receptacle

The throat and face of the female are brown instead of black and the yellow crescent is rather dull. These birds like to build their own nests, weaving great domelike affairs with an opening in front. In an aviary they should be given some forked shrubbery in which to build. In a cage they should have a Finch Nest Box practically hidden by tiny sprays of shrubbery.

They are good breeders, both male and female incubate the eggs, just as do the Society Finches. They take from four-

teen to sixteen days to incubate. The young must be removed from the aviary when the parents go to nest again, otherwise the parents are apt to kill them.

Feed regular Finch Mixture, Spray Millet and Commercial Insect Food, as well as green food and Health Grit. When feeding young use a good prepared Nestling Food mixed with hard boiled egg.

OLIVE CUBAN FINCH

(*Phonipara lepida*)

Habitat—Cuba.

Size— $\frac{2}{3}$ that of the Canary.

In the Olive Cuban Finch the head and upper part of the body are dusky olive green. A line of orange yellow beginning at the upper mandible goes back to and beyond the eye. An orange yellow bib under the lower mandible. A dusky black patch below the orange yellow bib extends well down over the breast becoming lighter towards the abdomen, lower abdomen and vent feathers nearly white. Tail a little darker than back with center tail feathers olive with a yellow cast.

The female is like the male but duller in color. There is no orange in the yellow of this bird and scarcely any bib to speak of. Diet, same as for Melodious Cuban Finch.

BLACK HOODED NUN*(Munia atricapilla)***Habitat**—India.**Size**—A little smaller than the Canary.

The Black Hooded Nun is a little Hindu from India. He is a bit smaller than the Canary and has a solid black head and neck with a body of rich chestnut brown.

The Nuns are a pretty addition to any aviary and are quite hardy after becoming acclimated, but they are not ready breeders in captivity. Their nesting requirements are a covered Nest Box or Gourd with plenty of fine dry grass for building materials.



Bird
Bath Tub

They are often imported and for that reason can be purchased at a very low figure.

However, after they have been in this country a few months and the dealer has taken the heavy mortality loss, the price is usually much higher.

They will do well on the regular Finch Mixture but they are especially fond of Small Yellow Millet and it is well to give them an extra portion of this seed. Spray Millet is also much enjoyed.

MEXICAN CARDINAL*(Cardinalis cardinalis)***Habitat**—Northern Mexico.**Size**—About the same as the common American Cardinal.

This is a truly Mexican bird but to all appearances is like our own Virginia Cardinal. The male has a solid red body, deep brick red on the back, a band of black just back of, and entirely surrounding the red beak. He has a perky crest which is always elevated, giving him quite a surprised expression. But what is the use of trying to describe this beautiful and stately bird? Anyone who has seen our own American Red Bird knows exactly what he is like.

The female is more somber, with a grayish brown body and red outer wing feathers. She has the same crest and carries it just as erect as does her husband.

The Cardinal is a beautiful bird for an aviary but not very desirable as a cage bird. It has been said that after they become cage tame they make nice pets and good whistlers, but the writer does not advise keeping Cardinals in a cage smaller than 24" wide by 15" high.

They will breed in captivity if conditions are to their liking but the usual experience of those who have tried breeding them has been that they lay, sit, and hatch the eggs, only to desert or kill off the babies at about two weeks of age. This seems to indicate that the Nestling Food lacks some element that is required to make them grow as rapidly as they should. Another theory is that they are getting food that is too rich and heating, making them nervous and irritable. One authority states that overfeeding meal worms will produce this condition.

Those who have successfully bred the Cardinal have done so in an outdoor aviary equipped with running water and growing shrubbery. An open nest is built of straws, sticks and grasses about five or six feet from the ground. It is best to start the nest for them, as they seem to need to be reminded of what is expected of them.

Feed the regular Finch Mixture with Sunflower seed, Cracked Corn and Hemp seed added. They are very fond of fruit and should be given apple or orange daily. Commercial Insect Food should also be given them. If one lives in a locality where it is easy to procure live insects, the insect problem is solved, as Grasshoppers, Earthworms, or other harmless insects given every other day or so should keep them in good condition.

Note—During 1937 a law was passed making it illegal to keep the Mexican Cardinal in captivity.



Color Plate L

Text on Page 70



BRAZILIAN CRESTED CARDINAL*(Paroaria cucullata)*

Habitat—Southern Brazil.

Size—That of the Mexican Cardinal.

This bird seems to have the same roving disposition as the American Red Bird, wandering from Argentina to Bolivia. His body is gray; darkest on the back, lighter underneath. The face, crest and throat are red with the red of the throat extending to a point well down on the breast. A narrow black band separates the red head from the nearly white neck.

The male and female are alike in appearance.

The Brazilian Crested Cardinal has a slightly better disposition than the Mexican bird and is more easily raised in an aviary. However, unless one has a lot of patience it might be well to leave the breeding of Cardinals to those who like to accomplish something where others have failed, and strange as it may seem, there are many such people.

The habits and feeding of the Brazilian Cardinal are the same as the Mexican Cardinal.



Large Finch
Nest Box

BRAZILIAN POPE CARDINAL*(Paroaria capitata)*

Habitat—Southern Brazil.

Size—That of the Mexican Cardinal.

The Pope Cardinal is very much like his cousin, the Crested Cardinal, but minus the crest. Some think he is the prettier bird of the two.

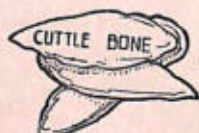
True, he does not carry a crest, but his markings are more distinct, the back being interlaced with black, making a very striking contrast to the softer gray shades of the crested bird. The habits and feeding of the Pope Cardinal are the same as the Mexican Cardinal.

TANAGERS

Habitat—Mexico, South to Brazil.
Size—From the Canary to the Lark.

Tanagers are for the most part from Central America and the northern sections of South America. They are sometimes called fruit eating Finches. The most popular of this family are the Scarlet, the Yellow and the Superb.

These birds should be plentifully supplied with fruit, such as oranges, apples, bananas, fresh figs, pears, etc. Also a good Commercial Insect Food. Not much is known concerning breeding them in captivity, except that it is a difficult task.



The female Tanagers are plain little women; some are better looking than others, but like Weavers and Whydahs they take a back seat as to color in favor of the males. For this reason there are more males than females imported into this country as most people would rather have the colorful males than the homely little females.

SCARLET Tanager

(*Rhamphocelus brasilis*)

The Scarlet Tanager is rather a large bird, being about the size of the Lark. The body of the male is solid velvety scarlet. His black wings and tail have the appearance of being deliberately put on by someone trying to see how great a contrast he could make with these two colors.

SUPERB Tanager

(*Calliste fastuosa*)

This is the most beautiful of all the Tanagers. The head is green with a metallic sheen something like the sheen of the

Peacock's head. A tiny black band just back of the beak seems to be for the purpose of bringing out the green color to better advantage. The back is black and gold, the breast is a bluish orchid shading into deep violet or purple on the abdomen. The wings and tail are black.

VIOLET TANAGER

(*Euphonia violacea*)

Forehead a bright yellow, head black, back, wings and tail deep blue-black with a little purple tint. Throat, breast and underparts light yellow.

YELLOW TANAGER

(*Calliste flava*)

The head and back are yellow, throat black, extending over the breast down to the abdomen. As the yellow of the back and sides meets the black of the lower breast it shades into a much richer color. The wings and tail are black.

WHYDAHs

Whydahs are hardy birds and closely related to the Weavers and like the Weavers, completely change their beautiful plumage of the breeding season to simple Sparrow-like plumage, when the task of breeding is over.

These birds seem to agree quite well in an aviary of assorted birds if the aviary is of a good size.

All of the Whydah family have the habit of scratching on the ground or in the seed pan with a queer little backward jerk while eating.

The male, when courting flies up and down in the air in front of the female, flapping his wings as if to attract her attention. I do not know of anyone having ever raised Whydahs in captivity, but will not say it cannot be done.

Little is known about the nesting habits of this bird. Feed the same as Weavers.

All of the females of the Whydah family are plain, drab little birds without the long, graceful tail feathers characteristic of the male. They remain the same color the year round.

PARADISE WHYDAH

(*Steganura paradisica*)

Habitat—Africa.

Size—That of the Canary.

The male bird, when in breeding season, has a black head, throat, back and shoulders.

The back and side of the neck are a rich chestnut brown; this brown extending over the breast and gradually fading into white at the vent. The tail feathers are from eight to sixteen inches long, depending upon the age of the bird. There are from three to six feathers in the tail, each long, soft and willowy, which wave gracefully in the air as he flies. He is equally as graceful and aristocratic looking when standing on a perch.

PINTAIL WHYDAH

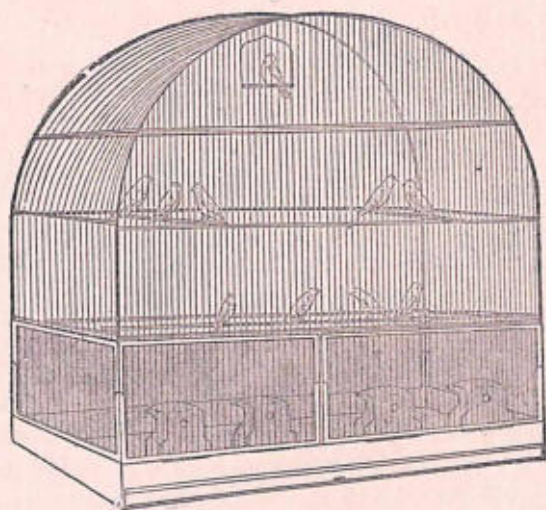
(*Vidua principalis*)

Habitat—Africa.

Size— $\frac{2}{3}$ that of the Canary.

This little fellow is not much larger than the Zebra Finch. Both male and female have a bright red beak. When in breeding plumage the male is black on the back with white breast and abdomen. The wings are black with white markings. They have a long, black tail consisting of two to four long, narrow feathers about eight to twelve inches long. The Pintail is amiable enough in an aviary when out of color, but during the breeding season, when he is in full dress, he is

very spiteful. He may be sitting quietly on a perch and seeing a number of other birds eating peacefully from the same dish, will dart swiftly into their midst, frightening them all away, and then go peacefully back to his perch.



A Model Indoor Aviary

WEAVERS

There are many varieties of Weavers but I will not attempt to list any but the more popular ones. They are very hardy and anyone desiring an aviary of pretty colorful birds would do well to have a few of these birds, but as breeders, I fear they will be disappointing. They do not have a particularly sweet disposition and are prone to be a little spiteful to birds of smaller size, but will do quite well with such birds as Java Rice birds, Robins, etc.

Weavers are wonderful architects and if given a supply of long grasses or raffia will build nest after nest, just for the joy of working.

The writer knows of one aviary containing about fifteen pairs of Weavers. The owner has supplied them with raffia of many different colors and a plentiful supply of small branches, in the forks of which they have woven their nests. The aviary, with its many different colors, reminds one of a Persian rug market.

Many people will keep these birds building nests and as soon as one nest is completed will break off the branch on which the nest is built and give it to other birds who will make good use of it as a home for their own families.

It must be said of these beautiful little birds that it is the male who wears the fine feathers. The female is usually a little dull colored lady asking nothing more than to be allowed to sit and admire her handsome husband, an arrangement that would fail completely among humans.

But alas, he cannot strut about and show himself off always, for the time comes each year when he too must don a homely suit like his wife's and for about three months the sexes are almost exactly alike in plumage.

Their food is simple. They require regular Finch Mixture with a little extra Canary Seed added, Commercial Insect

Food occasionally and of course the regular supply of Health Grit, Cuttlebone and greens.

NAPOLEON WEAVER

(*Pyromelana afra*)

Habitat—Africa.

Size—A little larger than the Canary.

The male Napoleon Weaver is a very beautiful bird when in color. The throat, cheeks, breast and abdomen are a rich, silk, velvety black. A broad band of deep, rich yellow around the throat and down the sides to the vent. The yellow feathers around the throat and on top of the head stand out like a feather ruff the ladies used to wear in the gay nineties.

The female is plain, as in the case of all Weavers.

Feed and care the same as with other weavers.

GRENADIER WEAVER

(*Pyromelana oryx*)

Habitat—South Africa.

Size—Twice that of the Canary.

This is a beautiful bird and appears to be quite a bit larger than he really is. Weavers naturally seem to have more than quite their share of plumage anyway.

In the breeding season the head, breast and abdomen are rich, velvety black. The back and tail are reddish cinnamon, the ruff varies from deep orange to scarlet, but one gets the impression of black velvet and scarlet feathers. The female is a plain little woman in modest brown dress, the breast tinged with yellow. Feed and care, the same as with other Weavers.

ORANGE WEAVER

(*Pyromelana franciscana*)

Habitat—Northern Africa.

Size—A little larger than the Canary.

Head and breast, soft, shiny black; lower abdomen, deep reddish yellow. A large, heavy ruff of burnt orange, which

seems to be edged with red, encircles his throat and neck. This ruff he can raise and lower at will. The tail feathers, which match the ruff, seem to grow from the body just above the rump.

Feed and care, the same as with other Weavers.

PEKIN NIGHTINGALE (JAPANESE ROBIN)

(*Leiothrix luteus*)

Habitat—Western China.

Size—That of the Canary.

This charming bird is not of the Finch Family but is so easily kept and is so desirable that it would be a shame to leave him out of this book.

His plumage is beautiful, the head, neck and shoulders are olive green, the beak, which is quite long, is cherry red. The outer wing feathers are edged with a deep golden yellow and the throat is yellow, merging into deep reddish orange on the breast. The tail differs from the tail of most other birds in that it is forked at the end and is fan shaped; it has a band of black at the tip.

His song is really that of a Lyric Soprano. When listening to him early in the morning or at dusk as he calls plaintively, while selecting his sleeping quarters for the night, one is impressed with his unusual song. If one has a spark of love for nature in his makeup he is bound to react favorably to this rather winsome song.

His flight is quick and darting, though not fearful, in fact he will soon become so tame and gentle that he will eat a tiny bug or fly from his owner's hand. He is very docile after becoming used to his new surroundings. If kept in a cage, it should be larger than the ordinary Canary cage. A cage the size of the Canary breeding cage is about right.

The Pekin Nightingale belongs to what is known as the



CORDON BLEU FINCH



PEKIN NIGHTINGALE

"Mixed Dieters." A regular Commercial Insect Food is now obtainable on which all insect eating birds will thrive, and this bird will do quite well on a diet of fruit, such as oranges, or apples, Commercial Insect Food and the usual Finch Mixture. A little grated carrot and soaked bread given occasionally is appreciated. There is no pet that responds so rapidly to kind and thoughtful treatment as does the Pekin Nightingale and all the little extra kindness shown him will come back to the owner tenfold.

THE TROUPIAL (BUGLE BIRD)

(*Icterus icterus*)

Habitat—South America.

Size—Three times that of the Canary.

The Troupial is a large bird, measuring from eight to ten inches in length. The head, tail and wings are rich, velvety black, the shoulders and breast orange yellow, the latter color extending from the throat to the vent. The song is rich and sweet, never loud or disagreeable.

These birds make wonderful pets as they are easily tamed and are very hardy.

Their food consists of all kinds of fruit, especially bananas. They are also fond of grasshoppers and other insects. Commercial Insect Food, fruit and grated carrot form their principal diet in captivity.

There are few birds that become as tame as the Troupial, which with a little patience can be taught to take food from the fingers. I have never attempted to breed these birds in captivity. They are remarkable whistlers and may be taught to imitate many bugle calls.

SHAMA THRUSH*(Kittacincla macroura)***Habitat**—India.**Size**—About that of the Common Mocking Bird.

The head, breast and back are black, while the under part of the body is brown. The outer tail feathers are white while the inner tail feathers are black. This description does not do this bird justice, as he is really a handsome fellow. His song is very much like that of the Mocking Bird but not nearly so sharp and shrill. The food is about the same as for other soft billed birds but he is very fond of meal worms. A good Commercial Insect Food should be kept before him at all times. Feed greens and plenty of fruit regularly.

Both Troupials and Shamas should have a cage at least twenty-four inches long by about eighteen inches wide and fifteen inches high. Clean Grit should be kept on the floor of the cage at all times. I have never tried to breed Shamas.

BUTTON QUAIL*(Excalfactoria chinensis)***Habitat**—Philippine Islands.**Size**—Twice that of the Canary.

This little fellow is a member of the Quail or Partridge family. He goes well with an aviary of mixed birds and is really quite an asset to any collection of birds. He is most inoffensive, running around on the ground picking up food that other birds have wasted. He looks to be a little larger than he really is but by holding him in the hand one can tell his true size by the feel of his body. He is in reality a "small edition" of the ordinary Game Quail. I do not know that the Button Quail is a staple article of diet in the Philippine Islands, but if it is the Filipinos must be a patient lot, for it would

take a good many of these little birds to make a meal of "Quail on Toast."

He is not noted for bright color although his red-brown sides and red-brown back with gray markings make him an attractive bird.

The Button Quail is very prolific, ten to fifteen eggs being the normal clutch. They are very shy and must have a lot of brush in the aviary in which to hide their nests. Just pile up the shrubbery on the ground in one corner of the aviary and let them alone. When the female is found to be missing at dusk you may conclude that she is sitting on her nest.

The wire of which the aviary is built should be of one-third inch mesh or smaller, as the babies are so small when hatched that they can pass through a larger mesh.

Sometimes there are more eggs laid than the hen can cover, in which case some should be taken away; otherwise they may all be spoiled. Many people keep Bantam hens to set the eggs under, but the trick is to make a Bantam hen sit at the time the eggs are ready.

For diet, feed Millet seed, hard boiled egg and a little Insect Food. They are very fond of live flies and bugs when they can be procured and should be fed a plentiful supply of green food.

DIAMOND DOVE

(*Geopelia cuneata*)

Habitat—Australia.

Size—Three times that of the Canary.

This little miniature dove, a native of Australia, is a beautiful pearl gray bird about three times the size of the Canary. The wings and sides are profusely dotted with small white dots, a large coral ring surrounds the eye and the tail is long with the center feathers white. In flight he seems to

enjoy spreading his tail so that these white feathers may be better seen.

They are very good breeders and may be safely kept with smaller birds, as they are peaceful and quite harmless. The writer has never known them to fight or in any way harm birds smaller than themselves, and their gentle "coo" is restful. They do not breed as well in flocks as they do when kept in single pairs. They lay two eggs as do all members of the Dove family, usually rearing both young. Shortly after the young are out of the nest, two more eggs are laid. Their



Sanitary Drinking
Fountain

only aim in life seems to be to fill up the aviary as quickly as possible with their own kind.

They must not be disturbed while sitting, as they build such a loose, shiftless sort of nest that the eggs might easily be knocked out. About the best nest receptacle for them is the regular wire open Canary nest. If this is not obtainable a strawberry box will answer the purpose very nicely. The period of incubation is about eighteen days.

When kept in an aviary with Finches the regular Finch Mixture is sufficient food for them, but if kept alone large and small Millet form a very good diet, as they care very little for the canary seed found in the Finch Mixture. They are very fond of seeding grasses and should be fed some greens. They like best, clover on the bush or grass pulled up by the roots and thrown into the aviary. These greens, by the way, are enjoyed by all birds.

The Diamond Dove does not make a good cage bird, as they are rather wild when confined too closely.

DISEASES

With proper care and food one will have little use for the following chapter. It is, however, well to know just what to do when one's pet becomes ill. The following data were gained through wide experience and considerable research by the writer. The principal thing to consider when treating sick birds is the fact that they must be kept quite warm both night and day until cured.

ASTHMA

SYMPTOMS: Bird breathes with his beak open as if gasping for air. Sometimes each breath is accompanied by a little jerky squeak. Asthma is usually caused by neglecting to clean the cage and allowing the bird to breathe the dust from stale droppings or musty seeds.

TREATMENT: Two drops of Iodine daily in the drinking water, two drops of Iodine to two ounces of water. One or two drops of honey applied to the inside of the throat with a feather. Put Mentholatum in the nostrils. Keep bird warm day and night and always cover his cage at night. Keep this treatment up for two days, then if the bird shows improvement leave the Iodine out of water, but keep up the other treatment until he is well.

Give plenty of clean green food after first washing it. Be sure to dry well with a cloth before feeding. Feed only clean fresh food and plenty of it.

BALDNESS

TREATMENT: This is sometimes caused by mites, or it may be caused by another bird in the cage who has a habit of feather picking.

There are many good ointments on the market that are helpful and may be rubbed on the affected parts. Plain carbolated Vaseline is also a good remedy for baldness.

COLDS

SYMPTOMS: The bird sits on the perch with feathers puffed up, shivers and sneezes occasionally. On close examination one can see that the nostrils are wet. A cold is frequently accompanied by white diarrhoea.

TREATMENT: Touch the nostrils with a small bit of Mentholatum on a toothpick. Dissolve one rounded teaspoon of Epsom Salts in one pint of boiled water. Give this medicated water in the drinking cups for two days and give nothing else to drink. A little piece of whole red pepper hung in the cage is also good. Keep the patient quite warm day and night.

DIARRHOEA

SYMPTOMS: Bird will have loose watery droppings containing quite a lot of white matter. The feathers about the vent become wet and sometimes stick together. In the latter case the feathers should be cut away so as not to obstruct the passage. Diarrhoea is usually caused by too many greens, greens that have soured in the cage or by impure drinking water.

TREATMENT: Feed nothing but clean, dry seed. Give fresh buttermilk instead of water. The bird may not like buttermilk at first and will not drink it if water is left in the cage, so it will be necessary to keep the water out of the cage as long as the treatment is being given, except for a drink of water before retiring each night. Give the buttermilk treatment for two days only. A good medicine for diarrhoea is made of one teaspoonful of Cayenne Pepper, one teaspoonful of powdered charcoal and one teaspoonful of powdered Cuttlebone, mixed with the yolk of a hard boiled egg. If the bird seems not to notice this mixture, take the seed away from him until he has eaten some of it, then return the seed to the cage. Keep the patient warm night and day.

Buttermilk is a good corrective for any intestinal trouble.

EGG BINDING

SYMPTOMS: Egg binding is one trouble that is easily diagnosed. In the first stages the hen will sit on the perch, feet apart, as though trying to rest the abdomen on the perch. The feathers are puffed out and the eyes seem strained. As the trouble progresses she will make no effort to fly up on the perch but will sit huddled in a corner on the floor. If she attempts to fly she will usually only bump around on the floor.

TREATMENT: Give two drops of mineral oil in the mouth. Then, holding the bird in the left hand on its back with the head pointing away from you, carefully inject the

tip of a medicine dropper containing mineral oil in the vent. Administer one or two drops in the vent but be very careful not to break the egg. Before inserting the medicine dropper into the vent make sure the oil is at the point of the dropper, otherwise air may be forced into the vent.

After the above treatment put the little patient on a hot water bottle that is quite warm; however, first putting a layer of bath towel between the bird and the bottle. Take a small cage from which the bottom and the perches have been removed and put it over the water bottle, which will then serve as the bottom of the cage. Put a cloth over the cage, but leave an opening large enough to keep the bird from smothering.

If this treatment is given in the first stages it is almost sure to turn the trick. But if neglected until the hen is exhausted and has no strength left with which to cooperate with the treatment, it may be of no avail.

SORE EYES

An infection usually caused from rubbing the head against the bars of a dirty cage or perch.

TREATMENT: Wash the eye well with warm boric acid solution just as for the human eye. Then, with a toothpick, put just a touch of Castor Oil directly on the eye ball. Being careful not to get the oil on the feathers, as it will cause them to come out; however, this is not a tragedy, as they will soon grow in again.

BROKEN LEGS

TREATMENT: The best splint for a broken leg is made by taking a quill feather and stripping it clean. Cut off a small piece, the length depending upon the length of the leg of the bird to be treated. Split the tiny piece of quill down one side, spring it open, place the leg in it and press the quill back together.

Put the bird in a small box or cage without any perches. Place the seed and water on the floor, where he can eat and drink without having to use his legs to reach the dishes. Cover the cage with a light cloth to shut out any activity that might be seen by him causing him to move about, thus preventing the leg bones from knitting together. The leg should heal in about five days.

MOULTING

TREATMENT: Moulting is not a disease but is a perfectly natural occurrence, usually beginning in the latter part of July or the early part of August and lasting four to six weeks. During this period the birds should be fed a plentiful supply of greens and fresh, wholesome seed. A good moulting food is helpful for them, as at this time they seem to want a change of diet and are continually picking about looking for something different. However, the writer adheres to the simple diet for birds in a small cage.

MITES

SYMPTOMS: The bird sits on the perch picking at his feathers and scratching his head and back of neck.

TREATMENT: Take him in the left hand, with his head pointing away from you, hold him gently and firmly so he will not flutter. Shake a good mite powder on him and rub it through the feathers to the skin.

Before returning the bird to the cage, clean thoroughly and spray all parts with a good mite killer, especially the center top where the ring or hanger is attached to the cage.

SCALY LEGS

Scaly legs are caused by a minute parasite which becomes embedded in the joints. Sometimes very old birds will have scaly legs, but it is true that an old bird that has lived a normal life, been well cared for and fed properly will have cleaner, smoother legs than a bird only a year old that has been neglected or fed musty seeds and other improper food. Dirty perches are another cause of scaly legs.

TREATMENT: Wash legs in clean, warm water, dry on soft absorbent cloth and apply a good salve. It may take as many as ten days to effect a cure. 6

SORE FEET

Caused by allowing droppings to accumulate on the floor which stick to the bird's feet. Also caused by dirty perches. In some instances sore feet are caused by mosquito bites. In localities where these pests are prevalent it is a good idea to put a mosquito net around the cage at night.

TREATMENT: Wash the affected parts and put Iodine on them, then treat the same as for scaly legs.





COLOR PLATE D

1st. Black Hooded Red Siskin, (*Spinus cucullatus*). Habitat—Venezuela.

2nd. Mexican Goldfinch, (*Spinus barbatus*). Habitat—Mexico, south to Chile.

3rd. Green Singing Finch, (*Serinus icterus*). Habitat—Western Africa.

4th. Red Headed Linnet, (*Carpodacus mexicanus frontalis*). Habitat—Pacific coast of North America, from Oregon to Southern Mexico.

5th. European Goldfinch, (*Carduelis carduelis*). Habitat—British Isles, Russia and Central Europe.

COLOR PLATE E

Color Plate E Nos. 1, 2, 3. Lady Gould Finches (*Poephila goldiae*). Habitat—Northern and Northwestern Australia. Size—About that of the common Canary. Here we have the most beautifully colored species of the entire Finch family. No color plate can do these beautiful birds justice. Their plumage is a riot of color, embracing every color in the rainbow, greens, yellows, reds, blues, purples and all the rest are artistically harmonized to make the Lady Gould the king of the Finch family. As shown in the color plate there are three different color combinations in Lady Goulds. No. 1 are known as the Red Headed variety, No. 2 the Black Headed and No. 3 the Yellow Headed Lady Gould. All three are the same species and are alike in every way except the color on the head. The Black Head is more often seen than the others, the Red Head being next in rareness, while the Yellow Head is extremely rare and is seldom seen in America. All three colors will interbreed freely and when a Black Head and a Red Head are paired together some of the offspring will be Red Heads and some Black Heads. The same is true of the Yellow Heads when mated with the Black or Red Heads. It is said that in the wild state some of all three colors have been found in the same nest. The authenticity of this statement is doubted, however, as all three varieties are the same color when young and remain the same color after leaving the nest until the following season, or at least until they are from eight to nine months old and it is almost a full year before they have their full adult plumage.

Lady Goulds make splendid cage and aviary birds and when properly housed and cared for will bring off from three to four nests of young each season. Unlike most other Finches, Lady Goulds will not breed during the spring and summer months. Their nesting period starts in September and ends in March or April. They are what are known as winter breeders. They consume large quantities of spray millet and should never be denied this delicacy.

Contrary to the general belief Lady Goulds are not a delicate bird. On the contrary they are very hardy and suffer less mortality in the aviary than most other species of Finches. They should not be pampered too much, but should be given the same general care that is given other small Finches.

Color Plate E No. 4. Sharp Tailed Finch (*Uroloncha acuticauda*). Habitat—Burma, Malacca and Sumatra. Size—A little larger than the Zebra Finch. A somber colored little Finch not unlike the common Spice Finch in habits and in color. It has often been bred in captivity and stands confinement well. It has been crossed with the Society Finch with success, the offspring being similar to the Society. They will go to nest readily in the regulation Finch nest box and will usually bring up a brood of from three to five youngsters in one clutch. The male and female take turn about in the duties of hatching.

Color Plate E No. 5. Striated Finch (*Uroloncha striata*). Habitat—Southern and Central India. Size—a little larger than the Zebra Finch. A little brown bird, although quite common in India, is seldom seen in America, probably because of its somber plumage. It makes a fine addition to any aviary and will breed freely in the ordinary Finch nesting box. Dr. Butler of England claims that this little Finch is the progenitor of the Bengalee or Society Finch. There is no doubt but what this Finch was used in developing the popular little Society, as hybrids developed from mating the Striated with the Society not only closely resemble the Society, but are also fertile which is unusual as most crosses are mules.

Color Plate E No. 6. Society Finch or Bengalee (*Uroloncha domestica*). Size—About the same as the Zebra Finch. This popular little Finch which has been nicknamed in America the Society Finch, evidently because of its habit of flocking closely together in the aviary, is one of our best loved Finches. What it lacks in brightly colored plumage is made up by its gentle and lovable disposition. Indeed, one aviculturist has dubbed it the "Guinea-pig" of the Finch family, no doubt because of its lack of aggressiveness and its willingness to live peaceably with all occupants of the cage or aviary. The Society is the most desirable of all the Finches for cage life, having always been confined in cage or aviary, as there are no Society Finches in the wild state. They were propagated in China many years ago by interbreeding several popular Finches. The time when this experimenting was done and also the species of Finches used in producing this wonderful little Finch are mooted questions and will probably never be accurately answered. The bird fanciers owe these originators of the Society a real debt of gratitude for producing for our pleasure this splendid little bird.

In Japan, where bird keeping is very popular and is enjoyed by rich and poor alike, the Society has been bred in over twenty-five definite color combinations. We use the word definite to emphasize the fact that each color combination was an established breed and produced young in most cases exactly like themselves. For instance, one breeder started out to breed birds that were all white except the tail, which was all black. This breeder kept on line breeding and inbreeding until his strain was established and the young raised from his flock were all white with black tails. Another breeder would go in for white birds with black wings. Still another wanted white birds with brown heads and so on until something like twenty-five established breeds or color combinations were evolved. There is also on the market today a crested Society, which is rapidly gaining favor with aviarists. Societies will go to nest any month in the year, but are subject to egg binding when bred in winter unless

kept in a room with moderate temperature. They lay from four to seven eggs and have been known to raise as many as eight young in a single nest, the average being about four. The popular colors obtainable in America are combinations of chocolate brown and white, fawn and white, and pure white.

Color Plate E No. 7. Cherry Finch (*Aidemasyne modesta*). Habitat—Southern Australia. Size—A little larger than the Zebra Finch. This little Finch is also known as the Plum Head Finch due to the fact, no doubt, that it has a bright plum colored patch on top of its head. The female is very similar in color except the plum coloring on the forehead of the male is almost entirely lacking on the female. The Cherry Finch is hardy and lends itself readily to confinement. It is fairly easy to breed in an aviary and many fine specimens are now being produced by fanciers in America. They will nest in the regulation Finch nest box but, like most grass Finches, prefer to weave a dome-shaped nest in a thick bush in the aviary.

Color Plate E No. 8. Indian Silver Bill Finch (*Aidemasyne malabarica*). Habitat—India. Size—A little larger than the Zebra Finch. Male and female are alike in color although the female is slightly smaller than the male. This modestly garbed little bird must be seen to be fully appreciated. They are a combination of soft grays and browns with silver gray beaks. They make splendid cage and aviary birds and are lively, hardy and very attractive.

Color Plate E No. 9. African Silver Bill (*Aidemasyne cantans*). Habitat—North Eastern Africa. Size—A little larger than the Zebra Finch. Male and female are alike except that the female is usually slightly smaller than the male. The Indian Silver Bill and the African Silver Bill are so much alike that it is hard to believe that they are not the same species and that two birds so much alike in appearance can come from areas so widely separated. There is, however, some small difference in plumage. The Indian variety is slightly more brown, the African species being slightly more gray.

COLOR PLATE H

Color Plate H No. 1. Orange Cheeked Waxbill (*Sporaeeginthus melopoda*). Habitat—Africa. About the size of the Zebra Finch but more slender. It is a fairly common bird in the American market and is one of the cheapest Finches in the European market. The female is almost exactly like the male except a little paler in color. Orange Cheeks will breed readily in an aviary, but prefer to build their nest in brush about five feet from the ground, using long stems of fibre or grasses for nest building. It is rather difficult to get them to go to nest in the ordinary Finch box.

Common Waxbill
Color Plate H No. 2. St. Helena Waxbill (*Estrilda astrild*). Habitat—South Africa. Size—A trifle larger than the Zebra Finch. Male and female are almost alike in appearance, the principal differences are the female has less red on the abdomen, is slightly smaller and has a nar-

rower, more pointed beak. When nesting, these birds prefer to build in brush placed in the aviary about four feet from the ground, using long grasses and stubble for building material. They are gregarious in habit and can be bred in groups of from four to eight pairs in a fair size aviary.

Color Plate H No. 3. Common Waxbill (*Estrilda cinerea*). Habitat—Cape Verde Islands. Size, a little smaller than the Zebra Finch. The Common Waxbill is often confused with the St. Helena. When the two are seen together, however, they can readily be distinguished from each other. The St. Helena has tiny hair-like black stripes across the breast which the Common Waxbill does not have. In nesting habits they are about the same and like all of the *Estrilda* family they prefer brush to the common nest box in which they build a dome shape nest with the entrance hole at the side. They are being raised in aviaries both here and in England.

Color Plate H No. 4. Rosy Rumped Waxbill (*Estrilda rhodopyga*). Habitat—Eastern Africa. Male and female are alike in appearance. Very little is known about this lovely Waxbill as they are seldom imported, and for that reason are quite rare. In size they are about the same as the Common Waxbill and are often confused with it in pet shops unless the two are shown together. They can then readily be distinguished as the Rosy Rump, as the name implies, has a patch of red at the rump, not found on the Common Waxbill.

Color Plate H No. 5. Black Cheeked Waxbill (*Estrilda erythronota*). Habitat—Australia. Size about the same as the Zebra Finch. This Finch is quite rare in America and little or nothing is known of its cage habits.

Color Plate H No. 6. Vinaceous Fire Finch (*Lagonosticta vinacea*). Habitat—Senegambia. In size they are about the same as the Zebra Finch. The female is like the male in appearance. This bird is quite rare and very little is known of its breeding propensities in captivity. It has, however, been bred in Europe.

Color Plate H No. 7. Lavender Finch (*Lagonosticta coerulescens*). Habitat—Senegambia. Size, a little smaller than the Zebra Finch. The female is like the male except that the black lower parts of the male show on the female to be a sooty, dark gray. It is considered a delicate bird until it is thoroughly acclimated, after which it can be bred in an aviary when fed and cared for properly. It has been used in cross breeding with the Fire Finch and Parson Finch in Germany.

Color Plate H No. 8. Sydney Waxbill (*Aegintha temporalis*). Habitat—Australia. The female is like the male in appearance. This little Waxbill is very much like the Common Waxbill and is often confused with it. They are seldom seen any more in this country owing to the strict export laws governing the birds of Australia. It is a very hardy bird and like most of the Finches of Australia it is quite easily bred in captivity.

Color Plate H No. 9. Bicheno's Finch (*Stictoptera bichenowi*). Habitat—Australia. Size about the same as the Zebra Finch. The female is slightly smaller than the male and a little less vivid in coloring. This is

one of the most attractive of the Australia Finches, in color it is a combination of soft grays, white and black. They are quite willing to go to nest in an aviary and will turn out many fine youngsters. Bichenos are sometimes called Owl Finches owing to their owl-like appearance when viewed from the front.

COLOR PLATE I

Color Plate I No. 1. Star Finch (*Bathilda ruficauda*). Habitat—North-western Australia. Size about the same as the Zebra. Male and female are alike except that the olive green on the head of the female extends all the way down to the beak, while in the male the entire forehead is red, as shown in the colorplate. They are a little difficult to breed in captivity. The greatest trouble seems to be getting a pair to start nesting. After they once start they will usually bring off their young numbering three or four to a brood. Like most Australian Finches they prefer brush to a man-made nest box for a home site. The nest is dome-shaped, woven of long grasses with the entrance hole at the side.

Color Plate I No. 2. Crimson Finch. Male right, female left (*Neochmia phaeton*). Habitat—Northern Australia. Size about the same as the Zebra, but apparently much longer and more slender. Often erroneously called the Fire Finch. They are quite rare in America, but plentiful in their native land. Many have been bred in captivity and breeding arrangements should be the same as with the Star Finch.

Color Plate I No. 3. Fire Tailed Finch (*Zonaeginthus bellus*). Habitat—Southern Australia. Size about the same as the Zebra Finch. The female is like the male in appearance, but possibly a trifle smaller. Like all other Australian Finches they are quite rare in America and except for those that are raised in aviaries they are seldom seen. They are being bred in small quantities in California and it is hoped in sufficient quantities to supply aviculturists with stock with which to start others breeding this lovely Finch.

Color Plate I No. 4. Diamond Finch or Diamond Sparrow (*Stagano-pleura guttata*). Habitat—South Australia. Size about the same as the Canary. The female is like the male in appearance except that the base of the beak is slightly narrower. This bird is one of the most charming of the Australian Finches. Some aviarists have had splendid success in breeding this little Finch, but as a general rule they are difficult to reproduce owing to the apparently bad disposition of the female, she fights the male at times and prevents him from entering the nest. They have been cross bred with the Zebra Finch with some success.

Color Plate I No. 5. Masked Finch (*Poephila personata*). Habitat—North and Northwest Australia. Size about the same as the Zebra. One of several of the grass finches common to Australia, is similar to the Shaft Tail in every way except color. They are also much more difficult to breed than the Shaft Tail. They make a splendid aviary bird and do well when kept with other small finches. Home raised birds are often

offered for sale by the larger pet shops and many of them are now breeding in American aviaries.

Color Plate I No. 6. Shaft Tail Finch (*Poephila acuticauda*). Habitat—Northern Australia. Size, a little larger than the Zebra Finch. Male and female are alike except the black bib under the throat is broader on the male. The head of the male is also slightly wider at the base of the beak. The Shaft Tail is one of the most attractive and one of the most desirable of all the finches. They are easily bred in an aviary and for that reason are seldom very expensive. They are docile, smart and are continually active. The brood usually consists of four young.

Color Plate I No. 7. Parson Finch (*Poephila cincta*). Habitat—South Australia. Male and female are alike in appearance. Size about the same as the Zebra Finch. Not a very desirable bird in the aviary owing to their aggressive disposition. When kept a single pair to a cage or aviary they are gentle and will breed well when accommodations are suitable. They make themselves at home immediately when turned into the aviary.

Color Plate I No. 8. White Eared Grass Finch (*Poephila leucotis*). Habitat—Northern Australia. Size, a trifle larger than the Zebra Finch. Male and female are alike in appearance except that the female is a little smaller than the male. This little Finch is very rare in America and very little is known about its activities when kept in cage or aviary. It is known, however, to have been bred in America.

COLOR PLATE L

In the Weavers we have one of the hardiest families of all the popular foreigners. They are desirable from several standpoints, first, their brilliant plumage makes them an outstanding favorite for show purposes; second, their devotion of a good part of the time weaving beautiful nests and other designs of hay, straw or raffia. This is a natural habit of all Weavers while in the wild state and when confined to an aviary they continue the pastime, often weaving intricate designs among the bushes and in and out of the wire netting of which the aviary is built. It must not be construed that because they are continual nest builders that they are easily bred in captivity, for this is far from true. On the contrary they are difficult to breed and seldom build a nest with the intention of occupying it. They seem to be interested only in weaving the nests for the sheer joy of working.

Now for some of the disagreeable features of this popular bird. First, the male puts on his lovely plumage only at the beginning of the breeding season and then changes to the somber color of the female at the end of the season, which usually lasts from four to six months. Males only put on the bright plumage, the females remaining the same color the year around. When the males are out of color it is very difficult to distinguish the sexes. They have practically no song except an ordinary "Cheep, cheep."

There are some thirty-five species of Weavers that have been imported and studied. However, less than a dozen of these are popular enough to

warrant any special attention. Most of them come from different parts of Africa but seem to adapt themselves quite readily to most any climate. They are practically all seed eaters and are quite easily cared for in an aviary. They are somewhat wild at first and do better in an aviary than a cage.

Color Plate L No. 1. Grenadier Weaver (*Pyromelana orix*). Habitat—South Africa. One of the prettiest of the Weavers, it possesses all of the characteristics of the family as enumerated in the introduction of this article. In size they are about the same as the common Canary.

Color Plate L No. 2. Cinnamon Crowned Weaver (*Pyromelana flammeiceps*). Habitat—Eastern Tropical Africa. The Cinnamon Weaver is a lively bird of gorgeous plumage during the breeding season. In size about the same as the Canary. The illustration is of the male, the female being a dull grey bird with horn colored beak.

Color Plate L No. 3. Orange Weaver (*Pyromelana franciscana*). Habitat—Northern Tropical Africa. Probably the most popular of all the Weavers. Owing to the quantity imported the price is fairly reasonable for such a lovely bird. The illustration also shows the female Orange Weaver. The male is almost exactly like the female when out of color.

Color Plate L No. 4. Napoleon Weaver (*Pyromelana afra*). Habitat—Senegambia and Benguela. The prettiest of the yellow Weavers. The plumage on the head of the male forms a beautiful yellow ruff which he seems able to raise at will. In appearance they seem to be a little larger than the foregoing species but this delusion is caused by the extended ruff on the male as they are about the same in size.

Color Plate L No. 5. Taha Weaver (*Pyromelana taha*). Habitat—Northern Africa. A similar bird to the Napoleon but far less colorful. They are, however, showy and make a splendid addition to the aviary. Male and female are both a somber gray when out of color. In size they are about the same as the Canary.

Color Plate L No. 6. Blood Bill Weaver (*Quelea quelea*). Habitat—Senegal and Nyassa. The commonest type of all and more often imported, no doubt because of the easy accessibility to the section from which they come. They are extremely hardy and long lived. The upper picture is of the female, the lower one of the male when in color. When out of color he is exactly like the female.

Color Plate L No. 7. This is in reality a derivation of the Blood Bill. There seems to be no other classification for it. They appear occasionally in flocks of the true Blood Bills and interbreed with them. There is no doubt about it being a branch or "throw back" of that species.

Color Plate L No. 8. Red Headed Weaver (*Quelea erythrops*). Habitat—Africa from Senegal to Zanzibar. This species is sometimes confused with the Blood Bill as it is like it in every way except having the black mask which is so pronounced in the Blood Bill. The Red Head is rarely imported and is seldom seen in the pet shops. Its breeding, habit, food, etc., are the same as other Weavers.

COLOR PLATE M

Color Plate M No. 1. Indigo Bunting (*Cyanospiza cyania*). Habitat—Guatemala to Panama. Size about that of the Canary only a little thicker in body. When in color the male is a bright cobalt blue with a slight tinge of ultramarine on the breast, head and throat. The female is brown above, shading to almost a light tan on the breast. When the male is out of color, which is during the winter, he is like the female in appearance. They add color and charm to any aviary of Finches.

Color Plate M No. 2. Lazuli Bunting (*Cyanospiza amoena*). Habitat—Central America and Mexico. About the size of the Canary. The female is dull grey-brown, greyer toward the tail, crown of head slightly dull blue; throat, breast and abdomen creamy buff. These birds are not as common in their native state as are the Indigos. It is always easier to procure males than females, probably because the females are so plain they are seldom seen. They migrate in flocks, the males usually arriving several days before the females. They make wonderful aviary birds when acclimated.

Color Plate M No. 3. Nonpareil Bunting or Butterfly Finch (*Cyanospiza ceris*). Habitat—Southern States of North America, Cuba, Mexico, Central America and Panama. This beautiful, many colored Bunting is often called the Butterfly Finch, but in reality is not a Finch at all but a true Bunting. About the size of the Canary. The female is also very pretty, a soft shade of olive green above, shading to very pale green underneath. Male and female are alike when out of color. These birds are most attractive and vie with the Lady Gould Finch when in color. It is the prettiest of the Bunting Family.

Color Plate M No. 4. Rainbow Bunting (*Passarina leclancheri*). Habitat—Mexico. About the size of the Canary. It is almost impossible to describe the brilliant plumage of this bird. The colors even though brilliant are very soft. The general impression of the ensemble of color is one of harmony. The female is hardly less beautiful than the male, which is unusual in Buntings. In the aviary they are gentle but difficult to breed.

Color Plate M No. 5. Varied Bunting or Purple Bunting (*Cyanospiza versicolor*). Habitat—Central America, Mexico and Guatemala. General appearance above is purplish red. He is about the size of the foregoing species. They are somewhat delicate in confinement and by no means common. The female, above, is greyish brown, more grey towards rump and upper tail coverts. Tail dull, edged with blue; throat, breast and abdomen pale buff. They are delicate when kept in confinement until acclimated and for this reason are not as popular as other Buntings.

Color Plate M No. 6. Lined Finch (*Sorphila lineola*). Habitat—Brazil and Venezuela. The Lined Finch is not a very colorful bird, although his greenish upper parts and the contrasting white of the underparts make him a very attractive aviary bird. The female is olive grey, shading to nearly white on the breast. The Lined Finch inhabits the





outer edges of forests, especially near towns and villages. In the aviary he is willing to go to nest in a closed Finch box or will nest in the thick brush. They make fairly good parents and usually bring up the entire brood, numbering three to five youngsters.

Color Plate M No. 7. Bluish Finch (*Spermophila cochulescens*). Habitat—Brazil and Argentina. A most active bird and exceedingly swift in flight from one bough to another. He is a wonderful architect in home building. He selects numbers of fine hairs and webs with which he actually suspends his cup shaped nest between the forks of small branches. The nest itself is an openwork affair through which the eggs can be seen and counted by one standing underneath it. This species is now very rare and seldom seen in America.

Color Plate M No. 8. Reddish Finch (*Spermophila nigro aurantia*). Habitat—Southern Brazil. This is a beautiful little bird very much like a small Bullfinch. The coloring is almost the same but instead of the rose brown breast of the European Bullfinch it is more of a cinnamon rose color. The female is dull colored, the breast is buff. This little cinnamon midget is a favorite cage bird in homes of the natives. The male is a sweet singer, being one of the few singing Finches. Unfortunately he is seldom imported and for that reason little or nothing is known of his breeding activities when in confinement.

COLOR PLATE P

It is not always the rarest birds that are considered most beautiful. Consider the specimens pictured on Plates P and Q, some of which are quite rare, some quite common, all, however, are lovely in color and in form. Some of these breed in confinement readily, while others are quite difficult to breed, and some will seldom, if ever, go to nest in captivity. It may be said, however, that most birds will breed in an aviary if provided with the right environment. A large aviary supplied with an abundance of growing shrubs and small trees makes an ideal home for birds, and when the occupants are cared for properly there is little difficulty in inducing housekeeping activities. Especially is this true of the birds shown in Color Plate P. The birds shown in Color Plate Q are larger and require a great deal of room. When breeding is to be attempted, special foods must also be provided. On account of these handicaps few fanciers attempt breeding these colorful birds.

Color Plate P No. 1. Cuban Melodious Finch, male lower, female upper (*Phonipara canora*). Habitat—Cuba and nearby islands. Size about the same as the Zebra Finch. There are two kinds of Finches commonly called Cuban Finches, the one pictured and the Cuban Olive Finch (*Phonipara lepida*). The Melodious is much more colorful and is considered one of the most desirable Finches for cage or aviary. Their nest in the wild state consists of a dome-shaped affair in the thick brush. The entrance is a tiny hole in the side of the nest. Accommodations for similar nesting should be provided in the aviary. It is doubtful if the Melodious can be bred in a cage.

Color Plate P No. 2. Jacarina Finch (*Volatinia jacarini*). Habitat—

Central and South America. Size a trifle smaller than the Canary. The male is a shiny black with iridescent hues, somewhat like the plumage of our American male Blackbird. The female is a dusky brown without the sheen found in the plumage of the male. In the wild state they nest near the ground in low bushes. They make splendid cage birds and are easy to care for, being seed eaters. It is not known whether or not Jacarinas will breed in captivity. They undoubtedly will if properly housed in an outdoor aviary. They mix nicely with a collection of other small Finches and are harmless. The jet black plumage contrasts beautifully with other brightly colored Finches when seen together.

Color Plate P No. 3. Green Cardinal (*Gubernatrix cristata*). Male, lower; female, upper. Habitat—The Argentine to Northern Patagonia. Size about the same as the North American Red Cardinal, but slightly more slender. The Green Cardinal, or Black Crested Cardinal as they are sometimes called, is probably the least common of all the Cardinals. They are hardy and long lived in an aviary. They are the easiest to become acclimated and become very gentle, more so than other Cardinals. They can be bred in an aviary, but the difficulty lies in securing sufficient live food for the young while being reared. They seldom reach adult age unless this type of food is supplied them in abundance.

Color Plate P No. 4. Red Crested Cardinal (*Paroaria cucullata*). Habitat—Brazil to Argentina. Size about the same as the North American Red Cardinal. A striking bird in every way. He is sprightly, graceful and charming. He is also a fairly good whistler after you have gained his confidence and he feels thoroughly at home. It is difficult to distinguish sexes as the plumage is almost identical in color. The beak of the female is longer and more tapering and the forehead narrower. Their breeding habits are about the same as the Green Cardinal.

Color Plate P No. 5. Pope Cardinal (*Paroaria larvata*). Habitat—Brazil and vicinity. Size, about the same as the North American Red Cardinal. Male and female are exactly alike in appearance, although on close examination the female is found to be more stockily built, the beak is also more slender and tapering. The Pope is probably the least difficult to breed of any of the Cardinals. A good supply of live food while rearing their young is the main thing to consider. They are easily domesticated and are an admirable addition to any collection.

Color Plate P No. 6. Red Crested Finch (*Coryphospingus cristatus*). Habitat—Brazil southward to Argentina. Size, a little larger than the common Canary. Both male and female are red. The male is of a much brighter shade. The red on the female is more of a brick red. This colorful little bird really belongs to the Bunting family and should be cared for accordingly. They should not be restricted to a seed diet alone, but should have fruit and some live food occasionally. They are quite rare and very little is known of their breeding habits. They are quite confident in confinement and are peaceful when kept with other birds.

Color Plate P No. 7. Pileated Finch (*Coryphospingus pileatus*). Habitat—Brazil to Venezuela and Colombia. Size about that of the common Canary. The male bird is illustrated. The female is like the male only more brown. The crest of the female is also brown. This bird is closely

related to the Red Crested Finch and their natural habits of nesting and breeding habits are believed to be the same. Both species are quite rare and little is known of their breeding in confinement. Dr. Butler in his book states they have been bred both in England and in Germany.

Color Plate P No. 8. Diuca Finch (*Diucadiuca*). Habitat—Chile and Argentina. Size a little larger than the Canary. Male and female are alike in appearance except the female's plumage is a little more somber than that of the male. They belong to the Bunting family and should be treated as such. They have been bred in captivity, but only on rare occasions.

COLOR PLATE Q

Color Plate Q No. 1. Donaldson's Touraco (*Turacus donaldsoni*). Habitat—Northeast Africa. Size about that of the Magpie. Touracos are purely African birds. They are a large family ranging in size from a Magpie to that of a Pheasant. There are some twelve species in the family, all of which are beautifully plumaged. Male and female are alike in plumage, the female being a little smaller in size. They inhabit the deep forests and live almost entirely on fruits and shrubs. They have been bred in confinement in large aviaries. They are rarely imported, and unfortunately command a high price. Therefore, very little experimenting has been carried on in America.

Color Plate Q No. 2. Spotted-billed Toucanet (*Selenidera maculirostris*). Habitat—Parts of Central America. The bird illustrated is a male. The female is similar. The *Selenidera* is one of the commonest of the dwarf Toucans. They make delightful pets and are a great attraction in the aviary.

Color Plate Q No. 3. Sulphur Breasted Toucan (*Ramphastos carinatus*). Habitat—South Mexico and Central America. Size about that of the Magpie. This gorgeously plumaged bird is sometimes called the Painted Billed Toucan owing to the beautiful colors found on the beak, which is sometimes six inches in length. The female is like the male except that her beak is shorter than that of the male. She is also more stocky in form. They make a great show and attract much attention wherever they are displayed, largely on account of their grotesque appearance. They have been known to breed in captivity, but the task of breeding is difficult and is hardly worth the effort.

Color Plate Q No. 4. Ariel Toucan (*Ramphastos ariel*). Habitat—Eastern Brazil. Size, a little smaller than the Sulphur Breast. It is very similar to the foregoing species and should have the same general care.

Color Plate Q No. 5. Great Barbet (*Megaloea virens*). Habitat—Southern China. It is the largest of a family of a dozen species of Barbets, all of which are rare and colorful. The whole family appears to be related to the Toucans, having the same vivid coloring and short wings. The food requirements are also similar, consisting chiefly of soft fruits and insects.

Color Plate Q No. 6. Blue Throated Barbet (*Cyanops asiatica*). Habi-

tat—The Himalayas. A very rare bird, seldom seen in America. Little or nothing is known of its habits in confinement.

Color Plate Q No. 7. Embroidered Barbet (*Cyanops nuchalis*). Habitat—The Island of Formosa. One of the least rare of the Barbet family. They make fine cage pets; are confiding. Its glossy, bright green plumage is its chief attraction.

COLOR PLATE R

QUAIL, PARTRIDGES and DOVES—Volumes have been written about these popular birds and volumes will be written, yet their charm will never be fully described, nor will their full beauty and coloring be depicted with brush and palette, as words and pictures cannot do these remarkable birds justice. One must see the birds in real life, must watch them in their breeding activities and study their habits and actions before one can really appreciate the beauty of these remarkable birds.

Practically all of the species illustrated in Color Plates R and S have been bred in confinement. Most of them are now priced within reach of the average bird lover so that no true aviculturist with a penchant for this type of bird need longer deny himself the pleasure of owning at least a pair or two of both fancy Quail and Doves.

Color Plate R No. 1. Japanese Quail (*Coturniz japonica*). Habitat—Japan. In size and color it closely resembles our common Quail, with which it will freely interbreed. A characteristic of the female, found in no other species, is the elongated or pointed feathers of the chin and throat. The Japanese Quail is not often imported, as it is not especially attractive. A pure white variety has been evolved from this species in Japan.

Color Plate R No. 2. Painted Quail, male and female (*Excalfactoria chinensis*). Habitat—Indo-China, Ceylon and Formosa. There are several varieties of the Painted Quail, but the ones illustrated are perhaps the most beautiful and are more often imported. They are very small, only a little larger than the common sparrow and are commonly called Button Quail. They become quite gentle in captivity and are fairly easily bred in an aviary that is properly equipped with brush, old logs and sandy dirt floor. Such an aviary should be built with wire netting of one-quarter inch mesh, as the young pass freely through one-half inch.

Color Plate R No. 3. Chinese Bamboo Quail (*Bambusicola thoracica*). Habitat—Indo-China. In color it is very much like the American Bob White, but in size it is little more than half as large. They are quite easily bred in captivity and should be given the same breeding aviaries and equipment as other small Quail.

Color Plate R No. 4. Formosan Bamboo Quail (*Bambusicola sonori-vox*). Habitat—Formosa and nearby islands. The Formosan Bamboo Quail is very much like the Chinese variety, except that it is more highly colored. It is also more freely imported and therefore better known than the Chinese Bamboo. They are more easily bred in captivity and are quite tame in the aviary. They will often take food from the hand. It is

best to use bantam hens for rearing young, for, like most Quail, they make erratic parents in captivity.

Color Plate R No. 5. Chinese Frankolin (*Frankolinus pintadeanus*). A species of Partridge found in Indo-China. Little is known of this lovely Partridge, as they are seldom imported. It has been bred in England, however, with success.

Color Plate R No. 6. Common Partridge (*Perdix perdix*). This bird is too well known to need description except to say that it is a splendid bird in an aviary and when bantams are used for rearing the young they make delightful pets, probably the tamest of all the Partridges.

Color Plate R No. 7. Formosan Tree Partridge (*Arborophila crudigularis*). There are some fifteen species of Tree Partridges, all of which are quite rare and seldom imported. One species inhabits the Malay Peninsula, another the Himalaya Mountains, and the one illustrated, the island of Formosa. They are seldom if ever found in coveys but generally in pairs. Both sexes are alike in plumage.

Color Plate R No. 8. Chukor Partridge (*Alectoris chukar*). Habitat throughout Asia. The Chukor is probably the finest of all the Partridges and is one of the largest. It is a handsome bird and stands almost a foot high. It is beautifully colored and makes a marvelous show. Chukors have been freely imported in the past, but of late so many have been bred in America and are selling so cheaply that it does not pay the importer to bring them in any more. They are one of the easiest of the Partridges to breed when properly housed and cared for.

Color Plate R No. 9. Crowned Wood Partridge (*Rollulus roulroul*). Habitat—Malay Peninsula. This gorgeously plumaged bird is quite rare and is the only species of its genus. It inhabits the dense Malay jungle forests. It has been frequently imported and often bred in America in large, well arranged aviaries. The female of this species is without the handsome red crest shown on the male in the illustration.

COLOR PLATE S

Color Plate S No. 1. Harlequin or Cape Doves (*Oena capensis*). Habitat—Africa and Arabia. A graceful little Dove with a quite long, slender tail. It has been bred frequently in captivity, the only difficulty being to keep the young from falling from the nest to starve on the ground.

Color Plate S No. 2. Triangular Spotted Dove or Pigeon (*Columbo guinea*). Habitat—Africa. A trim bird with striking appearance. One seldom sees this dove when its plumage is not smooth and sleek. In an aviary they are quite wild and discontented. They will breed freely, however, when not disturbed. It is not advisable to keep them in an aviary with other Doves, regardless of size, as they are treacherous and great fighters, usually killing all occupants except their own kind in short order.

Color Plate S No. 3. Indian Green Winged Dove (*Chalcophaps indica*). Habitat—India, Papuan Islands and New Guinea. A small bird

about two-thirds the size of the common wild Dove. Its bright red beak and brilliant green wings make it one of the most attractive species of Doves. They are difficult to breed in confinement, but the true aviculturist does not let this handicap prevent him from trying. Consequently many of them are being bred in aviaries, both here and in England.

Color Plate S No. 4. Nicobar Pigeon (*Caloenas nicobarica*). Habitat—The Nicobars to Celebes and the Malay Archipelago. Probably the most beautiful of all the Pigeon family is the Nicobar. He is a very large, showy bird, a study in blues and greens. His hackle feathers remind one of a game cock. The peculiarity of Nicobars is that they lay and incubate only one egg at a time. They breed freely in captivity when allowed plenty of room. Owing to its large size it should never be confined to close quarters. Being seldom imported, they are naturally expensive.

Color Plate S No. 5. Crested Bronze Winged Dove (*Ocyphaps lophotes*). Habitat—Southern Australia. This beautiful Dove is one of, if not the most popular Dove from the Antipodes. The bronze on the wings of both male and female, when in the sunlight, reveals all the colors of the spectrum. One must see this Dove in real life in order to fully appreciate its beauty. They are very easily bred in confinement and for that reason are becoming quite common in America. They have been liberated both in England and France. With what success they met with in their transplanting experiments, the writer is not familiar.

Color Plate S No. 6. Plumed Ground Dove (*Lophohaps plumifera*). Habitat—Australia. Not a common species and seldom imported, but it is now being bred successfully by aviarists in America in ever increasing numbers. This Dove should not be confused with the commoner White Bellied Plumed Dove, which is often imported, consequently much cheaper in price.

Color Plate S No. 7. Bleeding Heart Dove (*Gallicolumba luzonica*). Habitat—Philippine Islands. A rare and beautiful sight is the Bleeding Heart. The bright red spot about the size of a fifty cent piece in the center of a snowy white breast gives the bird every appearance of having just been shot and wounded in the breast. These birds have very long legs and can run swiftly, often escaping in the jungles without flying. Bleeding Hearts are now being freely bred in America and are sold quite reasonably in bird shops.

COLOR PLATE T

It is safe to say that Finches constitute 75% of the total of all birds kept in captivity, both for pleasure and for scientific purposes. It is easy to see why this is so, as there are many reasons why these charming little birds are so popular. In the first place, they are small and can be confined in smaller cages and aviaries than other birds and as most of our bird fanciers live in cities, space is a large contributing factor in making a decision as to what birds one may keep comfortably.

The second important reason that Finches are more popular is the way in which they seem to adapt themselves to conditions and confinement.

This cannot be said of all species, but for the most part Finches are quite contented in a small aviary or roomy cage and will usually start house-keeping if the proper nesting arrangements are supplied.

The third reason for their increasing popularity is undoubtedly due to their beautiful plumage which in some species such as the Lady Goulds, Parrot Finches and some of the Waxbills, is such a riot of gorgeous colorings that it is impossible to describe them.

Color Plate T No. 1. Crimson Winged Waxbill (*Pytelia phoenicop-tera*). Habitat—Senegambia to Equatorial Africa. Size, about that of the Zebra Finch. This species is very rare in America and is seldom seen any more. It is called the Aurora Finch and may be recognized by that name. It has been bred in captivity, but is not by any means an easy specimen to breed. They prefer a thick bush to the usual nest box when choosing a nesting place.

Color Plate T No. 2. Red Faced Waxbill (*Pytelia afra*). Habitat—The East African Coast from Nyassaland to Abyssinia. Size about the same as the Crimson Wing. This is another of the rarer African Waxbills that is seldom imported. They are a small, shy bird and do not take readily to cage life, but can be bred with patience in a fair sized aviary where brush is supplied for a nesting site.

Color Plate T No. 3. Melba Finch (*Pytelia melba*). Habitat—The Congo region of Africa. Size—A little smaller than the Zebra Finch. This species is one of the few Finches that are noted for their song. The Melba has a soft sweet song that is greatly esteemed by the natives who often keep them confined in small reed cages very much the same as the Canary is kept in America. The Melba is by no means common, but what few specimens that have come under the writer's observation were fairly tame and proved to be moderate breeders in small aviaries, where they constructed dome shaped nests in the brush with openings in the side. The brood consists of about four.

Color Plate T No. 4. Pintailed Nonpareil (*Erythrura prasina*). Habitat—The Malay Peninsula, Sumatra, Java and Borneo. As can be seen by the color plates this is a bird of gorgeous plumage, being a combination of greens, reds and blues. The female, although lovely, does not compare with the male in beauty. In size they are about that of the common Canary. This species, which is a member of the family of grass Finches, is often confused with the Nonpareil Bunting of our own southern states and Mexico. The color is very similar although the species and habits of the birds are entirely different. The Pintail does not stand confinement as well as the Nonpareil Bunting. They are exceedingly difficult to breed in an aviary and will not breed at all in a cage. They are a rather delicate bird and have little to recommend them other than their beautiful plumage.

Color Plate T No. 5. Tri-Colored Parrot Finch (*Erythrura trichoa*). Habitat—New Guinea, the Moluccas and Solomon Islands. Size—A little smaller than the common Canary. A beautiful little grass Finch almost entirely green in color except for the blue face and red tail, male and female are like in color. This colorful species is unfortunately ex-

tremely wild in confinement unless kept in a fair sized aviary. It will, however, finally settle down and adapt itself to its new environment. They are flighty in their breeding proclivities and cannot be relied upon to bring up a family properly, although they have been bred frequently in all parts of the country. They will use an ordinary closed type box nest for a building site, but like most grass Finches prefer to build a dome-shaped nest in a thick bush.

Color Plate T No. 6. Red Headed Parrot Finch (*Erythrura psittacea*). Habitat—New Caledonia. In size they are the same as the Tri-Colored. They are also alike in color except that this species has a brilliant scarlet head and throat; male and female are alike in appearance. The Red Head is less frequently imported and for that reason is usually priced much higher. Their habits in captivity are about the same as the Tri-Colored and these birds are not recommended for confinement in small cages. They will do well in a roomy aviary and will go to nest when the right equipment is supplied, which consists of some thick brush in which to hide. Also plenty of Finch nest boxes.

Color Plate T No. 7. Fijian Parrot Finch (*Erythrura peali*). Habitat—The Fiji Islands. Size—About the same as the foregoing species. This species is often confused with the Red Head Parrot Finch of New Caledonia as both species are almost exactly alike in color. The only difference is the red on the head and tail of the Fijian species being less prominent. Male and female are alike in appearance. Their habits in confinement are practically the same as the foregoing species.





PART 2

PARROTS, PARRAKEETS and
LOVE BIRDS

Their Care and Breeding



SHELL PARAKEETS



Cobalt Blue



Yellow



Green



PARRAKEETS

THEIR CARE AND BREEDING

ALSO
CHAPTERS ON LOVE BIRDS, PARROTS
DWARF PARROTS, MACAWS AND
OTHER PARROT-TYPE BIRDS

•
By M. L. and FLORA FLOWERS

WRITTEN AT
BIRD HAVEN
RESEDA, CALIF.

•
Dedicated to All Lovers of
BEAUTIFUL
BIRDS

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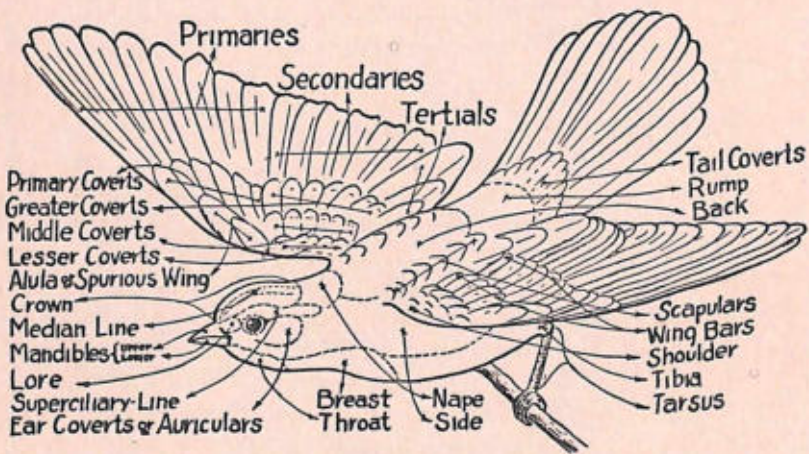
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PARRAKEETS THEIR CARE AND BREEDING

+

FOREWORD

For over half a century the Shell Parrakeet has been one of the most popular birds for cage and aviary, and the last few years have witnessed a remarkable expansion in the number and enthusiasm of its admirers. Apart from its beauty and engaging mannerisms, its adaptability, hardiness and free mating propensities have made it an ideal subject for breeding experiments. Since the creation of several attractive color varieties there has sprung up recently for rare specimens a demand unparalleled in the history of any other cage bird.

The greatly increased interest thus aroused has led to a general desire among Shell Parrakeet enthusiasts for a manual dealing adequately with its breeding and management. This desire, it is confidently hoped, will be met by the publication of this work.

In preparing this book on the Breeding of Parrakeets, it is not the intention of the writer to make it a scientific treatise or to use scientific terms and Latin phrases understood only by experienced aviculturists.

The object of the book is to tell how to successfully breed the lovely Shell Parrakeet for profit or for pleasure, in the

simplest language, so that the average bird lover, be he beginner or experienced breeder, can easily understand it.

This book is based on years of actual experience in breeding Parrakeets. We make public for the first time many breeding secrets and experiments—experience and data that have cost a very great deal of time and money to compile. We have carefully kept records of our activities and have worked out a plan of procedure whereby anyone may be successful in this most fascinating enterprise. It is hoped that the book will be the means of starting you in a hobby that is not only profitable and entertaining but is also new and one that has unlimited possibilities.

One of the important factors in the breeding of Parrakeets is the element of time. Fortunately, here is an enterprise that does not require a great deal of the owner's time.

In all other live stock breeding, the time required in cleaning and feeding the stock and caring for the young, whether birds, poultry or animals, makes it almost impossible for the busy man or woman to first try it out even on a small scale.

Parrakeet breeding is really so simple that the prospective breeder before going into it doubts the statements of those who are already doing it successfully.

Let us here make a few comparisons between the time required in breeding Parrakeets and the time required for similar enterprises, such as the breeding of rabbits or poultry—if these enterprises can indeed be called similar.

Parrakeet Breeding is an occupation that can be carried out on a really large scale by people who are regularly occupied at other work. This is only one of the things that make it so attractive. Only a few hours a month are required to care for a large flock of birds. Where a continuous supply of fresh water is available, like a dripping faucet, it is possible, by using a seed hopper for supplying seed, to only

visit your breeding pens once a week, and then for only a short while, to refill the seed and grit hoppers, clean out the nest boxes, and sweep up the droppings on the floor.

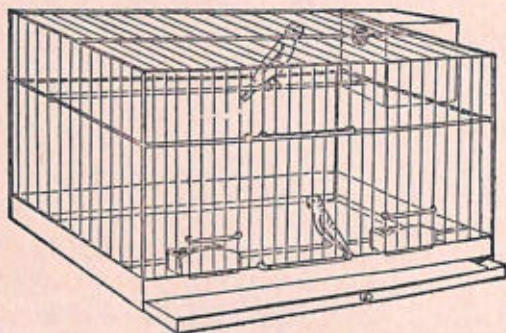
All these seemingly impossible facts are explained fully further on in the book. In what other enterprise can you engage that will allow you to take your regular Summer vacation without the slightest worry, knowing that your birds will keep right on breeding and rearing their young while you are away, equally as well as they would were you to visit them each day? For Parrakeets require no human help or special food in rearing their young, as they bring their young up entirely on seed, the same seed that the parent birds live on.

Space is another important factor to consider in the breeding of Parrakeets. There is no occupation comparable with the profits to be made therefrom, that requires so little space in which to operate. Here again we might compare Parrakeet breeding with the occupations mentioned above, and in this case we will consider the value of the product as compared with space required to produce it. Take poultry to illustrate the point. A hen, according to the best authorities, will do well to earn \$2.00 net per year, and occupies two to three times the space necessary to house a pair of Parrakeets, which at an average pair estimate will net \$25.00 per year. Putting it on a flock basis, a house large enough to accommodate six hens with a total net annual income of \$12.00 will safely house ten pairs of Parrakeets with a total annual net income of \$250. The reason for this vast difference in net receipts is easily explained. It is because the hen consumes so much costly food, while her products bring so little money when sold, but the Parrakeets, being small, consume very little food, while the offspring bring so much money. The same comparison can be made with rabbits, pigeons, or other live stock.

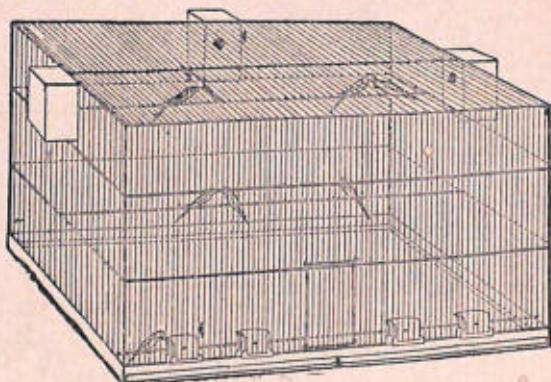
Aside from the splendid profit derived from raising Parra-

keets, the small space and labor required to breed them makes the occupation a very attractive one.

Now read the book through and learn about this new industry—Breeding Parrakeets.



Single Breeding Cage



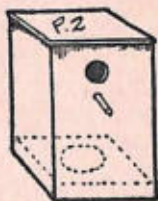
An Aviary Equipped for Breeding Three Pairs of Parrakeets

Breeding Parrakeets

The Shell Parrakeet, commonly known as the Love Bird, has several aliases, such as the Budgerigar, the Undulated Grass Parrakeet, and just plain "Parrakeet." The name Parrakeet alone, however, does not identify it, as there are over two hundred varieties of Parrakeets in the different parts of the world. It is necessary, therefore, to differentiate it from other species by giving it a definite cognomen. Shell Parrakeet being the most popular name applied to it in America, we shall from now on in this book call it the "Shell Parrakeet."

The name "Love Bird" is, however, a more romantic name and is used a great deal by the various bird stores throughout the country, owing to the sales appeal or sales value the name "Love Bird" carries. Customers are attracted at once by the name "Love Bird" on a sign, whereas the same customer might not be interested in the name Parrakeet. Let us make the suggestion right here to you embryo breeders that when selling off your young birds, whether to private parties or to pet shops, you call your birds "Love Birds."

If you are a breeder located where people congregate or pass by, a splendid plan is to erect in front of your place, or on the lawn, a neat sign reading as follows: "LOVE BIRDS FOR SALE." You might also have a picture of Parrakeets painted in natural colors on the signboard. You will be surprised to see how many visitors such a sign will attract, and many private sales can be made at substantial prices. Where a breeder has only ten to twenty-five pairs it is an easy



Nest Box

matter to sell the entire output at fancy retail prices, and in cities and towns that do not have a bird store one can sell great quantities direct to the individual customer.

Most any seed store or hardware store will allow you to display a large cage of Parrakeets in their show window for a very small commission, as the birds attract people to the store. Nothing is more interesting to the average shopper than a cage full of these beautifully colored Parrakeets.

The price obtained for the birds must be decided upon by the breeder, who must, when setting his price, be governed by the location in which he lives, and also general local conditions. Let us suggest a scale of prices that can easily be obtained for the various colors of home-raised Shell Parrakeets. The Greens should sell readily at from \$5.00 to \$10.00 per pair, Yellows \$5.00 to \$10.00 per pair, Blues \$7.50 to \$10.00 per pair, Cobalts \$7.50 to \$10.00 per pair and Whites \$10.00 to \$12.00 per pair. Bird stores have no trouble in getting these prices.

When one is located where wealthy people pass, it is possible to get enormous prices for them, but suppose it is only possible to obtain the prices mentioned above, one can easily see that the business of breeding Parrakeets is profitable.

The number of young obtainable per pair per year will be taken up further on in our book, under another heading, but we will here set down a few illustrations, using only minimum figures, and see just what you may expect from your birds. A good average for a pair of breeding stock to produce is ten birds per year, and from that number up. The largest number of birds that we have heard of anyone breeding from a single pair in a year is forty. These were raised by a lady about sixty years of age, living alone and having ninety pairs of green breeding stock. She, of course, did not average forty young per pair, but claims to have raised forty birds to the pair with several pairs. These were bred twelve months

straight through, with no time allowed for resting the breeders. But suppose we use the small average of ten birds to the pair, and the retail selling price of \$5.00 per pair, you would then realize \$25.00 on the young produced from one pair of breeding stock, or \$250.00 per year on a pen of ten pairs.

The work involved in breeding this number of birds is negligible, only about one hour per week when seed hoppers are used, while the average cost of feeding a pair of Parrakeets a year is less than \$1.00, or say \$10.00 for ten pairs. This when subtracted from the total amount received for young leaves \$240.00, figured on a minimum basis, and from that amount up to \$300.00 can be realized.

It must be thoroughly understood in the beginning that the profits mentioned above can not be expected by breeding stock of all ages and of inferior quality.

If you are to succeed, it is absolutely essential that you start with nothing but the finest unrelated parent stock; stock that is hardy and acclimated, and in shape to stand the cold Winters, and in prime condition, so that when the first signs of Spring appear your birds will be ready to go to work and to stay at work, turning out sturdy youngsters throughout the entire season.

It will pay you to obtain at the start nothing but the finest unrelated stock that it is possible for you to buy, otherwise your venture will not succeed and you are defeated before you start. You need not expect to succeed if you use birds of undetermined age and relationship. When buying your foundation stock, choose a dealer with a good reputation, one with experience, and purchase from him only unrelated, home-raised birds of a pure strain, and your success is assured.

Start Right or Do Not Start at All

Like all other enterprises, the degree of success in the breeding of Parrakeets depends entirely on the individual making the effort. Like all other ventures, regardless of what line of endeavor is attempted, there will be some who will fail to make a success of it. The degree of success in any line is dependent solely on the individual, the earnestness of effort, the study of the subject, and the work devoted to it.

The writer has known two individuals who have started other business enterprises. One of them was highly successful and became a leader in his line of endeavor, while the other, with an equal opportunity, soon failed and faded from the picture. The reader no doubt knows of similar cases. The breeding of Parrakeets is no different in many respects from any other enterprise—some will make a success of it, while others will fail.

Let us sound this one word of warning in the beginning—**IF YOU DO NOT LOVE BIRDS AND ENJOY KEEPING THEM, DO NOT GO INTO THE PARRAKEET BUSINESS**, for the chances are ten to one that you will fail. The chief requisite in making a success of Bird Breeding is to actually love the birds, to enjoy their company, and to derive real pleasure in caring for them and seeing them produce their families of youngsters. If caring for your birds, feeding them and handling them is not a genuine pleasure, our advice to you is—do not attempt to raise Parrakeets. On the other hand, if you derive genuine pleasure from these things and enjoy the song and beauty of birds, the Parrakeet business will undoubtedly prove to be a pleasant as well as profitable occupation.

Housing

Before having your breeding stock delivered to you, be sure that your breeding aviary is ready to receive them, so that the birds on arrival can be immediately transferred to their new quarters.

The subject of aviaries is an important one, and we are showing on page 19 an illustration of an ideal breeding aviary. This aviary is built to suit all climates, and with a few minor changes can be adapted to all conditions. For instance, in sections where heavy snows are prevalent the roof should be pitched to an angle of 45 degrees to withstand the pressure brought to bear on it in winter, while in milder sections the shed roof as shown in the picture is adequate. This aviary is over all fourteen feet long by six feet wide and seven feet tall, and is built to accommodate ten pairs of breeding Parakeets. The flight pen is eight feet long by six feet wide, while the house is six feet long by six feet wide. By adding one more foot on the house, making it seven feet long by six feet wide, it will accommodate twelve pairs of birds. It is advisable to build the aviary full size, even though you start with a single pair of birds, for few breeders are ever satisfied until they fill the aviary to capacity. One or two pairs will breed as well in the large aviary as a dozen pairs, so you can add breeders to your flock gradually, providing your aviary is built large enough in the first place. This drawing is simply to give you a general idea of aviary construction. It can be varied in a great many ways and can be built in a number of different shapes. The only thing that must be considered when building your aviary is the question of comfort for your birds during cold weather.

Many people turn spare rooms or screen porches into aviaries by simply putting wire netting over windows and a

plentiful supply of sand on the floor. This kind of breeding plant will prove highly satisfactory. Another suitable breeding plant can be had by using the attic of a house or the loft of a well-built barn. The individual breeding pens, however, should not be too large, preferably about eighty square feet of floor space. This will conveniently house twelve pairs of Parakeets.

The flat roof of an apartment house in the heart of the city can be made to accommodate one or more aviaries like the one shown on page 19 equally as well as a garden or yard. Parakeets make a busy, happy family when kept in such an aviary and pay no attention to surroundings.





Color Plate B

Upper — Grass Green Shell Parrakeets

Lower — Canary Yellow Parrakeets

Equipping the Aviary

The equipping of an aviary for breeding Shell Parrakeets is a simple matter, nevertheless it is very important. Let us take for consideration a standard pen built for twelve pairs. Such a pen should have arranged around the walls eighteen standard nest boxes (the construction of these boxes will be taken up further on in the book), or three nest boxes for each two pairs of breeders. The extra nest boxes must be put in to prevent the birds from fighting over the most desirable locations when choosing their abodes. These extra boxes will allow the birds to have a wider choice and thus prevent much fighting, which is sometimes quite vicious when the birds are choosing nesting sites. Two females have been known to fight until one was badly injured and died of her wounds. This occurred in an aviary where insufficient nest boxes were supplied, but with the extra nest boxes one experiences no such trouble.

Perches should be abundant and conveniently located, both in the breeding house and in the flight. We know of nothing more suitable than the natural boughs of trees. They are nearer to nature, and the birds seem to like them better than the milled variety. Parrakeets are great "whittlers" and enjoy chewing the bark off such perches. It is therefore better to use dried limbs if possible, as the birds sometimes eat the green bark of some varieties of shrubs, causing diarrhoea and other digestive disorders.

While Shell Parrakeets are able to withstand freezing

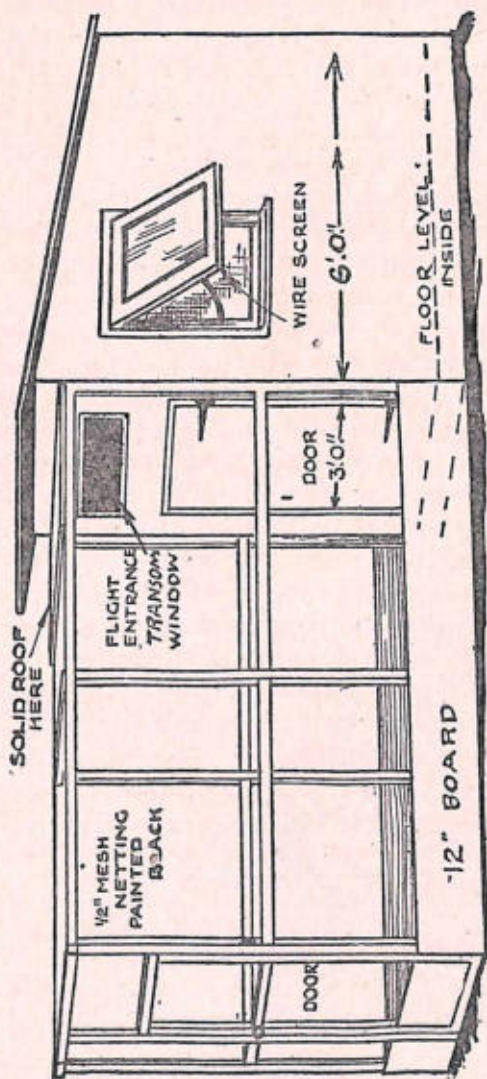


Nesting
Gourd

weather in such an aviary, it is not wise to subject the birds to such cold weather suddenly. If your birds are to stand freezing temperatures, they must be acclimated to the cold slowly.

Getting back to the subject of equipment for your breeding aviary, let us first take up the nest box. This should be about six inches by seven and one-half inches square by eleven inches deep. On first thought this size box seems large for such a small bird, but experience has taught us that a large box is quite necessary, for Shell Parrakeets raise unusually large families, often numbering as many as ten young in a single clutch, while a nest of from six to eight young is a common occurrence, with possibly five young per clutch as an average nest for a flock. As the young grow rapidly, it takes a fairly large nest box to hold so many—however for cage breeding the nest box should be only about 5x5x8 in size. Shell Parrakeets do not build a nest, but lay their eggs on the floor of the box, therefore no nesting material of any kind is required and should never be allowed in the cage or aviary. It is absolutely necessary that the bottom of the box be concave in shape, to prevent the eggs from rolling around in the box and becoming chilled. If you construct the nest boxes yourself, make the sides and top of one-half-inch material. The top should be removable or hinged for easy access, and the bottom should be a solid block one and one-half inches thick, with a concave "nest" chiseled out of the center, about four and one-half inches across and three-fourths of an inch deep. Such nests will insure 100 per cent hatch of all fertile eggs.

The feed pans or hoppers are another important subject. While the feeding of Parrakeets is a very simple matter, it is nevertheless important that they be amply supplied with food at all times, especially when there are young in the nest to be fed. In cases where a person's time is limited and the birds can claim only a small share of it, we advise the use of the seed hopper or automatic feeder. This hopper will keep



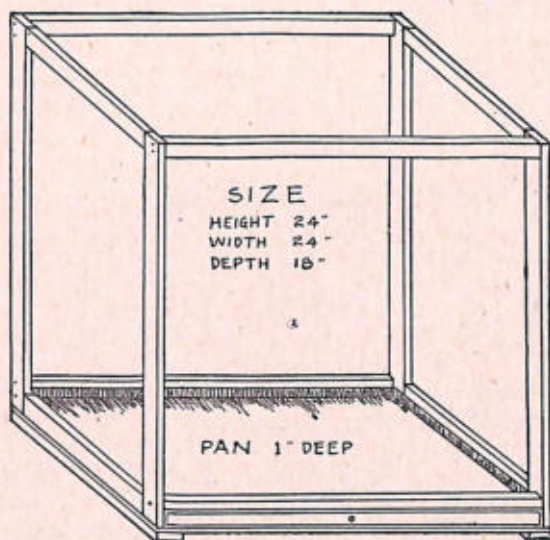
IDEAL BREEDING AVIARY

This Aviary is 14 feet deep by 6 feet wide by 7 feet tall, and is suitable for housing ten breeding pairs of Parakeets. By running a partition lengthways through the center, it will accommodate two families of six pairs each.

the birds well supplied with seed for a week or a month with one filling, depending, of course, on the size of the hopper and the number of birds in the aviary. Earthenware flower pot saucers are ideal where seed hoppers are not used. Fill them daily, two for seed and one for health grit. This, of course, takes more time and labor, but we like to go through the aviaries daily and see that everything is in ship-shape. Where one has the time to devote to it, we believe the open seed dish is better, and the daily feeding is really a pleasant task and makes you better acquainted with your birds.

Where the water pan holds enough water to last more than one day, and is sufficiently protected from the droppings to insure cleanliness, it may be washed and refilled with fresh water every other day. If the pan is not protected from the droppings, it must be cleaned and fresh water given daily. A splendid water fountain is the inverted type of chicken drinking fount, which is described fully further on in this book. Where it is possible to have a hydrant in the aviary, the water can be allowed to drip slowly into an earthenware pan and will need practically no attention, as the water will always be fresh if the pans are washed once a week.





A GOOD HOME-MADE BREEDING CAGE

The framework of this aviary is made entirely of $1\frac{3}{4}$ " by $\frac{3}{4}$ " lumber. This frame is to be covered with $\frac{1}{2}$ " square mesh wire fabric, painted dark green for better visibility.

First make the base by nailing onto two timbers a square of three-ply veneer board 18" by 24". Next nail the four uprights as shown in the picture. The rest is too plainly illustrated to need explanation except to explain that the narrow piece in front over the pan is $\frac{3}{4}$ " by $\frac{3}{4}$ " and is made by ripping one of the $1\frac{3}{4}$ " by $\frac{3}{4}$ " timbers. This piece is put in so that the wire fabric can be securely nailed to it above the pan.

For a door, cut a 3" by 4" opening in the wire fabric in the exact center of the front and then hang a 4" by 5" piece of the wire fabric over it, so as to swing upward to open.

Have pan of galvanized sheeting made to fit cage. This aviary can, of course, be made any size.

Stocking the Aviary

We have now gotten the aviary ready for the birds, so let us again take up the subject of the breeding stock. As stated before, the quality of breeding stock with which you start is the most important thing to consider when raising Parrakeets. The degree of success attained in breeding, whether on a small or large scale, will depend almost solely on what kind of foundation stock you choose when starting the venture. We have made a comprehensive study of this subject and are convinced that the successful breeder must have gentle home-raised birds of the highest type. These domesticated Parrakeets know no other life but aviary life and are happy and satisfied. We have proved this many times by allowing some of our aviary birds to escape. These free birds spend their entire time crawling around over the aviary, trying to get back inside again, until finally they are caught with a net by an attendant and put back in the aviary. Occasionally a free bird becomes frightened by its new surroundings and in flight loses its bearings and disappears for good. The majority, however, usually turn up in two or three days and are welcomed home by the attendants.

Parrakeets are remarkably long-lived birds and will breed continually for you for a period of ten years or more, their most productive years being the first four.



The Time to Begin

Regarding the best time in which to start Breeding Operations: On first thought one would suppose that the Spring season would be best, for at that time weather conditions seem more favorable and the birds can be put in the outdoor aviary at once and will be ready to breed during the Summer, continuing to breed until the nest boxes are removed in the late Fall. Yet, on the other hand, if one orders young birds in the Fall or Winter months, they will be ready to go to work in the early Spring, having had time to mature in the meantime. This will give you three months more valuable breeding time or a nine-months season the first year, instead of a six-months season as would be the case when birds are ordered in the Spring. We believe that one time of the year is as good as another to start. If birds are ordered during coldest Winter months they can be kept indoors until about March first with very little work, as three pairs can be matured in a cage about twenty-four inches square, and six pairs in a proportionately larger cage. During the maturing of your birds you can build your aviary and have everything ready to start when the weather moderates sufficiently. Of course, in the milder sections of the country, where the temperature does not go below fifty degrees, the birds can be put right out in the aviary without the loss of birds from cold. We breed Shell Parrakeets right through the Winter where the temperature occasionally goes as low as eight degrees below freezing, which is twenty-four degrees above zero. It is surprising how much cold domesticated birds can stand without discomfort or harm. We know breeders who

keep their birds out of doors the year round without artificial heat and where temperatures go as low as 32° without harm to the birds. They of course do not attempt to breed them during such low temperatures, but use the cold Winter months for the birds' resting period. They are then ready to go to work in the Spring and will breed until cold weather sets in again which in most sections allows the birds about an eight-months breeding period. Remember this, home-raised domesticated Parrakeets have no special season in which to breed but will breed when allowed to do so any month in the year, Winter or Summer.

The reasons for not breeding in the cold Winter months are that the females are liable to die from egg binding and the young are apt to freeze in zero weather. The best plan to adopt in the extremely cold sections is to remove the nest boxes in November or December and put them back about March first, having allowed the birds to rest from their prolific breeding activities. This insures larger broods and sturdier youngsters during the coming breeding season.





Color Plate C

Upper — Cobalt Blue Shell Parakeets

Lower — Azure Blue Shell Parakeets



NYASSALAND LOVE BIRDS

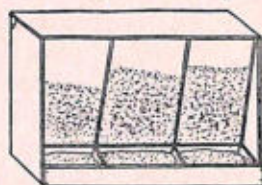
Parrakeets

Prolific Breeders

Shell Parrakeets are prolific breeders and rear large families of young, some breeders claiming an average of six young to the nest. After hearing the experiences of many breeders we believe the average per nest is about five youngsters, although there are pairs that continually produce from eight to ten in each nest right through the season. Such cases however are the exception to the rule and only help to increase the average of the flock. The more prolific pairs will sometimes turn out as many as thirty to forty youngsters per season and are highly profitable to their owners, but from these figures one is apt to get an exaggerated idea of the productiveness of the Shell Parrakeet. Let us therefore hasten to add that these figures are only to illustrate the possibilities of exceptionally fine birds and that we must deal with the aviary on a basis of averages, which figures are after all more stable and interesting. Let us repeat that the average brood should be about five youngsters to the nest and the average young per pair for the season about ten to fifteen. This average for the season seems small when we consider that they have an eight or nine months breeding period. As it takes only about two months to produce a brood, one might conclude that all that is necessary to ascertain the number of youngsters to expect per pair would be to figure four broods of five each equals twenty. But here again we are getting away from old man average who usually evens things up to suit himself.

The reason you can seldom count on an average of twenty is that all of your birds will not work on schedule and rear

four broods per season. Some disappoint you with only two broods, while others will rear only three, but the majority will produce four broods so that you can see where we get our average figure of ten to fifteen birds to the pair per season. When compared in value with the cost of production,



Seed Hopper

this average will easily show you a handsome profit. The writer is acquainted with a breeder who has an aviary eight feet wide by fourteen feet long in which he keeps twenty-five pairs of Shell Parrakeets. These twenty-five pairs produced for him in one year five hundred and seventy-six young birds, or

an average of a trifle more than twenty-three young to the pair. All of them were sold at a handsome profit. Figure such production at only five dollars per pair and the results are almost unbelievable.

The mortality loss of your breeding stock during the year should be very small as Shell Parrakeets are primarily a hardy species and seldom die from anything except old age if they are properly cared for. However, you must expect some mortality in your aviary, but at the same time you must of course do everything in your power to prevent it. We will mention here some of the chief contributory causes of death. First, death by accident, usually caused by the birds killing themselves by hanging on strings and wires carelessly left in the aviary. Never leave a piece of wire with the loose ends forming a V as a Parrakeet is intensely inquisitive and playful, usually playing with the wire until he succeeds in hanging himself by the neck in the V. The next most dangerous cause of mortality is diarrhoea. This is caused by over feeding green food, feeding too much lettuce, etc. Too much green food fed to birds not used to it is dangerous. Never feed lettuce to Parrakeets at all as one or two invariably eat too much and may die from loose bowels. It is better to feed

green food about every other day and then just the amount they will eat up clean. Parrakeets can get along nicely without any green food and will bring up their young without it, but they are healthier and happier with it. They also feed their young better when fed ample green food such as grasses, vegetable tops, etc. If your birds should develop loose bowels from eating too much green food, discontinue it for two weeks or until all traces of the ailment have disappeared. Never feed oranges at all.

The next greatest cause of death is Septic fever. This disease as well as all other diseases can be easily prevented simply by keeping the aviary clean and feeding fresh, wholesome food. No disease can get a foothold in a clean, well cared for aviary. Septic fever is a wasting disease like tuberculosis and is caused by unclean, poorly kept aviaries. No well kept aviary ever loses any birds from this cause.



Mating

Parrakeets are rather particular about the selection of a mate and sometimes take a great deal of time in doing so. This is one reason why we suggest getting your breeders early and letting them choose their own mates. In this way they will all be paired off and ready to go to work as soon as the breeding season opens.

While Parrakeets sometimes are slow in mating, it is because they want to be sure of a suitable companion, for once they are mated it is a life-long contract with them; they remain true to each other until death parts them. After the death of one or the other of the pair the remaining bird readily selects a new mate and things move on as smoothly as before.

When starting a breeding pen of Parrakeets one should be sure to have an equal number of males and females, otherwise there will be much quarreling and time wasted in fighting over a mate. As usual the female of the species is more dangerous than the male and one should by all means avoid having an extra female in the aviary. An unmated female in the aviary is apt to be a "holy terror" and will do more harm than one can imagine possible for a single bird to do, in breaking up nests of eggs and murdering the young in the nests. We have had an odd female in an aviary destroy as many as six nests of young and eggs in a very short time.

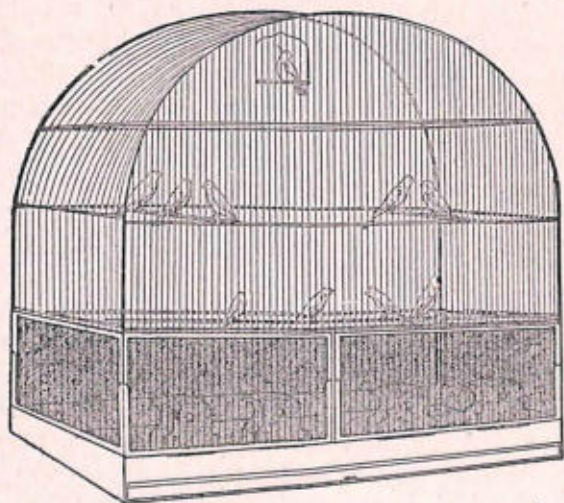
Such a female after a siege of destruction usually winds up in a terrific fight with another female and often kills or gets killed herself in the combat. All this of course is unnecessary as one need never have an odd female in the aviary. Strange to say an odd male is perfectly harmless and many breeders keep an odd male in each aviary in order to guard against the possibility of trouble should a male die unex-

pectedly. However we believe such a precaution is not advisable and practice the better method of having only evenly matched pairs in each aviary.

When placing your young birds in the breeding aviary the nest boxes should be put in at the same time. This allows the birds to get used to them gradually and when they are ready to go to work they will choose a nesting site in short order and start housekeeping. Young birds will pay no attention whatever to the nest boxes until they are old enough to breed. When you finally see them going in and out of the boxes you may know that you will soon be rewarded with eggs and young. Domesticated Parrakeets are quite tame and docile and do not resent in the least having their nest box taken down off the wall and inspected, that is, after they have once chosen their nests. However, it is best not to disturb them any more than is necessary until they have made their choice. It is then safe to look in the nest box as often as one chooses.

When the lid of the nest box is raised the female will be found sitting on the nest, apparently unafraid while you look into the box. She is apt to sit thus for a week before the first egg is laid. She then continues to sit on the eggs until all the eggs are hatched, only coming off occasionally for food and water. The first egg will hatch on the 18th day and thereafter one will hatch every other day until the whole clutch is hatched. The male then begins the task of bringing up the family, at first feeding the female by regurgitating the food, she in turn feeding the babies in the same manner. After the young are about a week old the female begins to leave the nest oftener while the male feeds the young direct and continues to do so until they fly out on the perches. Within two or three days after the young leave the nest they are able to shift for themselves. By this time the parents have usually started their next nest, quite often laying the full

clutch of eggs before the young leave the nest. For this reason the nest box should be taken down and cleaned just before the young fly, as the concave or cup shaped declivity in the bottom of the nest box will probably be filled with the hard, dry droppings of the young. If the nest is not cleaned of these droppings the next clutch of eggs may be scattered in the box and become chilled. It is an easy matter to clean the nest box—simply take the youngsters out and turn the box upside down. All of the accumulated debris falls out like so much sawdust, as there are no such soft, wet droppings as in Canary breeding. Replace the young and hang the box on the nail again and everything is ready for the next brood.



A Model Indoor Aviary

Sexing Parrakeets

Distinguishing the sex of adult Parrakeets is usually a simple matter. They have one sex marking possessed by no other bird. This is the cere or band across the bridge of the nostrils. This cere in the adult male bird is a bright blue, while in the adult female it is usually tan, changing gradually to a brown as the breeding age approaches.

When your birds are in poor physical condition it is difficult to sex them. The sexing of the young, is more difficult. For the first few weeks after the young leave the nest it is impossible to distinguish the males from the females as the cere of both sexes is the same color, a dull blue. However, when about two months old the cere on the female begins to fade and turn slightly white and later the tan color begins to appear. The young male retains the blue cere which becomes brighter until the breeding age is reached, when it is a bright blue. The young birds can be easily distinguished from the parents during the first month. After that they become more and more like their parents. It is therefore a good plan to remove the young from the breeding aviary after they have been out of the nest about two weeks. The safest and surest way to distinguish the young from the adult is by the forehead. On the young the forehead is striped across with tiny black stripes. These stripes begin to disappear when the young are about six weeks old, the forehead gradually becoming a bright yellow like the parents if the parents are green or yellow, while the foreheads of the young blue birds gradually turn white like the parent blues.

Shell Parrakeets sold by unreliable dealers are not always

true pairs as the customer rarely if ever knows a male bird from the female and is usually satisfied with the "pair" thus purchased. Two males or two females get along splendidly together in a cage and no one is ever the wiser, unless of course the customer tries to breed them. The results then are very obvious. The customer, however, still believing he has a true pair of birds, concludes that Parrakeets cannot be bred in captivity and usually abandons the project.





Marking Birds

It is well to put leg bands on your birds in the beginning so that you can keep a record of what they are doing. These bands should be numbered consecutively and the numbers then entered in a book for future reference. This is an especially good plan where one saves the young birds in order to increase the flock. If these bands are put on the young before they leave the nest and the number registered, it will prevent the mating of brothers and sisters and thereby save deterioration in the breeding stock. It also enables you to know the age of all your birds at all times, but principally it prevents inbreeding, which should always be avoided. It is also well to introduce new blood in the flock occasionally either by exchanging birds with a fellow breeder or by ordering new stock from your dealer. This method of registered breeding will keep your birds in tip top shape and save you the loss of many birds from inbred weaknesses.



Cuttle Bone
Holder



Domesticated Parrakeets

The breeding of Parrakeets in captivity is so little understood or even believed possible by the bird loving public that the things we set down in this chapter relative to what can be done with this remarkable bird are almost unbelievable. Yet all these things are being done regularly by breeders everywhere who are actually breeding Parrakeets in a large way. What do we mean by domesticated Parrakeets? Simply this: Parrakeets that have been domesticated from the original Australian wild bird to a state of domestic life and habits that are equalled only by our other commoner domesticated fowls such as the barnyard hen, which was propagated from the original wild Jungle Fowl of Java. The Jungle Fowl of the wilds only laid one clutch of small eggs per year, but has been developed by scientific breeding into a large meaty bird now known as the common hen, which lays large eggs for our table the year round. The domesticated fur and meat rabbit was evolved from the common wild rabbit. The same is true of the turkeys, ducks and other fowls, none of which has shown greater improvement or advancement than our domesticated Parrakeets.

This has been brought about by the careful breeding in captivity of the original wild Shell Parrakeet until it is as much domesticated as the fowls mentioned above and will now breed any month in the year, having no regard whatever for season as it formerly did in the wild state. There are many breeders who allow their birds to breed the year round without the three or four months rest period which we recommend. We do not believe it best to do this as it will

wear out the parent stock sooner or later and greatly impair their health. Such persistent breeding will also cause them to produce many inferior young birds, poorly feathered and small in size.

The domesticated Parrakeets also seem to have very little fear of man. It is an easy matter to get a flock of Parrakeets so tame that they will take food from the hand, especially green food of which they are very fond. They seem to recognize man as a friend and soon become well acquainted with their owners. One can go into the aviary at any time after the birds are once settled and look through the nest boxes, inspecting the young and eggs, or cleaning out the boxes without the slightest danger of frightening them or causing any to desert their nests. Indeed one can swap the young or eggs around from one nest to another without the danger of losing any. We often take the young from nests that have only a small brood consisting of one or two young and put them into other nests of young of about the same age where the brood is also small. In this way we relieve one of the pairs of any further family responsibility. This pair will then start a new nest. By thus condensing nests of young or eggs much time is saved and your yearly progeny production has been increased.



Glass Drinking
Fountain

The females who do the sitting will seldom leave the nest when you visit it for inspection and usually have to be pushed over to one side if you wish to count the eggs or young. It will also be observed that on entering the aviary all females that happen to be off the nests feeding will immediately make a rush for their boxes and sit on the eggs until all apparent danger is past. They are very brave little mothers and show the true mother instinct when they think their nests are in jeopardy.

Another odd fact that, insofar as this writer can ascertain, has never before appeared in print and is practically unknown even to most of the successful Parrakeet breeders, is that the young birds from domesticated parent stock can be taken from their nest a week or ten days before they would leave it of their own accord. These young birds when placed in a box to themselves will feed themselves on the regular seed mixture that the parents eat. This box should be at least ten by twelve inches square and about eight inches deep with no top of any kind except a cloth over it on cold nights. Keep the box in a light place undisturbed and put enough seeds on the floor of the box to cover it about one-half inch deep. The youngsters will start at once cracking and eating the seeds and on observation at night you will find the little crops full of food. Such a box will accommodate as many as twelve young. The writer knows one breeder who is working one hundred and twenty pairs of Parrakeets and is using this system of intensive breeding with her entire flock. This breeder is turning out an enormous number of fine youngsters yearly. She of course uses larger boxes and puts as many as forty young in a single box measuring eighteen inches by twenty-four inches by eight inches deep. This breeder goes through the aviaries each week and removes all of the young that are old enough and places them in these boxes where they stay until they are able to fly out in the aviary of their own accord. The box is placed on the floor of the breeding aviary and often the parent birds fly down and feed the various young in the box, but this is not necessary as the youngsters can amply care for themselves. The object of this procedure in breeding is to relieve the parent birds of having to feed the young, ten days earlier than nature would otherwise require. In this way the parents are free to start another nest of eggs and thereby accelerate generally breeding activities.

We do not recommend this method of breeding as we do not believe in forcing our birds. We believe the forcing of the parents abnormally to produce young faster than they naturally would if left to their own devices, is apt to weaken the strain a little from overproduction. We simply set down the possibilities here and let the breeder choose his or her own method of breeding.

If one wishes to make the young birds "finger tame," we suggest that you by all means adopt the method of "box breeding" as explained above. By this method you can fondle the young daily and thereby keep them tame and gentle. Finger tame birds find a ready market as pets and bring a better price than birds sold for "cage birds" or "breeding stock." If the birds are to be tamed as pets they should be taken out of the box several times a day and handled. In this way they soon learn that you are their friend and they are then quite easily trained to sit on the finger. They will learn to take seed from the lips of the owner and do many other interesting tricks. Such a bird when kept to itself where it can not hear other Parrakeets "chatter" can also be taught to talk a little, but can never be expected to become as proficient a talker as the parrot.

Parrakeets can also be bred in cages either one pair in a cage or two or more pairs in a proportionately larger cage. For breeding purposes a box type cage is often used. The "box" cage is quite simple in construction and easily made by even a boy. The "box" cage for a single pair should be at least 16x16x24 inches. It can be built of common box boards, or an apple box or goods box of similar proportions will do as well. After your box is constructed, nail across the front of it at the bottom a board one and one-half inches wide to prevent the seed husks from falling out. Next cover the front with wire netting of not more than three-fourths inch mesh. A perch one-half inch in diameter should be run across the

center of the cage from one end to the other. The door should be made in one end of the box cage for easy access and convenience when cleaning, while at the other end of the cage should be hung the nest box, but on the outside so that it can be easily cleaned. Make a small hole in the end of the box-cage about one and one-half inches in diameter, then hang the nest box against it so that the hole in the nest box will be parallel with the hole in the cage. The birds can then pass back and forth from the cage to the nest box freely. After you have your breeders safely housed in the cage it should be placed in a light place where it will remain, for you cannot move it around like the ordinary cage and expect your birds to breed well.

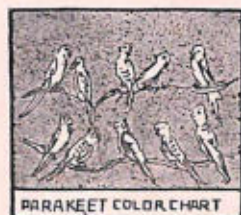


Color

The predominating color of the original wild Shell Parrakeet is a bright grass green. The wings are grayish green interspersed with small black shell designs, while the top of the head and forehead are a bright yellow, the long pointed tail is royal blue and black. From this original green bird man has, by careful selective breeding, developed eight other distinct colors, now called standard colors, practically all of which are now established strains and will in most cases breed true to color. The colors now to be had besides the original Grass Green, are Olive Green, Azure Blue, Turquoise Blue, Cobalt Blue, Violet Blue, Mauve Gray, Canary Yellow, and White with a tinge of blue. In all other respects the various colored Shell Parrakeets are alike, and will interbreed freely with each other, green mating with blue, white with yellow, etc. For this reason one must be careful in mating the young breeders in the first place. It is best to mate green to green, blue to blue, and so on. However, many breeders mate them in various cross color combinations, allowing all to fly free in the aviary and to mate at will.

A curious fact in this connection is that no matter how you cross the standard eight colors listed above when pairing them off, they will usually breed young of one of the eight standard colors. Occasionally however, a "sport" or a rare new color will appear in the nest to the delight of the breeder. The new color breeding is a delightful phase of this interesting hobby. Since 1940 many new and beautiful colors have been developed, a few of the more popular ones are Grays, Cinnamons, Lutinos, Albinos, Opalines and Gray Wings.

It can readily be seen that color breeding is interesting to the



**A Standard Color
Chart is Invaluable**

hobbyist and commercial breeder. However, if you intend breeding for the market it will pay better if you breed the colors that are most popular and readily attract the most attention when displayed. These are Green, Yellow and Blue. The average customer will soon tire of any of the pale washed out new colors, while the bright blues, greens and yellows will always command attention.

Perhaps you are in a position to have only one aviary and want to breed more than one color, say greens and blues, and yet wish your birds to mate up evenly, green to green and blue to blue. You can gratify this wish by turning an even number of males and females of one color into the aviary to mate and then placing your birds of a different color in a separate enclosure until they also have mated. They can then, with safety, be turned into the breeding aviary with the other birds with no danger of the colors crossing as Parrakeets choose only one mate and are not polygamous.

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More About Color Breeding
On The Following
Two Pages

A Revised Chapter On Color

Budgerigars are reputed to be the most colorful of all the Parrot type birds with the possible exception of a few of the large showy Parrots of South America.

Many breeders make a business of color breeding, that is producing new and unusual colors. So far only various shadings of the standard or normal colors have been produced, namely, green, blue and yellow. The only color missing in the primary colors is red. The red shades are difficult, if not impossible to produce. The red colors in varying shadings have been brought out in the canary, but only after crossing the canary with the South American Red Siskin, and then by interbreeding the off-spring from the cross bred progeny. There is no Parrot type bird yet discovered that has the necessary red plumage and is also small enough to be crossbred

with the Budgerigar. Some day perhaps by some fluke the red or pink shading will show up in a Budgie; it at least gives the host of Budgie color fanciers something to look forward to.

The greatest difficulty in color breeding is establishing a color strain, after producing the new color. Many new pastel shades appear from time to time in the breeding aviary, but the crux of the art of successful color breeding, is being able to reproduce the desired color ever and over again without having any throwbacks to the standard or normal colors. When this can be done with certainty, the breeder will have then, and not until then, established a color strain. Rest assured that such a feat requires not only a lot of hard work, but also involves considerable expense in bring-



Turquoise Blue Parrakeet

Breeding

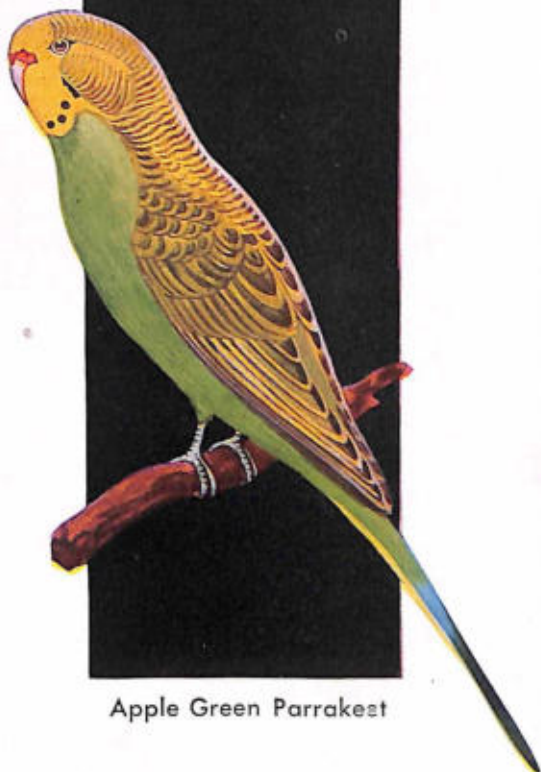
ing about such a laudable achievement.

One fact remains undisputed by the general public, is that the so-called normal colors are considered the most beautiful, and are more readily sold than any of the new colors yet produced. This fact was proved by a test made by the pet departments of the large department stores in the east. It found that the average customer not versed in the parrakeet hobby, selected the normal green as their first choice, the normal blues were second, yellows third, while the normal blue-whites made a very meager fourth - place showing. The new hybrid colors, obtainable at the time were the poorest sellers, even though they were offered at the same price as the normal colors. This does not mean that there is not a place for

the many beautiful new colors, the new colors will always be popular with the fanciers and breeders, nevertheless there will always be a steady demand for the lovely greens, blues and yellows.

Some of the new colors now available are the Gray Wings. These have light gray wings with pastel-colored under parts and heads. Other new colors that are popular with the fanciers are Cinnamons, Lutinos, Pink-eyed Albinos, Opalines, Buttercups, Yellow-Faced Blues, Fallows, Apple-Greens, Mauves and Violets. Many of these handsome new colors are most worthy productions.

On the agenda of the fancier-breeder right now is a Snow-White, a Jet Black and a Red-Tinged Budgie. Hats off to the breeder who first produces any one of these rare new colors.



Apple Green Parrakeet

Feeding

There is perhaps no question pertaining to the raising of Parrakeets as important as that of correct feeding. While the food requirement of Parrakeets is simple, yet at the same time supplying them food of the right quality regularly is absolutely necessary if your birds are to be kept in good condition. One can not feed Parrakeets just "bird seed" such as is packed in boxes to sell in the various kinds of drug stores, department stores, etc. This seed will not do for Parrakeets. It contains few of the seeds that Parrakeets require, such as the various Millets, and Plain Canary seeds. It often does however, contain various seeds that Parrakeets should NOT have. Such seeds are packed to meet the common demand of customers who think all bird seed is alike and do not know that different kinds of birds require different kinds of food. Many people think the words "Bird Seed" printed on the box means seeds suitable for any kind of bird. This careless method of feeding causes the death of thousands of fine birds yearly, not only Parrakeets but Canaries and Finches as well. Many birds starve to death with the seed cup full of such seeds. The bird family, like the animal family, is divided into many different species and sub-families. Each of these sub-families require a different food and the correct food must be supplied them if your birds are to be kept in good health.



Spray Millet

Shell Parrakeets should have before them at all times in liberal quantities, a mixture of fresh, plump recleaned seeds in the following proportions: Two parts choicest plain Canary seed, one part large red millet, two parts large yellow millet.

Parrakeets should also be fed sparingly with green foods, such as various vegetable tops, grass, clover, etc. Most any green food is good for them except lettuce. We feed green alfalfa and keep a small patch growing so that we can feed it freshly picked regularly. The green food should be fed three or four times a week. Feed only the quantity your birds will clean up at one feeding and then remove what is left. After a few feedings of green food you will learn just the right amount required to feed each time so that it will not be necessary to remove any of it. It is well to feed the green food daily while the parent birds are rearing young, although it is not absolutely necessary to do so. We believe, however, that this daily feeding of green food makes sturdier young and is a good plan to follow.

Next in importance to food is plenty of good mineral health grit. Parrakeets require a great deal of mineral salts not found in the ordinary "sand" or "bird grit." In the wild state birds consume quantities of minerals such as lime, iron, sulphur, salt, shell, bone and charcoal as well as tiny particles of sharp stone. All birds and animals in the wild state know where these various minerals can be found and make many trips daily to their favorite mineral deposits. It is just as necessary or perhaps more necessary for them to have the essential minerals in captivity as it is for them to have minerals in the wild state if they are to be kept well and free from disease. A good mineral health grit is so inexpensive that it would be poor economy not to keep a plentiful supply before your birds at all times.

Cuttle Fish Bone or egg shells should also be kept in the cage or aviary at all times. This prevents the birds from laying soft shelled eggs and therefore saves them from becoming egg bound.

Last but by no means least in importance is a plentiful supply of fresh water daily. There are many good drinking fountains on the market, the best type perhaps being the common

poultry drinking fountain. This consists of an inverted crockery, metal or glass container which sets in a saucer of the same material. The saucer fills from the container as the birds drink. Any bird dealer has them in stock. Such a fountain keeps the water sweet and clean for several days at a time. Perhaps the best system if one has an outdoor aviary is a dripping water faucet inside the aviary. The faucet can drip slowly into a flower pot saucer. This arrangement assures the birds of a plentiful supply of fresh water and is less work for the owner of the aviary.

As mentioned in a preceding chapter the quality of your parent birds will have a heavy bearing on the quality and quantity of young your aviary turns out. If you want prolific breeders of large, healthy young, you should by all means get the best foundation stock that is obtainable. Old, worn-out birds are a poor investment and are bound to prove a disappointment to you. Brothers and sisters when mated with each other are unfit for breeding purposes, as they are bound to throw deformed, undeveloped young. It is as important to get unrelated parent stock in Parrakeets for breeding purposes as it is to have unrelated parent stock in poultry or domesticated animal breeding.



Love Birds

The true Love Birds are a distinct type of Parrot-like bird and are not to be confused with the Shell Parrakeets. Practically all species of these lovely birds are natives of the continent of Africa and may be easily distinguished from the Parrakeet family by their short, stubby body appearance. They all have short rather wide tails while the Parrakeet



family for the most part have long pointed tails. The Love Birds' habits, nesting and food requirements are also quite different from those of the Parrakeets. Parrakeets in captivity, particularly the Shell Parrakeets, build no nest at all but lay their eggs on the hard floor of the nest box, while all of the Love Bird family build elaborate nests of coarse straw, sticks, etc. Nest boxes for Love Birds should be a little larger

than the ordinary Parrakeet nest box; however, the writer has raised many fine Love Birds in the regular Parrakeet nest box.

Love Birds have much larger, chunkier bodies than the Parrakeets and for that reason the hole in the nest box should be at least one-third larger than that of the Parrakeet nest box or about $1\frac{1}{2}$ inches in diameter.

All varieties of Love Birds should be supplied with a quantity of coarse straw, sticks, raffia, etc. They usually fill the nest box full of this material and then make a rather spiral or curved entry way downward to the bottom of the box where the eggs are deposited. Owing to this thick nest construction and uneven entry way it is difficult to see the eggs without moving the nesting aside. This, however,

can usually be done without causing any trouble if it is not repeated too often and is done gently and with care not to disturb too much. Some of the species sit quietly on the nest during inspection while others will fly wildly out apparently in a mad frenzy. They soon, however, return and take up the task of incubation as contentedly as if nothing had ever happened, but they should not be bothered in this way too often. If disturbed too often they are apt to desert the nest entirely and thereby cause the loss of a clutch of valuable eggs.

The incubation period for Love Birds is from 18 to 24 days depending on the species. The clutch of eggs consists usually of from four to seven eggs, all pure white and only slightly oblong.

Like the Shell Parrakeet most of the Love Birds will go to nest any month in the year as they seem not to regard the seasons. It is, however, dangerous to breed them during the winter months unless your aviaries are located in a mild section of the country as the extreme cold is liable to cause the females to become egg bound. Egg binding often proves fatal and always leaves the bird weak and unfit for breeding again for at least four or five months. We recommend starting all species of Love Birds breeding in March. Under ordinary conditions the weather is usually mild enough during this month to start them. By the time they have their nest ready it is usually April which is early enough to allow them to bring off two or three broods of young by November when breeding activities should again be left off. The birds will then have the cold months in which to rest.

Love Birds will do equally as well when kept in small groups of say three to five pairs in an aviary as when kept in single pairs, providing the entire group is of the same species. Occasionally there will develop a fighter among the lot which will have to be removed but as a rule they are a docile, friendly lot and are quite happy when kept together. It is possible

to keep several pairs of the various species together in one aviary without trouble but this is not advisable as you can never be sure when a disgruntled member of an apparently peaceful family will go on a "rampage" and murder a nest or two of youngsters in the nests of some rival.

CROSS BREEDING LOVE BIRDS

Practically all of the various species of Love Birds will cross breed when allowed to do so. The crossing of the various species produces some pretty hybrids which are usually fertile and will themselves produce young similar to themselves. We do not recommend cross breeding any of the Love Bird family as they are all very similar in appearance and when a breeder allows the various species to cross breed promiscuously he is liable to find that he has a "hodge podge" of mixed birds with no two alike. Such birds are worthless when offered for sale as most fanciers want pure bred birds for their aviaries. In certain sections of the country, California in particular, there has been so much inter-breeding of species that in some aviaries it is rather difficult to find any pure bred Love Birds.

Feeding Love Birds is a simple matter as all species require about the same diet consisting of the following: 2 parts of Sunflower seed, 2 parts of plain Canary Seed and 1 part of Large Millet.

The usual green food should also be supplied as well as Health Grit and fresh water daily.

PEACH FACED LOVE BIRD

Habitat—South Western Africa.

Size—Twice that of Shell Parrakeet.

This is the largest member of the Love Bird family. The color is solid green with rosy pink forehead and checks. Beak red. Rump brilliant blue. Tail green with blue and pink markings. The female is exactly like the male in appearance.

MASKED LOVE BIRD

Habitat—Nyassaland.
Size—1½ times that of Shell Parrakeet.

The male and female Masked Love Bird are exactly alike in appearance, although the female is usually somewhat larger than the male. The whole head is black with a brownish tinge. Breast yellow. Beak red. The remainder of the plumage is green, slightly paler on the abdomen. There are large white rings around the eyes.

FISCHER'S LOVE BIRD

Habitat—Victoria Nyanza, Africa.
Size—1½ times that of Shell Parrakeet.

The male and female are alike in appearance. General color green. Orange red on the forehead, cheeks and throat, but slightly paler on the latter parts. The green on the head and neck is olive. The beak red and the rump blue.

BLACK CHEEKED LOVE BIRD

Habitat—North Western Rhodesia.
Size—1¼ times that of Shell Parrakeet.

The body of both the male and female is green. The forehead is brown merging into olive green at back of head. Cheeks and throat brownish black with a small patch of salmon red on upper breast. The beak is red.

NYASSALAND LOVE BIRD

Habitat—Nyassaland Protectorate.
Size—1¼ times that of Shell Parrakeet.

The male and female are exactly alike in appearance. Body bright green, forehead, cheeks and throat bright orange red. Beak red.

MADAGASCAR LOVE BIRD

Habitat—Madagascar.
Size—1¼ times that of Shell Parrakeet.

The plumage of the male and female of this little bird is quite different. The body of the female is solid green all

over while in the male the head, neck and upper breast are a delicate lavender gray. Beak horn color. The tail feathers in both sexes are green, marked with black bars.

ABYSSINIAN LOVE BIRD

Habitat—Abyssinia.

Size—About twice that of the Shell Parrakeet.

The male is a brilliant green all over with a bright red forehead and beak. The female is like the male except that she is minus the red forehead.

COCKATIEL

Habitat—Australia.

Size—Body about the size of the common dove.

The Cockatiel belongs to the Cockatoo family, and although the predominating color is gray, never the less it is one of the most attractive, as well as unusual, of the parrot-like birds. The male has a bright lemon yellow forehead, cheeks and throat. On each ear is a brilliant orange patch. The shoulders are white and the tail black. Both sexes have a lemon yellow crest which they can elevate and lower at will. The female is similar in color to the male, the principal difference is that she is minus the lemon yellow face and throat and has instead of a black tail, tail feathers that are a grayish color, striped with dull yellow bars.

Cockatiels are good breeders when kept in an aviary. They lay from five to eight eggs which require about twenty days to hatch. Male and female take turns incubating the eggs as do the Shell Parrakeets. They require no nesting material but lay their eggs on the floor of the nest box which should be hollowed out beforehand to keep the eggs from rolling around in the box and getting chilled. It is well to put a little fine sawdust in the nest box to prevent the eggs from breaking. The parents are good feeders and usually rear the entire brood of youngsters.

Many Cockatiels have been taught to talk when taken young





and carefully trained. They of course do not equal the talking parrot in this accomplishment as their voice, as in all small talking birds is highly pitched and hard to understand but there have been some fair talkers developed by patient training.

As natural singers and whistlers they probably surpass all of the untrained parrot-like birds as their natural call is a musical whistle that is most appealing.

Cockatiels are very gentle and may be safely kept in an aviary with most any of the large birds. They are seldom if ever aggressive and have been successfully housed even with the smallest finches without trouble from fighting.

The diet of the Cockatiel consists of 2 parts Sunflower seed, 1 part Yellow Millet and 2 parts plain Canary seed. Also the usual green food and a good Health Grit.



Parrots

Parrots are probably the most interesting of all birds owing to their ability to learn to mimic the various sounds they hear and more especially the human voice. There are a few other talking birds not of the Parrot family such as the Mynahs and certain of the Crow family; however, Parrots are so far superior in their talking proclivities to any other bird that a detailed comparison between them would be a waste of the reader's time.

Practically all Parrots can be taught to talk with varying degrees of success, providing, they are taken when fairly young. Some species are naturally more intelligent than others and learn much faster and become more efficient in the art of whistling, singing and talking than the less intelligent species.

Old birds that have been trapped can also with much patience be taught to talk. The writer has in mind one particular case where a woman purchased from a dealer, at a very low price, an old trapped bird. This bird was so wild that no one could go near the cage without enraging him to such an extent that he would flutter against the bars of his cage and scream in an effort to escape. Within a short while, with patience and many painful parrot bites, this woman had the bird tame enough to take food from her hand and within a year he was a capable talker and whistler, quite gentle and affectionate. It did, of course, take a great deal of time to accomplish this, but it proves the point that even wild adult Parrots can be taught to talk. The species of this particular bird was the popular Panama Parrot.

Parrots are naturally long-lived birds, sometimes living to be over one hundred years old. There are many cases on record where Parrots have been handed down in families

from generation to generation like family heirlooms, the bird remaining healthy and happy during its long life. It is needless to say that such a bird is much loved and receives only the best of care.

It is much better to buy a young untrained Parrot and train it yourself than to buy an old bird that has been taught to talk by someone else. In the latter case you have a "ready taught" bird that calls unfamiliar family names, the names of dogs, cats, etc., and also speaks sentences that mean nothing to the new owner, whose family names are entirely different. By securing a good young bird you can quite easily teach it to call the names of members of your own family as well as the names of various household pets.

In teaching a young Parrot to talk, do not begin by trying to teach him a single word at a time, for a Parrot can never be taught to put different words together in order to form sentences. Therefore, if you want your bird to speak sentences you must teach him complete sentences and not single words. Pick out a short sentence that is interesting, one that really means something, and then keep repeating it in his hearing over and over, day by day, until he begins to say the same words. At first he will say only part of the sentence, but within a short while he will be speaking the entire sentence, using the exact accent that you have been using. After the first sentence is learned he will readily add new sentences to his vocabulary; he will also sing songs and whistle tunes.

Feeding Parrots correctly is of the utmost importance, for their health and long life depend almost entirely on their diet. Good plump Sunflower seed is the main food for all Parrots, plus a little dried whole wheat bread, raw peanuts and Canary seed. Most parrots are fond of fruit and should be fed plentifully of such sweet fruits as apples, bananas and grapes. Raw vegetables, such as carrots, turnips and cabbage are also a splendid food. Oranges and other acid fruits are not recom-

mended for some members of the Parrot family. Never feed Parrots cake or other sweet foods, nor any kind of meat or greasy food. Many owners of pet Parrots, believing their birds crave a change in diet, feed them various delicacies from the table, thus ruining the health and happiness of a perfectly contented and perhaps valuable bird. As a matter of fact, Parrots do not crave a change from the diet outlined above and will live longer and be happier when fed such a diet.

Cleanliness is a mighty important factor in the life of any live stock and especially is this true with Parrots. Keep the cage thoroughly clean at all times as a preventive of disease. Wash the cage and the seed and water cups frequently and scrape the perches often so that no disease can get a foothold. Keep the bottom of the cage covered lightly with clean sand to prevent droppings from soiling the feet and plumage.

It is suggested by the writer that you do not name your bird "Polly." This name is a very common one for Parrots and for that reason we believe you will enjoy your bird more if it has the distinction of being named "Jack," "Bill," "Pete," or any one of a number of other appropriate names.

As it is a very difficult task to breed Parrots in captivity we are omitting further comment on this subject. They have, however, been bred by a few aviculturists who had the time to devote to it and the large space required for the proper aviaries.

Below we list what experience has taught us to be the best of the talking Parrots. They will be listed in the order of their desirability and talking ability.

MEXICAN DOUBLE YELLOW HEAD

This bird, undoubtedly, makes the finest talker of any of the Parrot family. He is more intelligent and will learn to talk more readily than any other Parrot. He has the most human-like voice and also makes a good singer and whistler. He also

is quite gentle and affectionate. Young Mexican Double Yellow Heads are removed from the nests by the Mexican natives. After they are taken from the nest they are hand fed on corn meal mush until they are old enough to feed themselves. They are then shipped into the United States and distributed among the various bird and pet shops. You can always tell whether or not a Mexican Double Yellow Head is a young bird by the amount of yellow plumage on the head. If he is a young bird he will have only a small amount of yellow on the front part of the head. This yellow area becomes larger as the bird grows older until at the age of about three years the entire head is yellow, extending well down the back of the neck almost to the shoulders.

The Mexican Double Yellow Head is one of the largest of the Talking Parrots, being about fifteen inches long from top of head to tip of tail. The body is a beautiful green with a few bright red spots on the shoulders and wings. The head is yellow of varying degrees as explained above.

PANAMA PARROT

Next in intelligence and ability to talk are the Panamas. They are beautiful all green birds about the size of the Mexican Double Yellow Head. This bird as it grows older develops a small yellow patch at the back of the head. Their habitat is Panama and Guatemala. They are adept pupils and learn to talk readily, and in many cases equal the Mexican Double Yellow Head in vocabulary.

AFRICAN GRAY PARROT

The African Gray Parrot is considered by Europeans to be the finest of the talking Parrots. The writer, however, after exhaustive study and long experience, believes he is correct in declaring this Parrot third in all round ability to talk. We will concede, however, that they make by far the

finest whistlers, often whistling short tunes completely. They are somewhat smaller than the Mexican Double Yellow Head, measuring only about thirteen to fourteen inches in length.

The plumage is a lovely soft gray all over except the tail, which is a vivid red. The gray is lighter and softer about the head and darker on the wings. The beak is black.

Habitat, various parts of the African Continent.

MEXICAN REDHEAD PARROT

This is a very pretty little native of Mexico. It is a small bird, being about one-third smaller than the Mexican Double Yellow Head. Aside from the head which is topped by a bright red spot, the entire body is a lovely green, some having also a small amount of blue on the head, giving this little fellow a striking appearance. The Redhead is a very gentle bird and makes a delightful pet as they are seldom if ever vicious. They make especially nice pets for children, as they seem to enjoy being played with.

These birds when bought young make very good talkers, often equalling the finer birds when care and patience are used in teaching them.

CUBAN PARROT

The Cuban Parrot is a very beautiful bird and from a standpoint of color is superior to any of the aforementioned species. They are trim slender birds, measuring ten to eleven inches in length.

The Cuban is a beautiful green bird with white forehead and bright red throat. The wings and tail feathers are a mixture of blue, red and green. From this description one can readily see that he is indeed beautiful, but also as frequently happens, beauty and brains are not always compatible, as these Parrots are not gifted with any great amount of intel-

ligence. However, they are good mimics and soon learn to imitate the cat and dog or other familiar noises. They also make fairly good talkers when their education begins early in life.

CARTAGENA PARROT

This Parrot is about on a par with the Mexican Redhead and Cuban Parrots in intelligence and talking ability, although none of these three equal by a long way the first three mentioned.

The Cartagena is a little smaller than the Mexican Double Yellow Head, but is very similar in color, being a green bird with a small spot of yellow on top of the head. This yellow remains the same size and does not grow larger with age as with the Mexican Double Yellow Head. The habitat of this bird is the northwest portion of South America, particularly around the seaport of Cartagena.

AMAZON PARROT

There are a number of fine Parrots imported from South America, principally from Brazil and the Amazon Valley. There are several distinct species all of which make fair talkers, but the difficulty in the United States is to obtain them while still young enough to be taught readily.

MACAWS

South America is also the habitat of the most beautiful of all the Parrot family, namely the Macaws. These are the largest of the Parrots, often measuring thirty-six inches from head to tip of tail. There are eight varieties of Macaws, all natives of South and Central America. The three varieties that are popular in this country are the "Scarlet" Macaw—a vivid red bird with bright blue wings; the "Blue and Gold"

Macaw—which is as the name implies principally golden yellow and vivid blue; the “Military” Macaw, a bright green bird with a vivid red forehead and a mixture of green, red and blue in the tail.

Some of the Macaws have been known to make good talkers, but as a rule they can only be taught a few words and short sentences.

DWARF PARROTS

(Color Plate following Page 64)

Habitat—Mexico to Central America.

Size—About 3 times that of the Shell Parrakeet.

There are several species of the Dwarf Parrots, however most of them are alike in color as well as size and disposition. Most of them are solid green in color with bronze brown shoulders. Some have small patches of yellow on the forehead while others have similar markings at the throat. In appearance male and female are exactly alike.



The Dwarf Parrots are not recommended for their talking ability for as a rule they seldom make very good talkers. There are, however, exceptions to this rule as there have been developed some very good talkers among the Dwarf Parrots. However, their principal attraction is their gentle disposition. Some varieties make delightful pets and will

learn readily to do tricks. They make fine cage pets and seem quite contented when thus confined.

They can be bred when allowed the freedom of a fair sized aviary. However, the difficulty in this undertaking is to secure a true pair as both sexes are so much alike in color as well as disposition that it is almost impossible to be sure of a true





pair until they are ready to go to nest. The sexes can then be easily discerned by their actions.

Unlike the Shell Parrakeets and Love Birds, most of the Dwarf Parrots require fruit in their diet and should have either apple or banana daily if they are to be kept in good health. Other than fruit they should have a mixture of 3 parts Sunflower seed, 1 part Millet seed and 1 part Plain Canary seed.

All of the Parrakeet, Love Bird and Parrot family are naturally very hardy birds, but like all other birds occasionally become sick and need special care until well again.



Diseases

Most ailments suffered by Parrakeets as well as Love Birds and Parrots are due to wrong feeding and are usually due to their owners being over solicitous and feeling they should add a few delicacies to their regular diet. This mistaken idea is usually the cause of most of the illness suffered by all caged pets. Birds in the wild state eat only certain seeds, mineral and green foods and never have a craving for other food until it is forced upon them by some over indulgent owner. These foods if taken only in small quantities usually upset the digestive organs which is the beginning of most diseases that birds are subject to.

Never feed your birds anything but the right seeds and foods as outlined in the previous chapters of this book and your bird will live long and be happy and contented.

For the benefit of those who have sick birds occasionally, we are listing here the commoner types of diseases, their symptoms and cure.

First and foremost of all treatments for any sick bird is keeping the sick bird sufficiently warm day and night until

well. The normal blood temperature of small birds is about 105 degrees. This high temperature is about 7 or 8 degrees warmer than man's normal temperature, therefore when your bird is sick his living quarters should be kept considerably warmer than the sick room of a human being. The correct temperature for the little patient is 80 to 85 degrees both day and night; most people keep the bird warm enough during the day and then undo all of their good work by letting the little sufferer get chilled at night; they then appear surprised that the bird makes so little progress toward recovery.

If the sick bird is kept sufficiently warm, out of a draft and is fed properly there is little more that can be done, for, after all, nature is the surest healer when given a fair chance.

It is usually difficult to get a sick bird to eat; in fact, this is one of the most serious difficulties to overcome in their treatment; they must be made to eat if they are to get well; therefore it is very important to have ample food in the cage at all times. Place two or three dishes of seeds on the floor of the cage so that the patient can get it with the least amount of effort.

If the sick bird refuses food for as long as 24 hours, the chances of recovery are slim as birds become emaciated and waste away rapidly. The writer has saved sick birds by forced feeding of soft food with a medicine dropper, but this is a difficult task and is hardly worth the trouble.

We list here some of the commoner types of disease to which Love Birds, Parrakeets and Parrots are subject, and also outline a method of treatment that will in most cases restore the bird to its normal health:

DIARRHOEA

SYMPTOMS—Soft watery bowel movements; the natural movement should be formed pellets. Usually the feathers around the vent become dirty and appear wet, the bird appears

listless and sits with feathers ruffled up and often with head under wing.

TREATMENT—Discontinue all green food at once and do not feed it again until the bird is entirely well. Keep the patient in a warm room night and day at a temperature of from 80 to 85 degrees. Place the cage in a well lighted position, free from drafts. A good plan is to cover the cage with thin muslin; place a good supply of seed and water within easy reach of the bird.

Give two or three drops of mineral oil with a medicine dropper every other day; give fresh buttermilk instead of water; feed the milk continually until all signs of loose bowels have passed; also place a dish of ground charcoal (bird size) in the cage.

A good tonic in the drinking water is also good during convalescence.

EGG BINDING

SYMPTOMS—The female appears to have become very ill quite suddenly and is usually unable to fly, and squats on the floor of the cage or aviary. She refuses all food and water and will die quickly unless treated at once. The lower abdomen will be found to be swollen. The unlaied egg is usually quite discernible.

TREATMENT—Catch the bird and place in a small cage or box, small enough to allow a hot water bottle to cover the entire floor of the box. Fill the bottle with warm water, quite warm; place a towel over the bottle and cover the cage or box with another towel, making it fairly dark. Remove all perches so that the patient will have to rest on the towel. Before placing the bird in the cage or box give her two or three drops of Peptolax or mineral oil with a medicine dropper and insert a like amount into the vent with a medicine dropper. Place the bird in the cage and do not disturb for at least six hours. After this period has elapsed you will find that she

has laid the egg and her trouble is over. She should, however, be kept away from her mate and not allowed to breed for at least two months as the same trouble will recur unless she is allowed to rest.

PREMATURE MOULT

Premature moult or moulting out of season is a very common ailment of all cage birds and one that is wholly the fault of the bird's owner.

SYMPTOMS—The bird is noticed to be continually scratching and picking its feathers and appears to be fairly eaten up by vermin; this, however, is not the trouble. It is simply starting to moult or shed its feathers prematurely; this causes a severe itching sensation which in turn causes the bird to scratch and pick at the dead feathers and if the trouble is not remedied the bird will soon become bare in spots and will not regain its new plumage until the cause is removed.

TREATMENT—Premature moult is in nearly all cases caused from keeping healthy birds at too warm a temperature. Most people imagine that birds must be nursed and pampered, while just the opposite is true. Love Birds, Parrots and Parrakeets are naturally hardy birds and can stand very low temperatures without bad effects, but when in a room that is kept too warm they not only suffer a premature moult but become weak and fall easy victims to the commoner types of bird ailments. Never let the sun shine on your birds through glass, as this also invariably causes them to moult.

Parrakeet breeders in many states breed their birds in out-of-door aviaries the year round where the temperature in winter goes as low as 40 degrees above zero at night, and ranges up to 70 degrees during the day. These extremes in temperature only serve to make the birds hardier and immune to disease.

If you want your birds to be well and free from disease, do not keep them in a room that is too warm. A fluctuating temperature is better than an even temperature; 40 to 70 degrees is ideal in winter with the usual natural warm temperature in summer at which time birds moult naturally, usually in August. Care should of course be taken not to allow the birds in a draft as they are apt to take cold, which is very dangerous and might prove fatal.

COLDS

SYMPTOMS—Love Birds, Parrots and Parrakeets, like all other birds, take cold and suffer the usual effects when the cold is not cured at once, often going into pneumonia, a very dangerous and often fatal disease.

The first symptom discernible when a cold is contracted is ruffled plumage; the bird sits apparently puffed up in a ball, often its head under its wing; it can be heard to sneeze and cough occasionally. It appears listless and if not quickly relieved will refuse to eat. The nostrils which should be normally dry become moist and exude a sticky substance. The above are the symptoms of a common cold. Pneumonia is sure to follow unless the cold is treated early. The symptoms of pneumonia are the same as the common cold, except that the lungs become affected and the bird has trouble breathing, causing it to gasp for breath. After the bird reaches this stage it is very difficult to cure and should be removed from the aviary at once as pneumonia is highly contagious.

TREATMENT—First of all keep the little patient quite warm and at an even temperature day and night; 80 to 85 degrees is the correct temperature for sick birds. Give mineral oil every other day or a little Epsom salts. Place as much salts on a dime as it takes to form an oval heap, put the salts into two ounces of drinking water. Only give this every other

day. Be sure the bird has an abundance of food in easy reach. In addition to the regular seed, feed daily a little whole wheat bread soaked in fresh milk with the milk squeezed out. Feed no green food until convalescence and then only sparingly until the bird is well.

SEPTIC FEVER

Septic Fever is rarely ever encountered among Parrakeets, Parrots or Love Birds and is experienced only in aviaries that are overcrowded and allowed to become filthy and unsanitary. It is highly contagious and will sweep through the entire flock in a short while if not taken in hand early.

SYMPTOMS—Birds are first observed to be quiet and inactive, usually sitting with feathers ruffled up. On close examination the septic fever victim is found to be very poor and emaciated with a thin breast, as the disease is a wasting malady, notwithstanding the fact that the bird eats heartily up until the time of death.

TREATMENT—Isolate all suspected birds at once and spray the aviary where the remaining birds are left, with a solution of one part sheep dip to twenty-five parts of water; also use this same spray daily on the cage in which the sick birds are kept. Treat the sick birds as follows: Give bluestone in the drinking water daily until well. Put a piece of bluestone the size of a pea into one quart of water; allow to stand until dissolved, then place before the birds to drink as is.

Feed daily in addition to the usual seed diet whole wheat bread soaked in milk with most of the milk squeezed out. Keep birds warm day and night. There are no diarrhoea symptoms present in cases of septic fever.

PARROT FEVER

Parrot Fever or Psittacosis is a Parrot disease found occasionally in the jungles of South America. It is occasionally

brought to this country in shipments of Parrots that are crowded into filthy, poorly ventilated shipping crates. Such birds are usually located and condemned at the docks while in quarantine where they are promptly destroyed. The writer has never known of a case of Psittacosis among home-raised Shell Parrakeets, Parrots or Love Birds. From the study and experience gained from raising thousands of these birds and from talking with people who have had years of experience with Parrakeets, the writer does not believe it possible for a human being to contract any kind of disease from Parrakeets, Love Birds or Parrots.



SOME IMPORTANT "DON'TS"

- DON'T feel sorry for your birds and feed them a lot of things that are not good for them—if you do you will surely kill them.
- DON'T feed newly purchased birds green food for a few days, then feed only sparingly until they are used to it. Never feed more than they will eat up clean.
- DON'T expect to be successful breeding birds that are trained as pets, birds that are continually handled. They will not go to nest unless left entirely alone.
- DON'T expect poorly bred scrub Love Birds or Parrakeets to breed, they are not physically fit to do so and the young would be of poor quality and worthless if they did.
- DON'T expect miracles of your birds, remember they are only birds and nature's laws must be obeyed. They will do their part if you will do yours.
- DON'T put any kind of nesting material in your cage or aviary for Parrakeets, as they do not build nests.
- DON'T expect Parrakeets to take a bath. They do not bathe, but enjoy being sprinkled lightly occasionally.

- DON'T keep your birds in a room that is too warm as it will cause them to moult prematurely, and scratch continually.
- DON'T keep your birds in a draft. Love Birds and Parrakeets can stand a great deal of cold but a draft is dangerous.
- DON'T feed Love Birds and Parrakeets orange or other citrus fruits, they cause acute indigestion and fits.
- DON'T feed parsley or lettuce to Parrakeets and Love Birds.



SOME IMPORTANT "DO'S"

- DO keep an ample supply of pure seeds before your birds at all times, as well as a good mineral Health Grit, Cuttle Bone, and fresh water.
- DO give your Love Birds, Parrots and Parrakeets credit for having a little stamina and natural resistance to disease and don't pamper and baby them to death.
- DO feed your birds correctly. More birds are killed with kindness each year than from any other cause.
- DO keep the birds in a quiet, secluded place if you are trying to make them breed as they will not breed if moved about continually.
- DO start with pure bred stock from a reliable dealer as it costs no more to "breed pure bred stock than it does to breed scrub stock.
- DO keep their living quarters clean and wholesome. It is the surest way to ward off disease.
- DO feed spray millet occasionally; they enjoy this treat.
- DO give your birds good care and they will repay you for the effort.
- DO read carefully this book on the care of Love Birds, Parrots and Parrakeets and you will know exactly how to care for your birds without any other assistance or advice.





DWARF PARROT

COLOR PLATE E

(Following Page 32)

All of the birds on color plate E are quite rare and are seldom seen in the pet shops. They are, however, offered for sale from time to time, but at a very high price. This group of seven all belong to the Parrakeet family, all having long tails, (the true Parrots have short, broad tails). All of the birds shown in this group are very highly colored and represent some of the most beautiful Parrots. They seldom if ever, talk.

Color Plate E No. 1—Pileated or Red Capped Parrakeet (*Porphyrorephalus spurius*). Habitat—Southwest Australia. This lovely bird is threatened with extinction for two reasons, first, through reprisals of fruit growers whose orchards it devastates and second through the cutting down of native trees in its rather limited range. Owing to the strict Australian embargo on all birds the Red Cap is seldom seen in America any more. They have been bred in captivity both here and in England. It is a sizable Parrakeet, measuring 14 inches in length.

Color Plate E No. 2—Golden Shouldered Parrakeet (*Psephotus chrysopterygius*). Habitat—Northern Australia. This is an extremely rare specimen and is seldom seen except in the finer private collections or large zoological gardens. In size they are about the same as the Red Cap. It is not known whether or not they have ever been bred in captivity. So rare is it that little is known of its habits when kept in confinement.

Color Plate E No. 3—Bourke's Grass-Parrakeet (*Euphema bourkei*). Habitat—South Australia and New South Wales. This bird, like the Golden Shouldered, is also quite rare and is never allowed shipped out of Australia except for scientific purposes or for aviaries in parks and zoological gardens that are publicly owned. They are rarely seen in flocks such as

most Parrots but congregate only in small groups of from six to eight birds. Like most of the handsome Australian Parrakeets they can be bred in captivity. These birds are becoming quite rare in their native land and unless adequate steps are taken to preserve the species by aviary breeding it is fairly certain to become extinct within a very few years.

Bourke's Parrakeet does well in confinement, even being contented in a cage, and will breed readily in an aviary of fair size.

Color Plate E No. 4—Elegant Parrakeet (*Euphema elegans*). Habitat—New South Wales, West and South Australia. Total length about ten inches. This beautiful bird is also becoming rare in Australia owing to civilization encroaching on its native breeding grounds. Fortunately they are being bred both in England and California and it is hoped that in sufficient numbers to prevent the species from dying out. They make a poor cage bird but will do well in a roomy aviary. For a nest, in common with all Parrakeets, they prefer an old log, but will go to nest readily in a roomy nest box about 12 inches across and 18 inches deep. Aviculturists, by breeding these rare Parrakeets, are doing civilization a great service in keeping such rare and beautiful birds from becoming extinct.

Color Plate E No. 5—Turquoise Grass-Parrakeet (*Neophema pulchella*). Habitat—Southeastern Australia. Total length from tip of tail to beak about $8\frac{1}{2}$ inches. This little Parrakeet is well known to aviarists in England, France and America, having been bred freely in cages and aviaries in all three countries.

For several years prior to 1925 it was thought that these birds had become extinct in Australia and the only living specimens were in the aviaries of bird lovers. Within the last few years, however, it has again appeared in small numbers and it is hoped with proper governmental protection it

will multiply sufficiently to withstand all of its natural enemies. Tourquoisines have been taught to talk a little but their vocabulary is quite limited. Their winning attribute is their beauty and grace.

Color Plate E No. 6—Uvean Parrakee' (*Nymphicus uvaeensis*). Habitat—Uvea. Size 12 inches total length. This bird is one of the rarer crested Parrakeets and is seldom seen in captivity any more. What few specimens that have been kept in confinement lived only a short while. They do not take to cage life and soon pine away. What few specimens that have been kept in confinement for any length of time proved to be intelligent and soft voiced birds.

Color Plate E No. 7—Swift Parrakeet (*Lathamus discolor*). Habitat—Southeastern Australia and Tasmania. Total length 10 inches. One of the most beautiful of the large Parrakeets, a study in bright reds and greens, one of the few true Parrakeets that live largely on flower nectar and sweets as do the Lories and Lorikeets. They are, however, not to be considered similar as they belong to the true Parrakeet family. They take to aviary confinement readily and will breed in captivity if properly mated. The difficulty, however, is in securing a true pair. They, like all members of the Parrakeet family, occasionally suffer from bowel diseases, therefore care should be used in keeping all food and water vessels scrupulously clean. This rule should apply to all members of the Parrakeet family. They are naturally hardy birds but when kept in confinement fall easy victims to man's negligence in sanitation.

COLOR PLATE F

(Following Page 48)

Color Plate F No. 1—Black Cheeked Love Bird (*Agapornis nigrigenis*) Habitat—Rhodesia. The Black Cheek is one of the smallest of the true Love Birds. In size it is about the same as the Nyassaland. They have until recently been quite

scarce in America, but thanks to aviculturists they are now raised in abundance and can be had at a very reasonable price. Male and female are alike in color. Sex can usually be determined by examining the eyes, which are quite different in male and female. Black Cheeks are quite easily bred in an aviary requiring the regulation Love Bird nest box, which should be 12" high by 6" wide and 6" deep with entrance hole 2" across and near the top of the box. They make splendid parents and usually bring off the entire brood, numbering from four to six youngsters.

Color Plate F No. 2—Masked Love Bird (*Agapornis personata*). Habitat—Nyassaland. In size they are a little larger than the Nyassaland Love Bird and in appearance they probably surpass all other Love Birds for beauty, being a pleasing combination of yellows, greens, reds, blues and black. The Masked is one of the hardiest birds of its family and is one of the most suitable for an outdoor aviary. They go to nest readily in an aviary that is properly equipped with a plentiful supply of the regulation nest boxes. The young emerge from the nest fully feathered and unless removed from the aviary within a few days, it is difficult to distinguish the young from the adults. The best plan to pursue in distinguishing sex is to hold two birds firmly in the hand and when looking down on them the head of the female will be observed to be wider across between the eyes than the male. The head of the male appears also to be more elongated. This same method of sexing also more or less applies to all Love Birds. Masks are quite aggressive and some bloody battles take place when the birds are crowded in either cage or aviary.

Color Plate F No. 3—Black Collared or Swindern's Love Bird (*Agapornis swinderniana*). Habitat—West Africa. Very little is known of this lovely bird. It is exceedingly rare and so far as is known has never been bred in an aviary. In size

they are about the same as the Masked. They take readily to confinement but are difficult to breed.

Color Plate F No. 4—Cameroon Black Collared Love Bird (*Agapornis jenkeri*). Habitat—Cameroon, West Africa. Another very rare Love Bird of which very little is known. It is about the size of the Masked Love Bird but so far as is known has never been bred in America or England.

Color Plate F No. 5—Blue Crowned Hanging Parrot (*Loriculus galgulus*). Habitat—Malay Peninsula. This tiny little Parrot is in appearance more like a Love Bird than a Parrot. The illustration shows both male and female. It will be observed that the female is without the bright red patch on the breast. This little bird, unlike the Love Birds, is known as a nectar and fruit eating bird and in captivity must be fed banana, orange and other soft fruits as well as a mixture of honey water composed of half water and half pure honey. In some respects the little Blue Crowned are most desirable. They are noiseless and are attractive in color but are not recommended very highly for aviary life as they seldom produce young and are apt to kill themselves against the wire when frightened. In a roomy cage they make splendid pets and thrive well, although a little mussy to keep.

Color Plate F No. 6—Ceylonese Hanging Parrot (*Loriculus indicus*). Habitat—Ceylon. One of the most striking in appearance of the family of Hanging Parrots. In size, he is about the same as the Blue Crowned variety, about 5½ inches long. Unlike the Blue Crowned the male and female Ceylonese are alike in color. So far as is known they have never been bred in captivity. They could without doubt be bred if one were to give them the right breeding accommodations, such as a roomy aviary with plenty of green shrubs and many rustic branches and hollow logs standing upright. The food of the Ceylonese in confinement should be the same as the Blue Crowned Hanging Parrot.

Color Plate F No. 7—Philippine Hanging Parrot (*Loriculus philippinensis*). Habitat—Philippine Islands. Very little is known of this lovely little Parrot except that in size and appearance it is very much like the Ceylonese and like other Hanging Parrots they are nectar and fruit eaters. So far as is known they have never been bred in captivity.

COLOR PLATE G

(Following Page 48)

Color Plate G No. 1—Barraband's Parrakeet (*Polytelis swainonii*). Habitat—South Australia. This gorgeous bird in body is about the size of a dove, measuring $16\frac{1}{2}$ inches from head to tip of tail. It does not rightfully belong in a group of Love Birds but owing to its gentle disposition and splendid aviary qualities it is not amiss to include it in our color plate. Owing to the ease with which it stands confinement it is considered by some bird lovers to be the most desirable of all Parrot type birds in the aviary. They are a very noisy bird and for this reason are not recommended as a cage bird to be kept indoors.

Their nesting requirements are not unlike the Rock Peplar which do much better with a hollow log stood upright in the aviary than when man-made nest boxes are used. They lay from four to six eggs to the clutch and usually only one clutch during a season. They make fine parents and usually bring off successfully all that hatch. In England the Barraband is often turned loose on large estates and allowed its liberty during the summer months. In the fall it is caught and confined to the aviary until spring when it is again liberated. They are said to be ideal for this purpose and seldom leave home unless frightened by cats or other animals.

Color Plate G No. 2—Madagascar Love Bird (*Agapornis cana*). Habitat—Madagascar. Size, about the same as the Nyassaland Love Bird. As can readily be seen by the illustra-

tion the male and female show a marked difference in plumage. The female is all green, while the shoulders, neck and head of the male are gray with the rest of the body green.

As an aviary bird they are probably the least desirable of all the Love Birds. They are more difficult to acclimatize when imported, and home raised specimens are usually rather delicate and subject to colds and other pulmonary diseases. They are rather quarrelsome when kept with other birds and as is usually the case, "the female of the species is more deadly than the male," and will often murder any other bird in the aviary for no apparent reason. The Madagascar is considered easy to breed by some aviculturists but the writer has not found it to be so. On the contrary they have proved to be erratic, ill tempered and almost impossible to satisfy with nesting accommodations and in all ways most difficult to breed.

Color Plate G No. 3—Abyssinian Love Bird (*Agapornis taranta*). Habitat—Abyssinia. A rather large bird about 25% larger than the Nyassaland. Male and female are alike except that the female does not have the red forehead so pronounced in the male. These birds were one of the commonest as well as lowest priced of all the Love Birds until the present federal import regulations were put in operation. They are now becoming quite scarce and are seldom seen any more except in private collections. The reason for their scarcity is due to their reluctance to breed in confinement. It is hoped that the stringent regulations governing the importing of these parrot-type birds will soon be modified so that we can again see these charming birds in the pet shops. It is safe to say that there will never be enough raised locally to supply the growing demand. They are difficult to breed and unless conditions in the aviary are just right they will make no attempt whatever to go to nest. They are hardy birds and easily cared for in cage or aviary and are in great demand by aviculturists.

Color Plate G No. 4—Red Faced Love Bird (*Agapornis pullaria*). Habitat—Western Equatorial Africa. Male and female are alike except that the red on the face of the female is more orange red and the under wing coverts are green while on the male they are black. In their general appearance they are not unlike the Abyssinian Love Bird. They are more delicate and more difficult to acclimate. When acclimated, however they are usually very hardy and do well in both cage and aviary. They do well in a mixed collection of birds as they are most amiable. Like the Abyssinian they are exceedingly difficult to breed in confinement and for that reason are scarce and seldom seen any more.

Color Plate G No. 5—Fischer's Love Bird (*Agapornis fischeri*). Habitat—Victoria Nyanza. In size the Fischer's is about 25% larger than the Nyassaland. It is one of the most desirable of all the Love Birds. They are gregarious and seem to do better when kept in flocks than in a single pair to the aviary. They are docile and are quite easy to breed and will do well even with meager breeding accommodations. They should have the regulation nest box as previously described. Like all Love Birds, Fischer's should be supplied with an abundance of coarse straw and twigs with which to build their nests. They build elaborate nests and seem to like to build a spiral entrance from the top of the box to the bottom, where the eggs are then laid.

Color Plate G No. 6—Nyassaland Love Bird (*Agapornis lilanae*). Habitat—Nyassaland Protectorate. Size about one and one-half times that of the Shell Parrakeet. Formerly the most common of all the Love Birds, the Nyassaland was one of the first of the African Love Birds to be brought to America. One or two large importations were received in California in 1926 and 1927. These were distributed among the bird breeders and within a short time started multiplying rapidly and in 1933 reached their peak of production and

consequently the market on Nyassalands reached its lowest price. Surplus stocks were soon cleaned up by pet shops and offered to the public in the East at a new low price. Today Nyassalands are becoming scarce and are on a par with the other popular Love Birds in value and desirability.

Color Plate G No. 7—Peach Faced Love Bird (*Agapornis roseicollis*). Habitat—Southwestern Africa. The largest of the African Love Birds, being about twice the size of the Nyassaland. These handsome birds, with their peach bloom face and breast contrasted with the bright green which forms the rest of the body, are a joy to behold in any aviary. They are exceptionally fine breeders and turn out nest after nest of sturdy young with seemingly no desire to rest from their arduous labors of bringing up a family. They should be given a somewhat larger nest box than other Love Birds, the entrance hole of which should be about two and a half inches in diameter.

Peach Faces were a little slow in getting a foothold in America and have only during the last two or three years become plentiful enough to warrant a price low enough to place them within reach of the average bird lover. On account of this reasonable price they are now gaining rapidly in popularity and are expected within a few years to be on a par in demand with other Love Birds.

• COLOR PLATE H

(Following Page 56)

Conures are one of the colorful families of the Psittacine birds consisting of some forty known species. There are several allied species also that have not yet been classified. Conures are members of a large group of South American Parakeets. They are for the most part slender birds with long pointed tails. Their color range embraces every shade imag-

inable with greens, reds and yellows in profusion. Practically all species can be bred in captivity when housed properly and given the right nesting arrangements. It is best when breeding to keep only one pair in an aviary, but when a collection is wanted for display only, several pairs can be confined together. For a nest box the larger varieties, such as are shown in the accompanying color plate, should be given a roomy box measuring about twelve inches square and eighteen inches tall, with the entrance hole measuring four inches and placed near the top. A hollow log standing upright is also an ideal nesting place for all species. The chief objection of the species is their habit of habitually chewing up anything in the aviary made of wood, the nest boxes included. Most successful breeders of Conures face all woodwork with tin to prevent destruction. A good pair of breeders can usually be depended upon to bring off two nests of young per year, numbering from two to four.

Conures are a very hardy family and can stand extremely cold weather after they have become acclimated.

Another difficulty with breeding Conures is their likelihood of becoming eggbound if allowed to breed in winter. It is advisable to put the nest boxes in the aviary in the spring and remove them in the late fall. An ideal seed mixture for Conures is three parts sunflower, one part hemp, one part canary and one part oats, also whole wheat bread. Fruit should be fed regularly. Conures make only fair talkers.

Color Plate H No. 1—Red Head Conure (*Conurus rubrolarvatus*). Habitat—Western Ecuador. Size about that of the common Dove. The Red Head or Red Masked is perhaps one of the easiest to breed. They make good parents and usually bring off the entire brood.

Color Plate H No. 2—Cordilleran Conure (*Conurus frontatus*). Habitat—Peru and vicinity. Life, food and breeding habits in confinement the same as the Red Head.

Color Plate H No. 3—Nanday Conure (*Conurus nanday*). Habitat—Paraguay. Size the same as the foregoing species except the tail, which is extremely long. Aviary life the same as the Red Head.

Color Plate H No. 4—Golden Headed Conure (*Conurus auricapillus*). Habitat—Bahia. Size about the same as the Red Head. This species is becoming quite rare and is seldom seen any more. Very little is known of its breeding proclivities in confinement.

Color Plate H No. 5—Yellow Headed Conure (*Conurus jendaya*). Habitat—Brazil. About the same as the Red Head. Not a rare, but a very beautiful bird and one of the easiest to breed in captivity. It is peaceable with other Conures and seems to enjoy aviary life. It should have the same general treatment as the Red Head.

Color Plate H No. 6—Yellow Conure (*Conurus solstitialis*). Habitat—Guiana and Brazil. One of two almost all-yellow Conures, the other one being the Queen of Bavaria. These two share almost equal honors in being the most beautiful birds of the Conure family. Both are a gorgeous orange yellow blended with red and bright green. They will breed in the aviary but are not as dependable as the commoner types. Their beautiful plumage and friendly ways more than make up for all other deficiencies.

COLOR PLATE I

(Following Page 56)

Color Plate I—shows only five of some twenty beautiful Asiatic Parrakeets most all of which are quite large, some of them measuring as much as twenty inches from tip of tail to top of head. The members of this family are long slim birds of unusual grace and beauty of carriage. All have long pointed tails. Most of the species can be bred in an aviary and are unusually prolific when properly mated and housed.

Color Plate I No. 1—Alexandrine Ring Necked Parrakeet (*Psittacula eupatria*). Habitat—Ceylon. One of the prettiest of the Ring Necks, measuring seventeen inches in length. Male and female are alike except the female is without the rose colored neck ring and blue and black on the head. They have been bred freely both in America and in England.

Color Plate I No. 2—African Ring Necked Parrakeet (*Psittacula krameri*). Habitat—Africa north of the equator. Size a little smaller than the Alexandrine. Male and female are alike except that the female is without the rose and black ring around the neck. The African Ring Neck is like the Alexandrine or Indian Ring Neck except that it is a trifle smaller. The two species are often confused and even experts cannot always tell them apart.



Color Plate I No. 3—Blossom Head Parrakeet (*Psittacula rosa*). Habitat—Bengal, Burmah, Cochin China and vicinities. This attractive Parrakeet is quite rare in America, a few aviaries in California have some specimens working. Some fine youngsters have been produced but they are uncertain breeders and the local demand for them exceeds greatly the supply.

Color Plate I No. 4—Blossom Head female.

Color Plate I No. 5—Plum Head (*Psittacula cyanocephala*). Habitat—India. Size somewhat smaller than any of the foregoing species, measuring only about fourteen inches from tip of tail to beak. The Plum Head does not differ greatly from the Blossom Head. It is equally as rare in America. This is difficult to understand as they are plentiful in their native country and quite common in England. Our strict

import laws governing Parrots is undoubtedly the reason for its scarcity in this country.

Plum Heads are one of the easiest of all the Asiatic Parakeets to breed in captivity. For this reason it is hoped that in the near future the supply will be sufficient to meet the demand.

COLOR PLATE J

(Following Page 64)

The speed with which the Parrot family is returning to popularity is amazing, despite the unwarranted criticism these charming birds have had, they are rapidly gaining favor again with the public.

Quarantine regulations at the ports of entry make it difficult to get some of these birds in, but these complications are gradually being overcome and it is hoped that soon normal importations will again be arriving at regular intervals.

We are illustrating with color plates J and E two distinct family groups of the most popular Parrots, one group of the better known talking variety and the other group depicts seven of the most beautiful plumaged Parrots or Parakeets.

Color Plate J No. 1—Blue Fronted Amazon (*Amazona amazonica*). Habitat—Brazil, Paraguay and Argentina. A highly colored bird a little smaller than the Panama. He is only a fairly intelligent bird and learns to talk only with careful training. They do, however, make delightful pets and are quite easily tamed.

Color Plate J No. 2—Yellow-shouldered or Single yellow-headed Amazon (*Amazonas ochroptera*). Habitat—Venezuela and Trinidad. These birds are often imported in small lots and readily find favor among Parrot lovers. They make good talkers and are ready pupils, lovable and are a very showy bird. They are a little smaller than the Mexican Double

Yellow-head and are usually brought in in the fall as this is the season in which the young birds are available owing to the reversed seasons of the United States and South America.

Color Plate J No. 3—Mexican Double Yellow-head (*Amazona oratrix*). Habitat—Easter Mexico and Yucatan. This bird is considered by many to be the finest talker of all the parrots. He is a large showy bird about the same size as the Panama. They are remarkably intelligent birds and are easily taught to talk, whistle and sing, when taken young. They are natives of Mexico and are found in large flocks in the dense tropic woods of the east coast section. The Mexican Double Yellow-head is a magnificent bird when in full color. The entire head and neck of the adult bird is a vivid yellow, the rest of the body is green with usually a bit of bright red on the shoulder and wing tips. The best talkers are developed from young birds taken from the nest and hand raised. The natives go into the woods during the nesting season, which is from May to July, and take the young parrots from the nests just before they are able to fly. These young birds are then hand fed until they are able to care for themselves, when they are ready to sell to the importer. The young birds are raised entirely on pounded maize or yellow corn. This corn meal is mixed with water and cooked into a mush. It is then ready to feed to the youngsters, they take it from the fingers greedily and become fat and contented with it.

When the young Mexican Double Yellow-heads are first brought into the United States they are all green except a small amount of yellow on the forehead. The yellow head plumage spreads slowly and is not at its best until the bird is about five years old. You can always tell the age of a Mexican Double Yellow-head by the amount of yellow on the head. The only time that really young birds can be obtained is July, August and September. They are at their best during these months and are easily taught to talk and sing.

Color Plate J No. 4—Panama Parrot (*Amazona auropalliatata*). Habitat—Western Central America. The Panama Parrot is a handsome green bird with usually a small patch of yellow at the nape of the neck. The Panama is about on a par with the Mexican Double Yellow-head in intelligence. In imitating the human voice he excels all other Parrots. His words are soft and modulated, and an exact copy of his human teacher. The Panama is a large bird about the same size as the Mexican Double Yellow-head. These birds are also taken from the nest when young and hand raised by natives for the American market, but their native land being farther away they do not arrive in the United States as young and susceptible to teaching as do the Mexican Double Yellow-heads.

Color Plate J No. 5—Mexican Red Head Parrot. Habitat—Western Mexico. This bird is probably the least rare of all the talking Parrots. He is a native of Western Mexico, where they are seen in large flocks, being gregarious in character. In size the Red Head is rather small, about two-thirds the size of the Mexican Double Yellow-head. His plumage is attractive, being a contrast in reds and greens. The red cap on the head, however, does not become as large as the yellow on the yellow-head species. Their talking vocabulary is limited, although some very remarkable talkers have been developed from the Red Heads. They seem to excel in ability to whistle and become fine pets when properly handled. They are not as popular as the Yellow-head and Panama and sell for probably a third less in price.

Color Plate J No. 6—Spectacled Amazon (*Amazona alifrons*.) Habitat—Western Mexico, Yucatan, Guatemala, Nicaragua and Costa Rica. This is a small bird measuring only about 10½ inches in length. They make fairly good talkers when taken young but the difficulty in the United States is

to obtain young specimens, for this reason they are seldom brought in. There are so many others more desirable that the importers seldom waste time on this beautiful little Parrot.

All of the Parrots shown in color plate J can be bred in captivity when allowed a large outdoor flight with a suitable nesting house adjoining. For a nesting place they should have several large decayed logs standing upright with hollowed-out places and holes started as an entrance to the nest. The birds will soon enlarge the hole and arrange the interior of the log to suit themselves. It goes without saying that Parrots must be kept at a moderate temperature if expected to produce young. For this reason few people are successful in raising Parrots in the colder sections of the United States. From a financial standpoint no one should attempt to breed Parrots in captivity as the imported specimens can always be bought for a fraction of what it costs to produce them in an aviary.

Seasoned aviculturists are raising them for pleasure in all parts of America, England, France and Germany, but not for profit.

The food for all birds shown in color plate J is about the same, consisting principally of Sunflower and Canary seed, fruit, etc.





Color Plate L

Upper — White Shell Parakeets

Lower — Mauve Shell Parakeets



PART 3

CANARIES

Their Care and Breeding





*"They Join in a Concert of Gladness and Glee
The Music is Rich and the Tickets are Free"*

CANARIES

THEIR CARE AND BREEDING

By M. L. and FLORA FLOWERS

Written at
BIRD HAVEN
Reseda, California

DEDICATED
TO ALL LOVERS OF
THE BEAUTIFUL
CANARY

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CANARIES

THEIR CARE AND BREEDING

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PREFACE

Much literature has been thrust upon the bird loving public during the past decade that has pictured the care and breeding of the lovely canary as a complicated and somewhat mysterious task. Such widespread misinformation, most of which is of foreign extraction has served to throw a damper on the hobby and has especially been discouraging to the novice breeder, and has acted as a retardant to the would-be canary buyer, who wants only a song bird in a cage for the home.

The object of this book is to discuss frankly and simply the many phases of this fascinating hobby and to place the facts before the reader in simple, understandable language so that the beginner or experienced breeder may profit in some degree from having read this treatise.

The knowledge expressed in the book has been gained through many years of experience in breeding all types of canaries and also from much research work.

We have called on every possible resource available in order to make the book not only authentic, but also interesting enough to warrant its being read and enjoyed by both the beginner and the experienced breeder.

Most of all we want the reader to know that the keeping of a single canary in a cage for song or the keeping of several pairs for breeding is not a difficult task, nor is there any mysticism connected with it. Anyone may enjoy the song and beauty of this charming bird if he is willing to devote only a small amount of time to its care in keeping the bird happy and contented.

THE ORIGIN OF THE CANARY

No Household Pet Has Had a More Colorful History

We believe a brief history of the bird, which lacking a better name, we call the canary, is important to acquaint the reader with the background of this wonderful little songster.

The original wild canary, the bird from which our domesticated canary was propagated, is a small gray-green bird with yellow patches on the body. The male is a fair singer in the wild state but of course does not compare with the canary as we know it today. Canaries are natives of the Canary and Madeira Islands, two small groups of islands just off the west coast of Africa. These islands are about the same latitude as the state of Florida, hence canaries were originally a semi-tropical bird.

The first record we have of the canary as a domesticated cage bird was in the latter part of the 16th century. It seems that a trading ship bound for Italy took on a cargo of the original wild birds at the Canary Islands. Owing to shipwreck the entire shipment was released near the Isle of Elba just west of Italy. The birds made their way to this little island where they made themselves thoroughly at home. Shortly after this we hear of them being confined in cages in Italy, where they were greatly esteemed as "song birds." From Italy they found their way rapidly into other European countries, especially Germany and England.

In the early part of the 17th century we read that they were popular in England and were being successfully crossed with native British song birds. In Germany they were being raised in cages and being crossed with the German Linnets and Siskins until practically all of the original traits of the little Canary Island bird had disappeared and in its stead was a beautiful mottled songster. In the early part of the 18th century we find that there were over twenty-five varieties of

canaries being bred in England, including most of the popular varieties known today. It is difficult to say what country has contributed most in the production of the beautiful canaries as we now know them. Many contributing factors are responsible for much of the improvement. For one thing the climate of England and Germany had a great deal to do with the production of stamina in the birds' makeup. Crossing with the wild birds native to these countries contributed greatly to size as well as song possibilities. To the German breeders undoubtedly should go most of the credit for the beauty of song quality, while to the English breeder should go the credit for size and also the propagation of new varieties and new colors.

It has only been during the last forty years that canary breeding has been taken seriously in the United States. Prior to that time we seemed to have been satisfied with the imported birds and very little interest was manifested in breeding them. But, true to form, when Americans did become interested in canaries as a hobby they "went after it with a vengeance." Consequently today some of the finest canaries in the world are raised in the United States. Other countries also have taken up the hobby until today there is practically no civilized country on earth that does not enjoy the modern canary as a song bird.

Practically every town, city and hamlet has its canary society where breeders gather together regularly and discuss the various points that go to make up the perfect canary. Shows are held annually and ribbons and prizes are awarded to those meritorious breeders with birds nearest to the standard of perfection adopted by the society. America has thousands of such clubs, many of which are devoted to the breeding of only one type of bird such as the Norwich, Yorkshire Roller, etc. Numerous shows or exhibits are held each year where competent judges award prizes to the birds with the greatest number of good points.

Yes, the canary has indeed developed into the aristocrat of the bird world and has come a long way from the little wild Siskin off the shores of Africa to the handsome golden songster of today. His development has taken over three hundred years, but he is well worth all the effort expended and we bow our heads in honor of those hardy pioneers, who have played such a large part in giving us this marvelous bird.

No bird responds so readily to kind treatment as does the canary. He is a remarkably intelligent bird, and seems to know when he is being treated kindly and shows his appreciation in song, expressing complete happiness.

A single songster in a cage is a beautiful ornament to any room, his song floods the room with good cheer and happiness. Even on dark, gloomy days he can be counted upon to pour forth his cheerful song, apparently in an effort to cheer and brighten the lives of those around him. A good singing canary has been known to almost work miracles in promoting the recovery of the sick. He is the favorite gift to invalids and shut-ins and well may he be, for his marvelous optimism and bright disposition impart new hopes and desires in the heart of the patient, sick and depressed.

Canaries not only have fine notes of their own, but are possessed of excellent memories, they repeat musical sounds which they hear with ease and precision. Among the novelties exhibited at the bird shows in London in 1939 was a canary which is said to articulate words as distinctly as a parrot. The manner of training them to imitate instruments, or the whistling of tunes is thus described by Dr. Bechstein, a German aviculturist of the 18th century: "No sooner have the young canaries reached the 13th or 14th day, than they begin to warble, and these pretty birds are so docile as to neglect entirely their natural song and imitate the harmony of our instruments. It is necessary immediately to separate from his companions and from other birds, the young one which is to be instructed, by putting him aside in a cage.

which is at first covered with a piece of linen and afterwards with a darker cover.

"The air which is to be taught should be performed five or six times a day, especially in the evening and morning, either by whistling or on a flageolet or bird-organ. He will acquire it more or less readily in from two to six months according to his abilities and memory. If his separation from other birds is delayed beyond the fourteenth day, he will retain some part of his father's song, which he will always intermingle with his acquired air, and consequently never perform it perfectly."

There is nothing in the above article by Dr. Bechstein of any particular educational value, except to point out the fact that we, with all our modern progressiveness, are not any better today at perfecting the song of the canary than canary fanciers were two hundred years ago.

SEXING CANARIES

A Difficult Task at Certain Periods

Sexing canaries is one of the difficult problems with which the beginner has to contend, and as a rule it must be left largely up to the one from whom the birds are purchased. I have known breeders and dealers alike to make some very grave mistakes concerning this most important matter. When purchasing your breeding stock a very good plan is to see that the male bird is marked as such with a leg band, and get a slip stating that the bird is a male, or a female, whichever the case may be, and if it turns out that the dealer has made a mistake in sexing the bird, he will gladly rectify it.

It is easy enough to sex adult birds as they near the breeding season by examining the vent. At this time the vent of the male is very pronounced, protruding outward and downward, while the vent of the female is swollen and rounded almost to a level with the abdomen. It must be remembered,

however, that these conditions only maintain during the breeding season.

All young canaries, both male and female look alike to the novice. If there is any difference in their appearance it is usually so little that it is not discernible. The surest way to select a male is to hear him sing. Occasionally a singing female is found in a group but these birds do not usually amount to very much as breeders, and should not be used for breeding purposes except when one is short of better females.

The sexing of young birds before the first moult is still more difficult for the beginner. However, if one watches the young when they are about five weeks old, the males will be seen to swell up their throats in an effort to sing, but even then there may be some in the lot that are a bit backward and will not attempt to sing until they are much older. For this reason it is not wise to sell them until after the first moult because in the lot that are set aside as females there may be found some very good singers.

MATING FOR BEST RESULTS

Important Points One Should Know When Breeding for Color

The thought that first comes to the mind of the average beginner is, "How can I raise birds most of which will have that lovely deep yellow plumage so much admired by everyone?" But there are certain fundamental principles involved in producing birds of a rich golden yellow color. In the first place one should never pair up birds to obtain any special characteristics in the young until he has studied carefully the rules to be followed if one is to obtain certain definite characteristics. For some unknown reason the young bred from mating two deep yellow birds are almost always small and are generally poor singers. The temptation to mate two deep yellows is very strong but experienced breeders have learned from bitter disappointments that this procedure does

not give them the birds that are desired. I have seen many birds from such matings, beautiful in color, but with scrawny, ragged plumage. The tail and flight feathers are usually ragged and split around the edges, and the birds themselves are not up to standard in size. Altogether they are a disreputable looking lot. The first generation produced from two deep yellows is not so bad, but each succeeding generation grows worse. I believe that if this double yellow mating should be continued down through many generations the birds would finally be unable to produce any feathers at all.

Almost every beginner wishes to produce rich yellow youngsters, but mating for color only is not always the most satisfactory course to pursue, since in most cases it is impossible for the novice to procure the right breeding stock for such results unless he gets it from one who knows the bird's ancestry. One of the yellow parents might have had a dark or spotted father or mother, in which case there is apt to be at least one spotted youngster in the nest. Mating two buffes (light yellows) is equally disastrous. Double buffing will produce birds of full feather but the feathers will be loose and untidy. This is why we often see large, pale or faded looking specimens which look as if they had not moulted properly.

The correct mating is deep yellow to light yellow. The nest will not be full of deep yellow birds, but part of them will be deep yellow, and part of them will be light yellow but all of them will be beautiful birds of good size and plumage.

A good pairing is a light yellow female and a spotted or variegated male, but the yellow on the male should be a deep rich color, not a pale, sickly washed-out shade. The green or dark feathers sometimes shade into brownish black, but the general color should be more yellow than green. Whether or not the male parent is evenly marked makes no difference in the color markings of the young, unless his ancestors and the ancestors of the female carried the same markings.

If the sexes in such a pairing are reversed as to color the results will be about equally satisfactory. The deep, rich coloring may not be quite as pronounced in the offspring as it would have been if the father had been the darker bird, but the difference will be so slight that it can only be detected by comparing the young with young from the opposite mating.

Never mate two birds with the same faults or qualities that might not be desirable. For instance, if a bird with an ugly shaped head is mated to another with an ugly shaped head, it is natural that the offspring of such a mating should inherit the same undesirable ugly shaped heads. Of course there is always the possibility that the generation immediately back of one or both parents might have had good, well-formed heads in which case these qualities would be modified, there might even be one bird in the nest with a perfect head, but the chances are the entire brood will be unsatisfactory in form.

There is really no trick in correctly pairing birds if one has had experience in breeding. If a record has been kept of the breeding operations of the last breeding season, one knows the results of certain previous matings that were unprofitable and can avoid such matings in the future.

Often a pair of birds will fight if put together before they are ready to mate. If this fighting continues it may be necessary to separate them, in which case one of the birds should be left in the breeding cage and the other put into a small cage and placed near the breeding cage until they are better acquainted, and become friendly with each other.

When the female begins to nervously flap her wings as if she wants to fly, and the male seems to be trying to get to her through the bars of his cage they may be safely put together again.

After they have been together two or three days give them a nest. When they appear to be interested in it give them nesting material and they will begin building their nest which

is usually completed in three or four days. In another day or two the first egg should be laid.

Some breeders remove the eggs from the nest as they are laid, leaving an artificial egg in the nest until the female begins to sit steadily then all the eggs are returned to the nest at the same time. When this system is used all the eggs will hatch on the thirteenth day. Thirteen days is the normal incubation period.

BREEDING

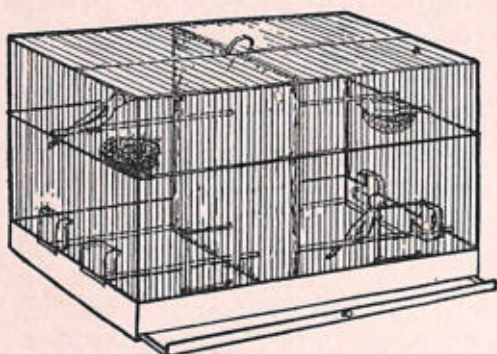
When one takes up canary breeding it is well to begin with the study of proper housing conditions. One must decide whether cages or out-of-door aviaries are to be used and plan from the very beginning for the comfort of the birds. Whether one wishes to keep a large number of birds in an outside aviary or even one pair in a cage, it is not at all necessary to invest a large amount of money in expensive equipment. In fact much pleasure is derived from planning and building one's own aviary or breeding cage, but the main thing to remember is to plan for the birds' comfort and convenience.

There are many ways of breeding canaries but we will only discuss the two most popular methods, one is out of doors in an aviary, the other, which is the most satisfactory way and the one employed by the most successful breeders, cage breeding.

The first named system is very simple and eliminates a great deal of work but the results are not as satisfactory. However, if one is only desirous of having a pretty aviary full of singing canaries and females that will raise a few youngsters each year, the outdoor aviary is all that can be desired.

All that is needed in the aviary is a nice, quiet retreat where the hens can build their nests, lay their eggs, hatch them and raise their babies while the males go singing along. But cage breeding is more satisfactory for the breeder who

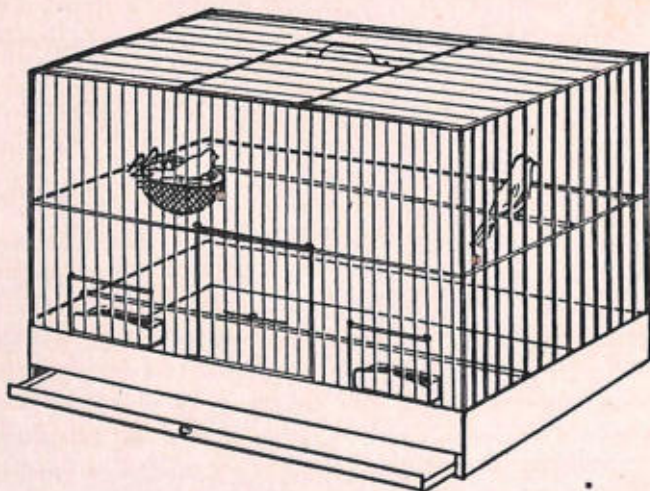
wishes to produce the maximum number of young from a single pair of birds as well as those who go in for fine singers, so we will proceed with this idea in mind. Breeding cages



Double Breeding Cage

can, with very little expense be made at home by some member of the family who is handy with the saw and hammer. (See pages 32-33-34 and 35.) The greatest objection to the home-made cage is its capacity for harboring mites. Most people who build

their own equipment have a tendency to put on a few curly-cues which are perfect sanctuaries for these pests. However a good home-made breeding cage is made of wood on all



Single Breeding Cage

sides but one, with wooden top and bottom. The front is made of wire bars and can be made by any tin-shop at a very small cost. If this is not convenient, the handy man can buy a piece of hardware cloth the required size, $\frac{1}{2}$ inch mesh, and fit it securely on a frame made of thin, narrow strips of wood. The location of the openings for the doors, seed and water cups, can be figured out to the best advantage by the builder. The wire front should be made one and a half to three-quarters of an inch shorter than the opening, leaving a space at the bottom of the cage wide enough to permit the passage of the tin tray or drawer that slides in on the floor of the cage. The drawer should be turned up a half inch on the back and sides, but the front of the drawer should turn up high enough to extend a trifle above the bottom of the wire front. All rough edges of wood should be planed smooth and all joints fitted snugly.



Outside
(Cage)
Nest

All breeding equipment, nests, perches, etc., must be made firm. Wobbly perches are responsible for many nests of infertile eggs. A nest insecurely fastened to the cage may fall and cause the loss of a whole nest of eggs or young birds. At the same time, nests and perches must be removable to allow for cleaning.



Open Seed Cup

Three or four perches are sufficient for comfort and exercise. One perch should be close enough to the nest to permit the birds to hop easily onto the rim of the nest without disturbing it. One perch should be in front of the seed and water cups about one and one-half, or two inches from the cups on a level with the contents of the cups. If this perch is too high the birds have to bend too low to reach food and water. Seed and water cups should be on the inside of breeding cages, but they should be of the covered type to prevent droppings falling into them.

If the breeding cage is all wire, that is, open on all sides, a cloth should be fastened to three sides and on top. This furnishes seclusion for the birds and keeps them from drafts.

Some fanciers object to painting the cage, fearing the birds might eat the paint. I have always painted my cages and to my knowledge I have never lost a bird from eating paint. Paint helps to fill in the open pores of the wood and the small cracks that are otherwise impossible to make mite proof. A good color for the interior of the cage is a grey-blue or silver grey. These colors may not be what every one would choose but they do not show dirt and stain from droppings as do some of the brighter colors.

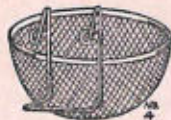


Closed Seed
Cup

If one is desirous of breeding two females to one male, or two pairs of birds, the cage described above can be made twice as long as the single cage. The equipment for the double breeding cage will be the same as for two single cages, except two nests must be supplied.

There are many different kinds of breeding cages on the market, some are really good and some are built simply to sell with no thought for the comfort of the birds. An all metal cage is the most sanitary and easier to keep free from mites and germs.

Reconditioned or "second-hand" equipment should never be used unless it is known to be free from disease germs. Germs are invisible to the naked eye, a second hand cage may look innocent enough but the chances are ten to one that these little unseen disease bearers are hidden away in some part of it. This very situation has caused many would-be fanciers to give up this most fascinating hobby before they are even started in it. It is most distressing to be losing birds one after another from no apparent cause. Finally the novice gives up in despair, feeling that he is just plain "unlucky" never



Open Nest
Receptacle



Buff Norwich
Cular Fed Yorkshire

White Roller
Yellow Yorkshire

Yellow Warbler
Mottled White Dutch Frill

having known what the trouble was. The safest course to pursue is to buy new cages or build new ones.

Now for the nests, a metal nest is easy to clean and can be used over and over again. They can be purchased from any bird or pet shop. For those who find it inconvenient to procure the metal, or wire nests, the regulation size strawberry basket is very satisfactory and can be thrown away and replaced by another after each brood has been brought off. Nests of wire cloth can be bought at pet shops. Wire strainers, that all hardware or ten cent stores carry, can be converted into nests by removing the handle. The nest should hang about half way between the floor and the top of the cage. Parent birds will only feed their young when they lift up their heads, open their mouths and beg for food. Each day finds their necks have grown a little longer, until finally, if the nest is too close to the top of the cage, the parents cannot feed them as this can only be done when they can stand on the edge of the nest with their heads above the heads of the open-mouthed youngsters.

If one intends breeding canaries for the market, it will naturally be done on a large scale. In order to make a success of the venture, one must start right. This holds good with all live stock. If conditions are right success is sure to follow.

A room away from the family domicile is better than a room where the family congregates or are continually going in and out. Wherever the room is to be, or whatever the size, it must be well ventilated without being drafty and well lighted without being glaring. A well ventilated room is not necessarily a drafty one. A room with a southern exposure so the sun can brighten it up in cold weather is preferable to a room with a northern exposure.

The walls should by all means be painted with a good, washable oil paint of a light, soft color. Pale grey is very good. Some may prefer a more colorful room, but whatever color is used it should be chosen with the idea in mind of

producing a pleasing quiet effect upon the occupants of the room.

In some sections where the winters are very cold, it becomes necessary to install some means of artificially warming the room. Electricity is always a good, clean means of heating and one never has to worry about poisonous fumes but in some sections it is often very expensive. The little gas and oil heaters are not usually desirable because they burn up much of the oxygen in the room. The most satisfactory method of heating is a gas radiator in which the burner is entirely enclosed, with a pipe like the regular wood-burner stovepipe leading to a vent in the ceiling or the side wall. This arrangement will take the fumes out without allowing any to escape into the room.

On pages 32, 33, 34 and 35 are shown drawings of both indoor and outdoor aviaries. They may be built as elaborate as one wishes to build them, but the thought to carry out in the construction of any building is the comfort of the tenant. Seed pans and drinking cups should be placed in the most conspicuous places to make sure the birds can easily locate them.

Have the cage or aviary ready when the birds arrive, perches in place, seed cups filled with seeds and water cups filled with water. It is well to supply the new arrivals with distilled or boiled water, thus eliminating any chance of diarrhea that might be caused by the change in drinking water. Give the boiled water for a day or two and then gradually add the normal water until the birds are accustomed to it. If they are to be bred indoors, have the bottom of the cage covered with clean newspaper. Place the seeds and grit in open dishes on the floor where they may easily be found.

Remember that grit is the birds' teeth and without it they cannot masticate their food. It is also a good idea to keep grit on the floor of the cage, as it helps to keep their feet clean. A piece of cuttlebone also should be securely fastened to the side of the cage.

TO REMOVE THE MALE OR NOT

A Question That Experience Alone Can Decide

Whether or not to remove the male from the cage while the female is incubating the eggs is a matter of much discussion. Some breeders say it is the thing to do, others say it is not.

In case of single breeding, that is breeding the male to only one female, it is better to leave him in the cage with her. If he is not inclined to annoy her, he will help raise the family, which every normal father wishes to do.

When the father is allowed to assist with the rearing of the young, half of the burden is taken off the mother. But when the young are out of the nest they must be watched, as one never knows the disposition of the father until he has been tried out by raising a family. Some parents, even the mother, will begin picking the feathers of the babies and using them to build their next nest. Oftentimes the adding of new nesting material will prevent any further trouble of this kind.

If it is decided to take the male away and leave the female to incubate the eggs alone, it must be done early during the sitting period or she may resent having her mate taken away from her at the time she needs his support most as the father of the family.

But do not take him out of the breeding cage until the third or fourth egg is laid or the last egg may not be fertile. As a rule she will continue to sit on her eggs, hatch her babies and raise them without any assistance from him.

One argument in favor of taking the male away from the sitting female is that he may be put in a song cage and one can have the pleasure of listening to him sing, whereas a male left in the cage with a female does not sing as freely as when



Sanitary Drinking
Fountain

he is in a cage alone. In fact some males do not sing at all when they are with their mates.

NEGLECTFUL PARENTS

When parents neglect to feed their young, it is usually because both parents are young birds. For this reason we cannot stress too strongly the desirability of having one or the other of the parents at least two years old, preferably the female.

If the male is younger than the female, the chances for producing a large number of males are greater. Some young females make perfectly good mothers. Some young males make good fathers, but it is not always easy to get a pair of birds that make good parents the first year. Therefore, it is better if one of them has had previous experience in raising a family.

Young canary mothers are much like young mothers in all walks of life. Some of them were born to be mothers and to them, being a mother is quite natural. Others will have their babies, love them desperately but know very little about caring for them properly.

Young birds that are nesting for the first time should be disturbed as little as possible. Some resent having their nest looked into. If the young mother feels that anyone is trying to molest her babies, she will sit on the nest continuously and will not even come off to eat, the male will bring her food to her. This often happens in cases where the male has been left in the cage with the female. Take him away and force the female to come off to eat, when she returns to the nest, if everything is quiet she is very apt to feed her youngsters. When she finds that she must get to work or starve, she seems to realize that she must also feed the babies. If she once gets started at it, you can usually depend upon her to rear her brood properly.

FEEDING THE YOUNG

There is no better nestling food than the regulation egg food for young canaries. This is made by boiling a fresh egg from twenty to thirty minutes. Eggs boiled less than twenty minutes are tough and indigestible. Mash the whole egg thoroughly and add two tablespoonsful of cracker crumbs to each egg. If the mixture is too dry, add a teaspoonful of water. One may have equally good results by using regular commercial nestling food instead of the cracker crumbs to mix with the egg. Do not have the cracker crumbs too wet as a sloppy mixture will cause loose droppings, which is apt to develop into diarrhea and will at least cause a dirty nest and cage. There are some very good prepared nestling foods on the market, but the best of them is better if mixed with boiled egg.

This nestling or egg food should be given every day, beginning the day the babies are due to hatch. Do not feed it in large quantities. It is better to give it in small quantities three times a day, than to put a large helping in the cage in the morning and let it remain all day. Keep fresh, clean seeds in the cage at all times. Some breeders sprinkle a little poppy or maw seed on the nestling food. This seed is very stimulating and should be used sparingly. If the youngsters are doing well, they should not have it at all.

Those who are breeding from only one pair of birds will find that the amount of mixture made from one egg is far too much food for one day's feeding, but it will last for two to three days if kept in the refrigerator.

Milk sop is often fed every second day (crackers soaked in milk). A leaf of lettuce or other delectable greens should be given once each day, but it must be washed clean and dried, as some lettuce has been sprayed with an insecticide and birds should not be allowed to eat it unless it has been washed. I strongly advise feeding lettuce because all canaries

like it. Some parent birds that are poor feeders will perk up when given lettuce and raise their babies almost entirely on a diet composed largely of lettuce and the egg food recommended above.

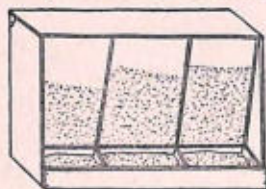
WHEN TO REMOVE THE YOUNG

A Critical Time for Canary Breeders

Young birds are old enough to be taken away from their parents when they are about five or six weeks old. The same nestling food they have been raised on should be fed them along with their regular seeds. Mixing a little plain rape seeds with the egg food will make it easier for them to get used to seeds, at the same time a dish of the regular canary seed mixture must be kept before them. When they are seen eating hard seeds begin to gradually lessen the amount of nestling food until they are on an all seed diet.

Right here a little watchful care must be resorted to. There may be one or two little fellows that are not eating as well as they should, or there may be one among the lot more aggressive and may fight the others, keeping them away from the seed pan, in which case the weaker ones must be taken away, put into a cage by themselves and given a little soft food or cracked oats. But remember, the regular canary seed mixture must be kept before

them the same as before. A dish of soaked rape seeds should be given all young birds twice a week. This gives them extra nourishment. Most young birds will not eat enough dry seeds, apparently from lack of strength to crack enough of them. A small piece of lettuce or other greens as recommended elsewhere in this book, should be given every other day. A piece of sweet apple may be given occasionally but under no circumstances should tart apples be given, better



Aviary
Seed Hopper

no apple at all than tart or acid ones, as acids are injurious.

A small bit of milk sop with a few poppy seeds sprinkled on it may be given once a week but not on the days the apple is fed, as both are laxative. When all the youngsters have eaten all they want, remove the greens or soft foods, as they may become sour and if eaten might cause intestinal trouble. This soft feeding should not be kept up any longer than is absolutely necessary. If the youngsters are to develop into strong, hardy birds, they must be gotten on to an all seed diet as soon as possible. A soft diet will make flabby-bodied birds. The perfect bird must have a good, firm body and the only way to produce such bodies is on good, sound seeds. Especially is it necessary to feed birds a simple seed diet where one is raising them to sell to the pet shops, as dealers want only birds that are weaned from all soft foods and well onto a seed diet. There is often a large mortality loss in canaries to the dealer when they begin to come in in the fall. This condition will always exist as long as breeders continue to feed their birds an unbalanced diet of soft foods and table treats.

THE LAST NEST

The end of the breeding season is a critical period for parent birds. The beginner is prone to allow his birds to continue breeding as late in the season as they wish to nest. I know it is hard to forego the thrill of watching more youngsters grow into beautiful birds. Especially is this true if the parents continue to be lively and strong. If they were paired up reasonably early they should have three nests of hale and hardy youngsters by the first of July. In some cases a clutch of eggs might have proven to be a disappointment, there may not be as many babies as one thinks he should have had and feels that surely one more nest would do no harm. But remember, the moulting season is close at hand and the birds should have a resting period in which to build up their depleted systems before entering into the moult. Moulting is

a perfectly normal function of the body in all birds and is nothing to fear if the birds are in a normal physical condition when the moulting season begins.

Beginners find it very hard to refrain from continually peeping into the first nest and enthusiastically allowing all the visitors to take a peek, which is in all probability responsible for the loss of many a first nest. This loss should be about all it would take to convince the novice that his birds should have privacy, especially if he is to raise the coveted three nests in a season.

There are many lessons that one must learn from personal experience, and allowing breeding pairs to have privacy while nesting is one of them. One may read all the books one can digest on raising birds, but it takes practical experience along with a few disappointments to develop a successful bird breeder. It is however better to arrive at the end of the first season with a few youngsters sturdily built, than the three nests, if the three nests must be of poor quality, and to have strong, healthy parent birds that have not been drained of their vitality by overbreeding. The next breeding season will find these parents in excellent condition. This fact, coupled with the lessons learned from the previous breeding season should enable the breeder to produce good results.

If removing the male bird from the breeding cage and leaving the female to hatch and rear her babies alone has been the practice, it is a good idea to leave the last nest of babies with the mother a few days longer. Always toward the end of the season the hen may become a little lax in feeding. If this should be the case the youngsters may be a bit backward in feeding themselves, and may not be able to get along without the few supplementary feedings their mother offers.

FEATHER PICKING

Feather picking is a most distressing complaint for the beginner to contend with. Unless he has had previous experi-



WHITE CANARY



NORWICH CANARY

ence or has learned from some other source what to do, he is liable to lose some beautiful youngsters. This condition will be noticed first by the parents picking the feathers from their young to use in building their next nest.

At the very first sign of feather picking, which usually occurs when the babies are about three weeks old, the parents should be given a new nest and plenty of building material. This will save the young from being picked bald by their ambitious parents. But even these precautions do not always suffice. They should be watched to see if they are satisfied with the new nest and building material. If they are not they will continue to pick feathers from the babies.

In such cases the young should be placed in a small cage which should be fastened to the outside of the breeding cage. The floor of the small cage containing the young should be level with the floor of the cage that houses the parent birds. The parents will feed the youngsters through the bars and at the same time will go ahead with the preparations for the next nest.

Sometimes the parents will not feed from the floor of the cage. In such cases, the small or nursery cage will have to be attached to the breeding cage in another location, maybe at the end of a perch. This will have to be worked out to suit the individual dispositions of the birds in question.

Often this feather picking habit, if not taken in hand early, will result in a fixed habit and the female may continue this savagery on the male after the young are removed.

STAMINA

You Cannot Expect to Breed Strong Youngsters with Inferior Parent Stock

What is stamina? It is that power of endurance that all bird life must have if it is to live and thrive in a world where it is to spend its life contentedly in confinement.

We know that flowers and plants raised indoors cannot

compete in health and vigor with field grown specimens of the same variety. I asked a florist why I could not grow plants in my garden as beautiful as those in his hot house and he replied, "Oh, it can't be done. A flower in a greenhouse will grow larger, but put it out of doors where it will have to battle with the elements and you will see that all the petting and pampering it received will be of no avail, because it lacks stamina."

We know that for stamina the canary of today cannot be compared with the little wild bird from which it originated. We have evolved some very beautiful birds, both in size and color, from the wild canary, but we have not improved or even maintained the original stamina in our birds which was natural in their wild progenitors. Witness the rise and fall of the enormous Belgian Canary, also the struggle to bring him back to his past glory.

We buy a canary because he is a good singer. We put him in a cage where he is to remain the rest of his life. We see to it that he is never without food or water. He does not even have to fly one inch to reach either of them, only a slight hop. Probably he has not spread his wings for years. But my, how he can sing! Yes, he can sing. Particular attention has been given to that through the breeding of his ancestors for song. But what about stamina? Has he any power of resistance? Could he hold his own in any emergency that would require endurance?

We should devote as much care to developing the health and vitality of our birds, and work as hard to build up their stamina as we do to develop the song of the roller and the warbler, or the immense size and length of some of our type varieties. Sunshine, exercise and fresh air are the three important factors in building and maintaining this vital requisite.

Egg-binding is another symptom indicative of lowered stamina. This excruciatingly painful and in most cases unnecessary condition often arises in bird rooms where no considera-

tion has been given to anything but mass production, where birds mean no more to their owners than the few dollars and cents that can be made with them.

Then there is the everlasting trading for new blood, a habit that is indiscriminately indulged in by so many fanciers. A fellow breeder said to me, "My birds did not do so well this year. Never before have I had so much trouble making my hens feed their young, and I have had so many clear eggs. Before next season, I am going to trade off all my females and get new blood in my stock. A neighbor has some of the nicest birds I ever saw. I think she will trade me six of her young females for six of mine."

In this case, the first breeder will, by trading her poor weak stock for better birds, give her stock a temporary boost. But the neighbor who receives these inferior females will be lowering the vitality of her strain and so on it goes until all the breeders in a given locality have indiscreetly traded and exchanged birds among themselves, until there are really no unrelated birds in the lot. The better way for the breeder who is producing mediocre birds, is to get rid of them and buy outright from someone who has good dependable stock, then strive to maintain a high standard of quality and mate only vigorous birds of known lineage.

MOULTING

Moulting is not a disease and should not be treated as such. Therefore, it will not be discussed in the chapter on diseases.

This natural cleaning up time or shedding of feathers in the lives of birds is often referred to as the "moulting season" and usually takes place in the late summer, July and August. In the southern states where the nights are warm, they often begin moulting earlier and finish up earlier, whereas in California, where the nights are cool, the season for casting off the old plumage often covers a longer period of time. In any



Bird
Bath Tub

case they should be well over it by the middle or latter part of September. A healthy bird in an average climate should go through the moult in about six weeks. If a bird is not completely over the moult at the end of three months, he is out of condition. An investigation as to the cause of this continuous moult should be gotten under way at once. It may be discovered that such a small thing as constantly moving the cage from a warm room to one of a lower temperature during a time the bird should be kept undisturbed as much as possible, is the cause of all the trouble.

An early moult is always desirable, but whether early or late, it should not exceed two months. As stated above, moulting is not a disease. However, it is a season of general letting down. For this reason all birds should be well past the breeding season by the beginning of July. At this time they should be put in a large flight pen or aviary that is protected from draughts, where they can rest, exercise, and recuperate from the strenuous task of breeding.

Young birds should be given the same privileges. They should go through their first moult in a large, well ventilated, no draught flight pen where they can bathe and dry themselves in the warm sunshine. Young birds that moult under these conditions develop into strong, hardy youngsters, ready for whatever the future might have in store for them. It is unnecessary to suggest that the aviary must be kept clean at all times, especially during the moulting season when birds are forever picking around for something different to eat.

When open dishes are used for seeds, they should be cleaned every day and fresh seeds given. Except in the case of color feeding, fresh, clean seeds and greens, such as watercress, spinach or lettuce are quite sufficient to carry them through unless they are run down from strenuous breeding. In which case a small dish of the regular hard boiled egg nestling food

may be given twice a week. A small piece of sweet orange or apple is good as a treat occasionally and of course cuttle-bone and plenty of good, clean, sharp grit.

Moulting for the household singer is another thing. In this case the singer in the cage has not been through the strain of a breeding season, but has gone singing merrily along throughout the year. For him, moulting is not much of an ordeal. The principal thing is to keep him out of draughts and not to be continuously moving him from a warm room into one that is chilly. He should be given a chance to bathe every other day and allowed to dry himself in the sun. The cage should be partially covered with a towel so that there will be sufficient shade for him when he wishes to get out of the sun. It would take a very robust canary to live through a half hour of hot sun with no shade available for him. Keeping a bird in the sun too long or in a room that is too hot, is apt to cause him to moult at any time of the year. This malady is called "premature moult."

DIET

Nothing Is More Essential for the Health of Your Birds Than Diet

Keeping a canary in good condition and song, is a very simple matter, but there are a few essential requirements to consider and the most important of all is diet.

First he must be fed properly if he is to remain healthy and in good song. Always remember that the canary is a seed-eating bird. In the wild state birds forage for their food, consequently they have quite a varied diet of sorts of seeds and grasses. The natural state of the canary today is in a cage or aviary where he is entirely dependent upon his owner for food, which should by all means be of the best quality.



Single
Seed Hopper

The correct diet for canaries is a mixture of plain canary-seed and sweet rape which must be kept before them at all times as their staple diet. The proportions of rape or canary seed depend upon the amount of each seed the canaries eat. Rollers seem to eat more rape than canary, in fact roller breeders encourage the feeding of more rape than plain canary seed.



Nestling Food
Cup

A few hulled oats and seedling grasses may be added but be sure that these wild grass seeds are mature, otherwise, unless the bird has gradually become accustomed to eating the unripe seeds, he may develop diarrhea.

Cracked oats should be fed sparingly. I only feed this fattening seed when parent birds are a bit slow in feeding their young, then I feed it crushed so that the birds can more readily eat it. Sometimes in very cold weather I will give my birds two or three seeds per bird about twice a week. Young birds that have recently been taken away from their parents may be fed a small amount, say a grain or two each day, but they should be gotten off of it as quickly as possible, otherwise they will become so fat that they will not come into song until they have been reduced in weight.

The canary in a cage should be fed a small portion of green vitamin food every day, and by green food I mean just that.



Cuttle Bone
Holder

Not lettuce or celery that has had all the vitamins and minerals bleached out of it. Vegetables that are of the darkest green color, such as green lettuce, celery, cabbage, spinach, dandelion and water cress contain the largest amount of these vital elements. Parsley is the only one of the green vegetables that I do not feed. Never feed a canary delicacies from the table such as cake or other sweets. There is no surer way of ruining a bird's song and making him ill than feeding him what some people commonly call "treats."

The temptation is to be forever trying to feed something different to the bird "just for a change." Such misguided generosity will surely ruin his digestive organs, not only will he become fat and stupid but he will soon cease to sing. The best singers are the slim shaped birds that are carefully fed on a diet as outlined above.



One should use great care in selecting bird seeds. It costs so little to feed a canary correctly that it is a crime to feed him cheap, trashy seeds which cost only a few cents less than the best grades. The penny saved by using cheap seeds is nothing compared to the reward in song obtained from your bird when he is fed on plump, fresh seeds of the best quality.



Spray Millet

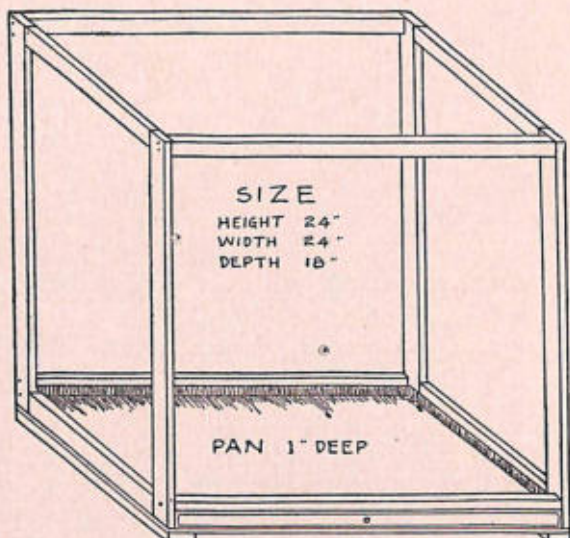
EGG-FOOD

How to Make It—How to Feed It

I believe the intelligent use of egg-food is the most important item on the list of foods for the successful rearing of young birds.

Some people do not use egg-food because they say it is not a natural bird food, but I have found it just the reverse. I believe it is most like the food on which the unhatched birds were nourished. This being true why would it not be the best food on which to start them off after their arrival in this world?

The most successful breeders who go in for mass production always use egg-food. It is easy to feed and the difference in the number of birds one produces when egg-food is employed is so great that the little extra trouble and expense is not to be considered.



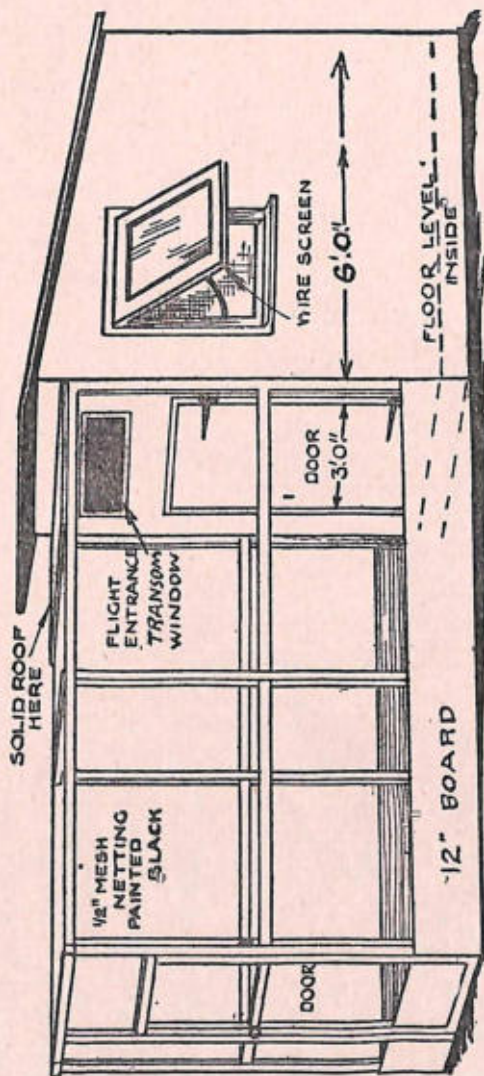
A GOOD HOME-MADE BREEDING CAGE

The framework of this aviary is made entirely of $1\frac{3}{4}$ " by $\frac{3}{4}$ " lumber. This frame is to be covered with $\frac{1}{2}$ " square mesh wire fabric, painted dark green for better visibility.

First make the base by nailing on to two timbers a square of three-ply veneer board 18" by 24". Next nail the four uprights as shown in the picture. The rest is too plainly illustrated to need explanation except to explain that the narrow piece in front over the pan is $\frac{3}{4}$ " by $\frac{3}{4}$ " and is made by ripping one of the $1\frac{3}{4}$ " by $\frac{3}{4}$ " timbers. This piece is put in so that the wire fabric can be securely nailed to it above the pan.

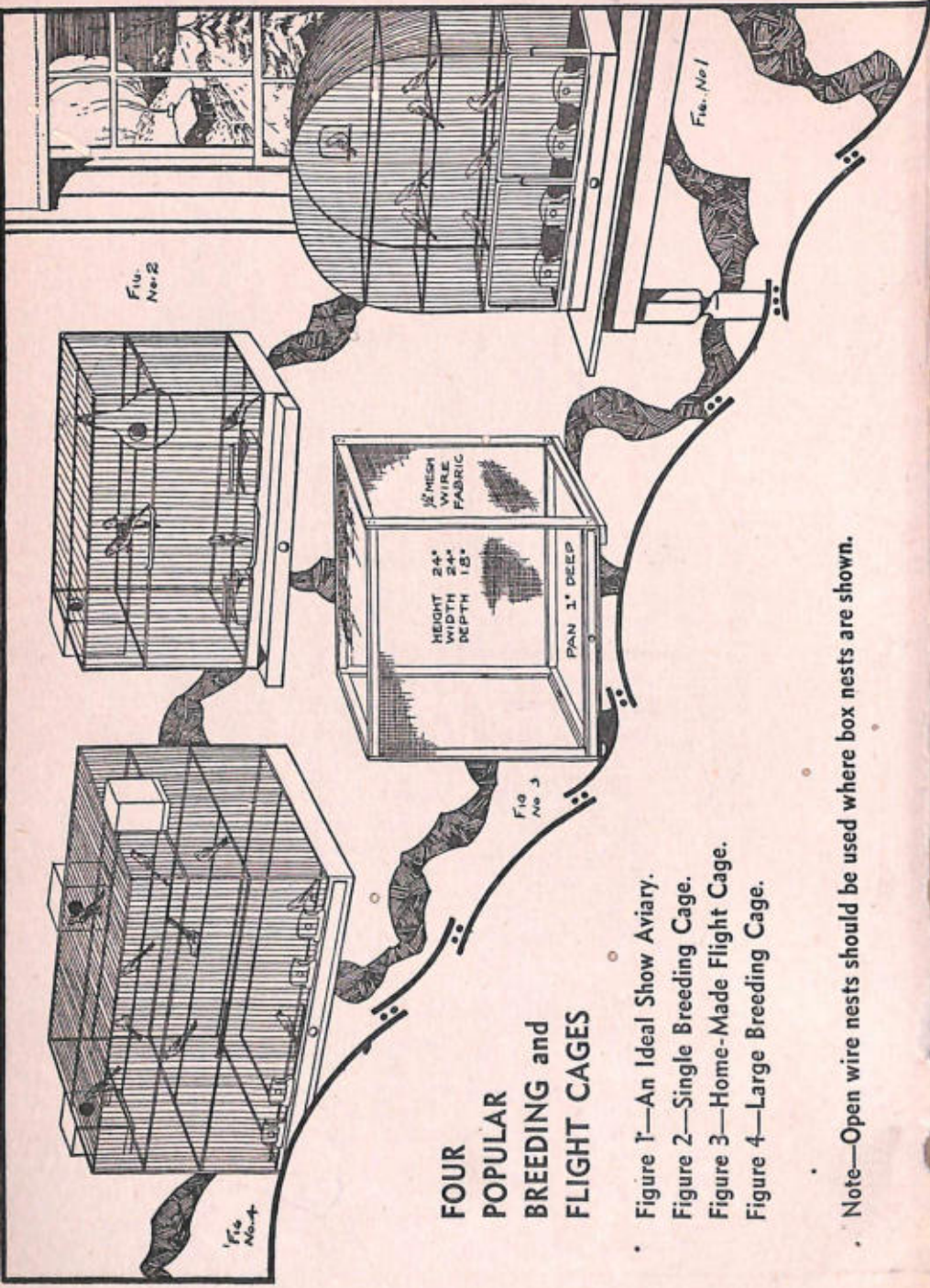
For a door, cut a $3\frac{3}{4}$ " by $4\frac{3}{4}$ " opening in the wire fabric in the exact center of the front and then hang a 4" by 5" piece of wire fabric over it, so as to swing upward to open.

Have pan of galvanized sheeting made to fit cage. This aviary can, of course, be made any size.



A MODEL AVIARY FOR A MILD CLIMATE

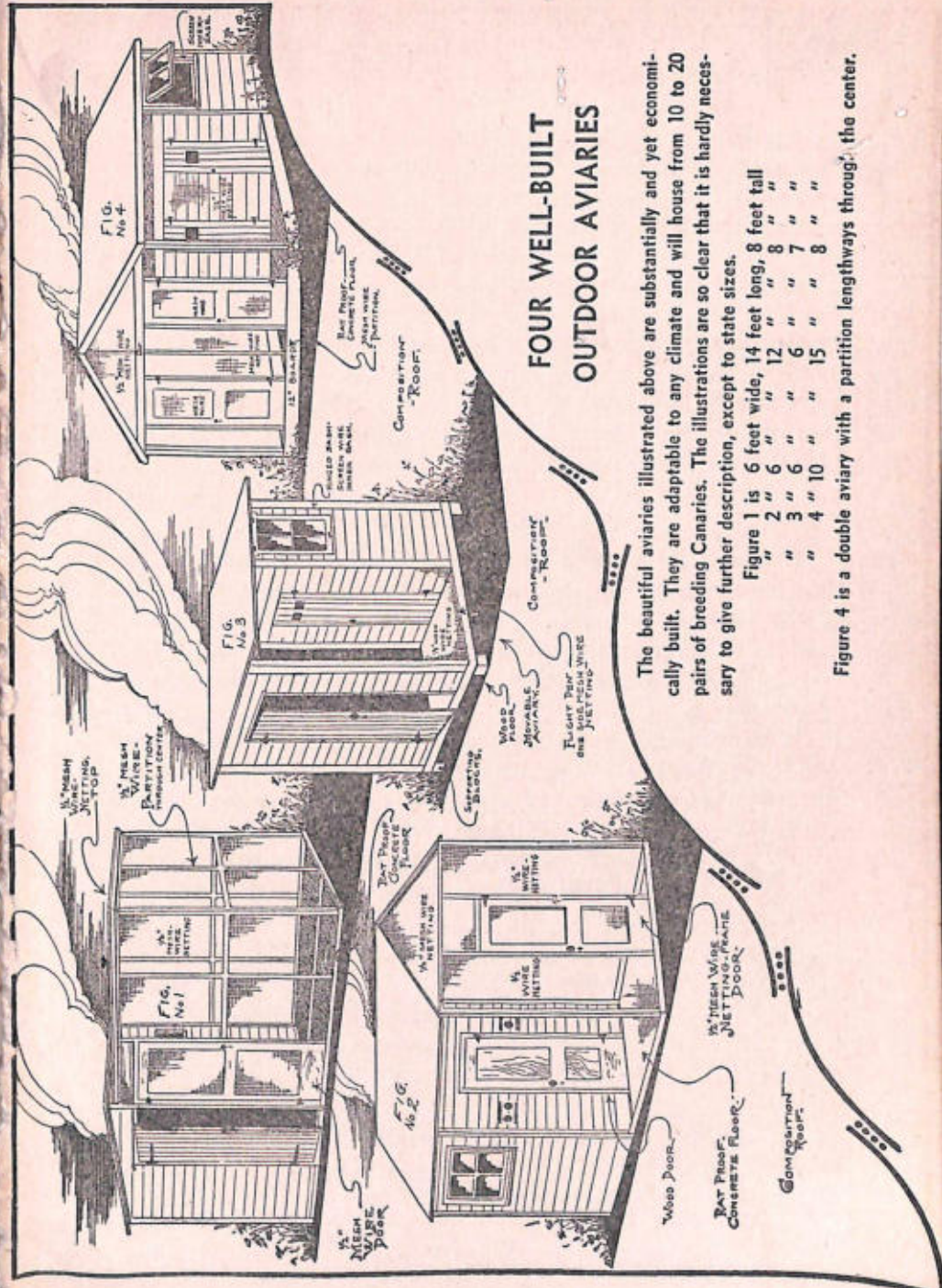
This Aviary is 14 feet deep by 6 feet wide by 7 feet tall, and is suitable for housing 15 pairs of Canaries or 10 males and 20 females. It should have a window on each side. Paint white or whitewash it on the inside to make it lighter. Leave the large door open in day time but close it at night for better protection.



FOUR POPULAR BREEDING and FLIGHT CAGES

- Figure 1—An Ideal Show Aviary.
- Figure 2—Single Breeding Cage.
- Figure 3—Home-Made Breeding Cage.
- Figure 4—Large Breeding Cage.

Note—Open wire nests should be used where box nests are shown.



FOUR WELL-BUILT OUTDOOR AVIARIES

The beautiful aviaries illustrated above are substantially and yet economically built. They are adaptable to any climate and will house from 10 to 20 pairs of breeding Canaries. The illustrations are so clear that it is hardly necessary to give further description, except to state sizes.

Figure 1 is 6 feet wide, 14 feet long, 8 feet tall

"	2	6	"	12	"	8	"	8
"	3	6	"	6	"	7	"	"
"	4	10	"	15	"	8	"	"

Figure 4 is a double aviary with a partition lengthways through the center.

Egg-food is not recommended for adult birds except as a body for color food or when a bird is emaciated. It is too rich and fattening.

In preparing egg-food, let us consider one egg as the basis for measurements. Boil the egg twenty to thirty minutes. An egg boiled less than twenty minutes is not tender and is hard to mash. Use both the yellow and the white of the egg, mash thoroughly as smooth as possible. To each egg add two tablespoonfuls of cracker crumbs, or toasted stale bread crumbs and mix thoroughly. If necessary, to mix well, add a little water, but the drier the food is the better. Wet, sloppy, soft foods are apt to cause loose bowel movements.

COLOR FEEDING

If one wishes to color feed birds, it should be done during the moulting season. It should be started when the very first loose feathers are found in the cage and should be continued straight through the moulting season, never missing a day, as each day missed means a pale or washed-out spot in the color of the birds.

Some breeders feed color food to young birds, but I do not advocate doing so. The basis of all color food is sweet red pepper. True, some color foods are more refined than others, but, even so, the best of them require a certain amount of work for the digestive organs that could be used to better advantage on more nourishing foods.



Double
Seed Hopper

Young birds moult when they are about three months old and all the rich, beautiful, artificially colored feathers, resulting from color feeding are lost, the new ones coming in to replace the old ones will be the same as if no color food had been fed. Therefore, aside

from whether or not color food is harmful to baby birds, it is a useless waste.

A color fed bird should never be allowed to stay in the sun too long at a time as sun fades the color and in a very short time he will begin showing light spots. A bird in the house retains his color much longer than a bird in an outside aviary.

During color feeding, much green food should be given as it helps to set the color. Such greens as young tender mustard greens, green lettuce or water cress are all good. When feeding lettuce be sure to feed the green kind whenever it is possible as it contains much more iron, and other minerals as well as more valuable vitamins, than the white or bleached lettuce. A beautiful orange red bird that has been properly color fed is a joy to behold.

LINE BREEDING

The system of line breeding is used by all breeders of fancy live stock to establish certain strains and to obtain certain hereditary characteristics, such as size and color.

Line breeding must not be confused with inbreeding. Line breeding builds up the strain, but inbreeding tears it down. Most of our enormous turkeys and other barnyard fowl of today are the result of careful selective line breeding. Our giant domestic turkey is an outstanding example of careful selective line breeding. Only a few generations ago this species was quite small compared to the twenty-five pound birds we often find on the market today.

CANARY COLOR CHART

Inbreeding, which is the mating together of brothers and sisters, will result in inferior stock, usually of smaller size than the parents. However, it has been resorted to in order to establish or fix desirable characteristics. On the other hand, indiscriminate inbreeding will just as easily establish or fix certain undesirable characteristics. For this

reason the beginner should avoid this practice, and leave it to the experienced breeder who knows more about it and who has a definite object in mind when he practices it. The weaknesses resulting from inbreeding will not be so noticeable in the young of the first generation, but each succeeding generation will become weaker and less desirable.

One may have a male canary with beautiful markings and would like to build up a strain exactly like him. Of course it is not possible to obtain a female with the same markings and know that the parents of the female carried the same markings, half the battle would be won. But since it is almost impossible for the beginner to know this, it would be better to use a perfectly "clear" female, that is, a female with no markings at all. The bird should not have any black feathers or spots on either the beak or feet. Among the young from this mating will be at least one bird like or nearly like the father. Let us hope this young one is a female. In any case select a female from them as nearly like the father as possible and mate her back to him. The offspring from this mating will be nearer the goal. There should be some among them exactly like the father.

This mating females back to the original father must be kept up until every bird in the nest is like the bird one is trying to perpetuate. When this is accomplished, mate the youngsters to clear birds of unrelated stock and start another line using the same system as that employed in the first instance.

It is sometimes possible to have two lines going at the same time, in which case one will not have to go outside and bring in birds so totally unlike the strain he is striving to establish to get unrelated stock. By cross breeding these two lines the strain will be perfected much sooner.

HYBRIDIZING

Hybridizing, or cross breeding as it is sometimes called,

is a difficult problem if one does not understand the laws regarding it. The old saying that "Birds of a feather flock together," is as true today as it was the day the phrase was coined. It is true that some very beautiful hybrids have been produced by crossing various breeds of Finches and Siskins with canaries. Some very good hybrids have come from the Canary-Bullfinch cross. Perhaps the most beautiful product of all the crosses comes from the Canary-Linnet cross. The deep red color on the head, breast and rump of the Linnet merges so smoothly into the rich yellow of the Canary. Our English cousins devote year after year to hybridizing and in many cases get very satisfactory results. But, unless one has the patience of Job or, let us say, of the English, I would not advise it as a hobby.

There are two things our federal government has done that just about make it impossible for us Americans to experiment with these birds, namely, banning the importation of Bullfinches into this country and ruling against the interstate shipments of Linnets. These two laws are very hard on bird lovers, but as Bullfinches are very destructive to fruit buds in the orchards, it was deemed necessary by the government to pass such laws. After all, these birds do not contribute to the economic welfare of our country, and we all know the farmer has enough natural pests to contend with without adding any more to the list, so we feel that it is well to gracefully bow to the mandates of Uncle Sam. European gold finches are still permitted to enter this country and when crossed with the canary they produce some very pretty hybrids.

There is a great demand today for a red canary. With this idea in mind, the black hooded Siskin from South America is being crossed with the deep yellow canary. This Siskin is a bit smaller than the normal size canary. It has a black hood, a red body, black wings barred with red, and a black tail. Some very beautiful copper colored or deep orange birds have come from this cross, but I do not believe it possible

to produce a truly red canary by mating the Siskin to a yellow canary. It is asking too much of nature.

I do not believe it is possible to get a red canary by crossing a red bird of any species with a canary, as long as there is the yellow blood factor to be reckoned with. If this is true, it is safe to say that when this much heralded red canary appears, it will have to come through a white or blue gray canary that carries no yellow blood factor.

When mating the Siskin with the canary, better results are obtained if the male bird is the Siskin and the female is the canary. The reason for this is the canary, being the domesticated one of the pair, will make the better mother. However, if the female is the Siskin and the male the canary, the color results will be equally satisfactory. It takes much longer for the female Siskin to settle down and mate with the canary than it does for the male Siskin to mate with the female canary.

The females of the first generation from the Siskin-canary cross are invariably mules or infertile. But this is not so with the males.

Keep the young males from this crossing, as they will be fertile. Select the deepest colored ones, that is, the ones nearest the coveted goal, to mate with other deep yellow canaries the following season. The choicest one of the lot should be held back to mate back to the mother. The females, as well as the males from both of these matings should all be fertile.

Keep the best colored and most desirable youngsters of this generation, and the next season select the best and most colorful female and mate her back to her father, also pair the most desirable male of the lot back to the mother.

The breeding quarters for this experiment should be in a quiet, secluded location where the birds will not be disturbed any more than is necessary to keep the cages cleaned and birds fed and watered. If an outside aviary is used it should be about four feet wide, twelve or fourteen feet long and



White Yorkshire
Green Yorkshire

Mottled Yorkshire
Blue Yorkshire



Cinnamon Warbler
Crested Warbler
Green Roller

Buff Dutch Frill
Color Fed Norwich

about seven or eight feet high. Of course, if one has unlimited space, a longer flight would be better. Half of the aviary or about six or eight feet should be inclosed on three sides and well roofed. This enclosure should be well supplied with snug hide-outs such as evergreen boughs or non-poisonous growing shrubs. Wild grass and weeds are also helpful. These growing things also supply tiny insects of which the Siskins are very fond.

If the birds are to be bred in a cage, choose one that is as large and roomy as possible and proceed as nearly as possible along the same lines as described for aviary breeding, always bearing in mind that they must be disturbed as little as possible.

A better way to procure the right mate for the Siskin is to put him with three yellow females and let him make his own selection for the mother of his children. Band each female with a different colored leg band so it will be easy to see which one he has chosen, or he may even choose two mates, but if he only takes to the one female the other two should be taken away or they will interfere with the breeding operations of the mated pair.

There must always be plenty of good sharp grit, eggshell, oyster shell and slacked lime in the aviary or cage, whichever the case may be. In addition to the regular canary seed mixture, there should be thistle, poppy and millet seeds, as the diet of the Siskin is more varied than the diet of the canary.

HEREDITY

The beginner might become confused over the subject of heredity, as do many old-timers in bird breeding. We find ourselves still groping in the dark, trying to locate the causes of certain physical conditions that are habitually cropping up to either advance or curtail our progress.

Few diseases are hereditary. A child may inherit weak lungs from his father, but it does not follow that the child will

die of tuberculosis. Most so-called hereditary diseases are not hereditary at all. However, it is quite natural that birds suffering from any malady, no matter how insignificant it may be, are very liable to throw young with vitality below normal.

Contagious diseases are not inheritable. A bird that has had any kind of contagious diseases and has fully recovered, after having built up its lowered vitality, and is again in good health, will produce healthy, normal birds that will show no traces of the much-feared contagion.

The offspring of parents suffering from physical ailments that tend to lower vitality will not necessarily be victims of the same trouble that beset their parents. But if they are reared in the same atmosphere that caused their parents' indisposition, plus not being physically up to standard, they might easily develop the ailment from which the parent is suffering. However, they might just as easily contract any other disease that might develop in such surroundings.

Color, style and characteristics are inheritable traits. It is impossible for color fed birds to produce any but natural color birds. The brilliant orange or orange red color that is the result of artificial coloring cannot be passed on to the young from color fed birds.

A bird may come into the world with a crooked leg. This is a deformity and not a heritage. Broken limbs, blindness caused by injury or any other defect caused by accidents are not inherited.

Good health is inherited insofar as good, strong healthy stock will produce good, sturdy, healthy offspring.

It is still a mooted question as to whether or not song is an inherited feature. The son of a wonderful singer may have a voice exactly like his father, having inherited the song organ of his father. But this same youngster, trained by another singer will sing like his trainer.

BIRD CLUBS

"Should I join a canary club?" This is a question that is being asked by many canary breeders who wish to get the maximum amount of pleasure and profit from this hobby. My answer to this question is most emphatically, "Yes," especially if one breeds Type birds.

There are one or more clubs in every large city. The breeder who lives in the city should avail himself of the many privileges offered by these clubs. The surest way for the novice to gain knowledge of the many different types of birds and be able to accurately tell the difference between the perfect and the nearly perfect bird, is by attending the club shows. These shows are usually held in the late fall after the birds are through moulting. At this time when their plumage is bright and new, the birds are at their best from every point of view.

As competition is the life of trade, so is it the life of the canary show. It is competition that makes one put forth every effort to produce the best bird on the show bench.

Old club members, who are really the old standbys for the shows, are always ready and willing to help the beginner on his way. They want to see new blood in the personnel of their clubs as well as in the birds themselves. By all means, join a club, the club needs you and you need the club. If there is not a club in your town, get a few breeders together and start one. If there are only three or four members, it will be very interesting to vie with each other in trying to raise better birds.

A BOOK OF RECORDS

The keeping of records is of great importance to the beginner, especially if he has purchased his stock from various places. Naturally he has no records concerning his new birds unless he bought them from breeders who have made a practice of cataloguing their stock.

These records are nothing more nor less than pedigrees. Whether the birds are registered or not does not alter the fact that their pedigree can be traced back as far as their records go.

As a rule the methodical breeder who keeps a systematic record of his birds is always glad to give the beginner to whom he sells birds, the correct information concerning how they should be paired.

From here on, it is up to the beginner to keep his own records if he wishes to know everything about his birds when the next breeding season comes around. These records may be very simple, but they must be accurate. The good and bad points of each bird must be correctly entered in the book. The exact date that each pair was mated, how long they were together before the first egg was laid, how many eggs were laid, how many young were hatched and how many was raised from each pair. Also one wishes to know whether or not one or both of them were indifferent breeders or feeders.

This may sound as if it entails a lot of unnecessary work, but it really is only a simple system of record keeping which the breeder can inaugurate to suit his own particular ideas. However, it is absolutely necessary in order to properly discard unprolific stock. No one can afford to house, feed, and care for birds that do not produce good, strong youngsters and the maximum number from each mating. At the end of every breeding season, by consulting the records one can weed out all birds that are not up to standard.

A record of the colors bred from each individual pair should be kept.

Young birds kept for breeding purposes should be leg banded. The bands should be numbered and recorded so they can be identified when the time comes to mate them up for breeding.

BREEDING TYPE CANARIES

The Type Canary is fast taking the front row in the canary world. After a fancier has mastered the intricacies of breeding the common canary, he invariably begins to feel his way out into broader, more exciting fields which are to be found in the breeding of Type Canaries.

The color varies in Type birds just as it does in the roller or warbler. The bird may be yellow, green, mottled or white. All are beautiful.

At the shows it is always the large Type birds that attract the most attention. Type canaries are those that are bred for special points other than song and are the product of selective breeding. The same general rules as those laid down for breeding the roller and warbler may be successfully adopted, but the mating of Type birds requires more care. Large Type birds such as Yorkshires, Norwiches, Lancashires, Cop-pys, Dutch Frills and Belgians require larger nests than does the ordinary size canary. There are usually two sizes of nests shown in the pet shops, regular sizes for the rollers and warblers, extra sizes for the large Type birds. If the dealer does not have the large size nests, which is sometimes the case, do not be persuaded that a small one will do as well. It is better to make one from a strainer or sieve, such as described in the chapter on "breeding." If it is inconvenient to procure one of these kitchen utensils, a very good nest can be made of a large size round cardboard box such as are commonly used for breakfast cereals. The nest should measure from six to eight inches across the top, as these large birds require much room to be comfortable. Occasionally one finds a female that is quite temperamental and because of some odd fancy, will refuse to build her nest. If this situation arises, humor her along by starting the nest by hand, but do not do too much building.

The cage for breeding Type birds should measure about 20 inches long, 18 inches deep and 18 or 20 inches high. If

the nesting end of the cage is enclosed, so much the better as like all birds they like privacy for their breeding operations.

Large Type birds usually are more fully feathered around the vent than other canaries, which often prevents successful copulation. It is always well to trim the feathers away from the vent of the male. Because of the swollen condition of the vent of the female and immediate area surrounding it when she is ready to mate, it is not often necessary to trim her feathers. If there is any doubt as to whether or not her vent is accessible, examine her closely and if necessary, trim the feathers from her also.

When breeding Type birds I do not advise mating trios, that is mating one male and two females. One must always bear in mind that it is perfection of style and size that we are working for in Type birds. Since size is contributed by the male, it is well not to work him too severely. Even so, many breeders allow their males to have several mates.

The beginner who wishes to take up this branch of the fancy should give much study to it before deciding what Type birds he wants to breed, then purchase his foundation stock from a reliable dealer or breeder.

A very good way to determine what kind of birds one wishes to breed is by attending the shows that are held each year in all of the larger cities. Here one can see all the various types and can decide with open mind the kind of birds he wants to work with. By all means choose only one type to start with. After one masters the technique of breeding one type, he may add other types to his breeding room.

THE WARBLER

The most popular and by far the most satisfactory canary for the beginner is the warbler. There are many reasons why this is true. First of all, warblers are very hardy birds and if given half a chance, and if they come from good stock, almost always produce satisfactory results.

They are not as temperamental as birds that are bred for one specific purpose, such as breeding for size only, or as in the case of rollers, where song is of paramount importance.

But in raising warblers the purpose is to produce an all round, well balanced, satisfactory bird with beautiful plumage and a goodly allowance of personality as well as a most beautiful song.

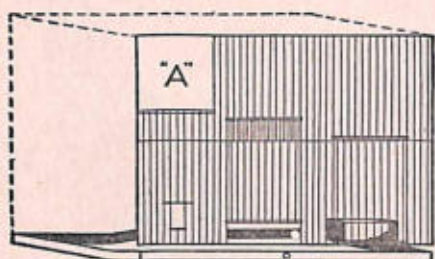
The song of the warbler is happy and cheerful, with more volume and with more varied notes than the song of the roller. Whether he is yellow, green, or mottled, makes no difference to him. The homeliest of them will sing as well as the most beautiful, and vice versa.

Another point in favor of the warbler is that he is not as delicate as some of the other type birds, this probably is because there is more outdoor breeding of warblers. Even though one buys birds from a pet dealer who naturally must keep them in a cage, does not necessarily mean that they did not come from stock reared out of doors. It is well to remember that the canary most in demand by the average bird dealer is the warbler. If one is breeding for profit, naturally the breed to raise is the one that can be most easily disposed of.

The earlier in the season the breeding stock is acquired the better. This may be why canaries given as Christmas gifts do so well. Not from any romantic sentiment that might be attached to such a gift, but because they have had enough time to get acquainted with their surroundings before breeding activities begin in the spring.



A Well Shaped Warbler



Box Breeding Cage

If one wishes to breed warblers indoors the same general rules for breeding that are discussed in the chapter on "Breeding" should be followed. For one who likes a lilting rollicking variety of song no bird can take the place of the warbler.

Raising rollers must be done indoors in order to prevent the singers from picking up wild notes and "going off their roll," which spoils their song. But quite the reverse is true with warblers. In an outside aviary they can sing and develop their song to their heart's content. If an occasional wild note is picked up it only adds novelty to their song, making a more varied repertoire.

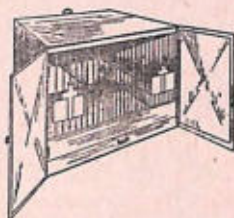
THE AMERICAN ROLLER

The Low Singing Canary with the Bubbling, Soothing Song

To the Germans must go the credit for the greatest development of the Roller, the low-singing bird with the modulated voice. For many years we in America believed that the only really good Rollers must come from Europe, but that is not the case today. After many years of studiously selecting the best birds we could procure for mating, both as to song and pedigree, our American Roller is now second to none.

The song is a low, melodious roll, sometimes consisting of as many as ten tours. It is very hard to describe a "roll" but the soft, bubbling sound of rippling water characterizes the song more nearly than any other sound. A tour may be described as a round of musical notes, naturally the more tours a bird possesses the more valuable he is.

There was a time when the name "St. Andreasberg" (a section of Germany from whence came our first fine rollers) was all that was necessary to sell a roller, but that is not so today. American rollers are fast taking the place of the old St. Andreasberg imported bird. I am not saying that the Europeans are breeding inferior birds for this is not true. Those countries have made progress along with the rest of us. The point I am trying to make is that just as good birds, if not better, are to be had in America, as Germany or any other country ever produced.



Roller Training Cage

I suggest to the beginner who has no one to assist him in selecting his foundation stock that he pay particular attention to the form and carriage of the male bird, especially while he is singing. The picture of the roller in this book is a very good guide to use. A long, slender male canary is always more desirable than a short, stocky one.

Rollers are always selected for song rather than color. However, if a prettily marked or yellow bird shows up with a song equal to that of the dark, or commonly called green roller, he is naturally more desirable. Always bear in mind that color in rollers makes little or no difference in the value of the bird. The song is the thing that counts. Some of the finest singers, the highest priced birds, are homely, little specimens that breeders of type canaries in whom color means so much, would not buy at any price.

Particular attention should also be paid to the female. She should be a little broader of body than the male and have a maternal appearance, but she should be neat and trim and carry herself well. Birds of this build seem to make better mothers. A nice, slender male and a slightly stocky female is

an ideal pairing and one that will produce youngsters of good form and carriage as well as song.



Bath House

Let no one think that the voice of the female is of no importance. She contributes very much to the quality of song of the offspring. A soft, low chirp or call note is indicative of a low, sweet song quality while a loud, harsh call is quite the reverse. One may feel that selecting a female roller is

an easy matter and give very little thought to the selection, but this is a very grave mistake.

Some canary fanciers have the deplorable habit of promiscuously swapping or exchanging their birds for new blood. Usually the females are the victims of this swapping craze. They are traded for other females no better than themselves, often not as good. It is better to raise your own breeding stock than to trade for birds of undetermined age and ancestry.

For the best song results rollers should be bred indoors where they cannot hear the song of other birds. Otherwise they will pick up stray notes which will be interspersed with their own natural roll.

I once had an unusually nice pair of Cockatiels that I wished to breed, and for economy's sake I built the aviary adjoining my back porch on which I was breeding my first pair of rollers. Imagine my chagrin when I discovered all of my young male canaries singing like Cockatiels. I have no objection to the song of the Cockatiel, a beautiful whistle with many variations, but I do not care for it mixed with the soft song of my rollers.

The beginner will do well to ally himself with a roller canary club, almost every town in the country with a population of 10,000 or more has at least one roller club. He should attend the meetings and patronize the shows. He will find the club members always ready and willing to help a newcomer.

Should one wish to buy a good roller singer for no other purpose than to keep as a singing pet in a song cage, he will find some very good birds in pet shops. Many breeders sell their surplus stock to the pet shops, but will not give pedigree papers with them. It is a simple enough matter to listen to them sing before making the purchase and the dealer is always glad to have his customer do this.

The night singing roller is a lovely pet for one whose business or professional duties keep him away from home during the day. Any kind of canary can be trained to sing at night, but there is a plaintiveness about the long low song of the roller that is especially restful, as one sits around the family hearth on a cold winter evening and allows himself to relax and be gradually lulled to sleep by this little music box.

The method of training a night singer is very simple. The bird is kept in a partially dark room during the day, a dark cloth over the cage does quite as well. He must be brought out into the light at intervals during the day, as he may not see well enough to eat or drink in the dark. This training does not have to be kept up indefinitely. After the habit of singing in the evening has been formed he may be left in the family living room where his song can be enjoyed at all times.

THE WHITE CANARY

His song and physique are the same as the regular warbler or roller to which we have always been accustomed. The only difference is the color, or rather lack of it in the white bird.

As time goes on and people become more and more bird conscious they are forever trying to produce something new in canaries. Some of these new varieties have turned out to be real beauties. The most outstanding of them all is the white singer.

The white canary is the product of much line-breeding as well as a certain amount of inbreeding. Consequently in the

earlier days when the breed was more or less in the experimental stage it was considered a very delicate strain. But much has been done to build up the stamina, such as the occasional introduction of green blood into the strain. This merging of green blood with the white strain caused the offspring of such mating to be white with black or grey spots, some grey with white spots. These black and white, or grey and white youngsters were beautiful birds and gave their owners the idea of producing the blue canary, which up to now, is not blue at all as we know the color but is a bluish grey, very soft and soothing.

Many people like the little touch of black on a white bird, they feel that an all white bird might become monotonous, while others see the all white bird as the standard of perfection and will not be satisfied with any spots at all.

When mating white canaries of any breed best results are obtained by pairing them to light yellows. However, all of the young birds will not be white. Some will be light yellow and some will be white, there might even be a dark yellow one in the lot but all of the brood will be good, strong youngsters.

If the light yellow bird that is used for this mating is from light yellow and white parents there will be more white than light yellow youngsters produced. If one wishes to mate two white birds and knows that one of them had one white and one light yellow parent the prospects for good birds are much better than if two whites, about which nothing of their ancestry is known, are mated. Whether the male or female is the white bird makes no difference but one usually prefers the male, or singer, to be a pretty bird. My advice to the beginner is to get the best birds possible and breed up to the standard wanted. This is a very interesting hobby, and at the same time is usually quite profitable.

**FIVE LOVELY
SPECIMENS OF
PURE BRED CANARIES**

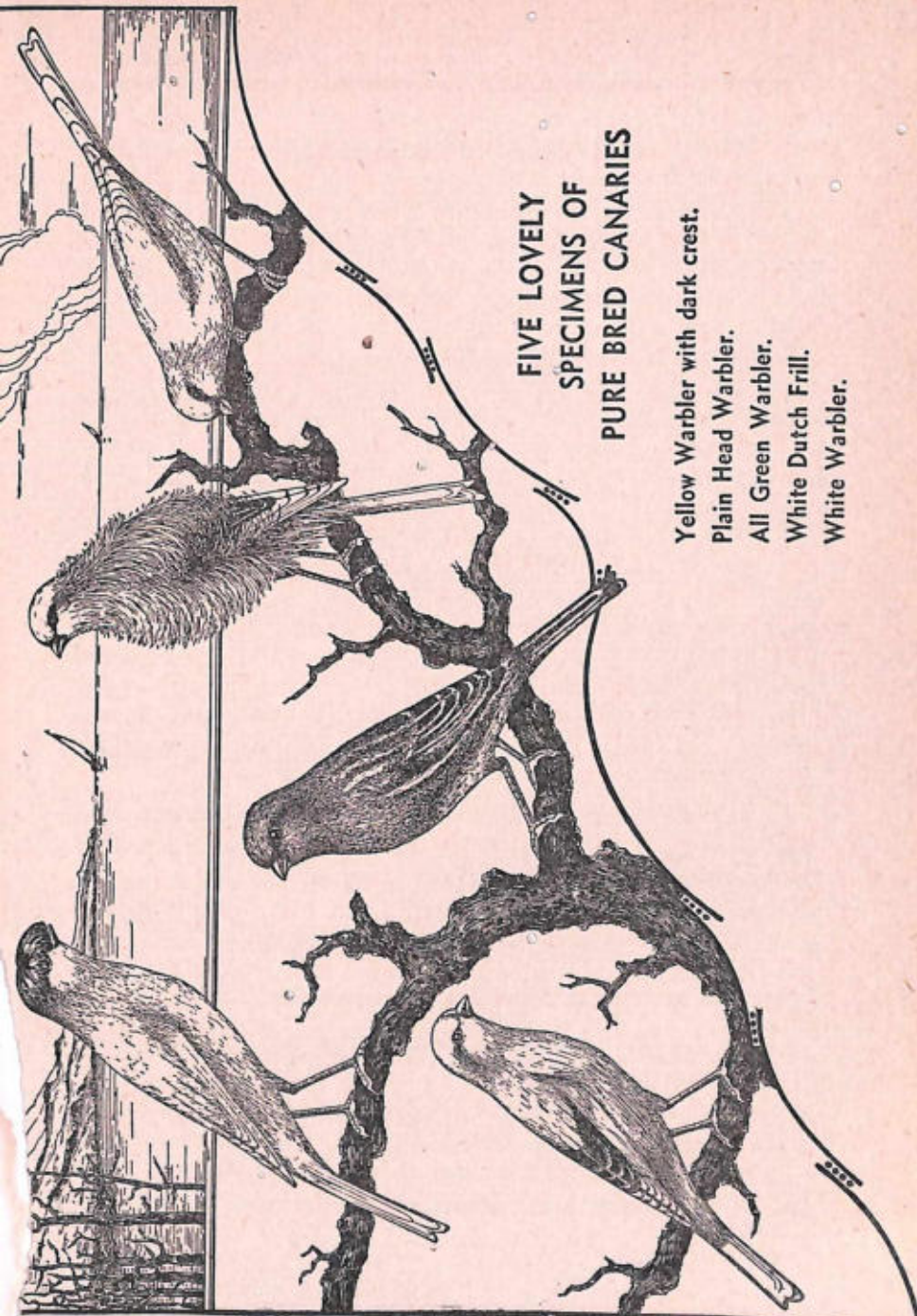
Yellow Warbler with dark crest.

Plain Head Warbler.

All Green Warbler.

White Dutch Frill.

White Warbler.



CINNAMON CANARIES

The Cinnamon canary is unique in that there is much difference of opinion as to its origin. Some claim it is a sport thrown from the green canary. Other authorities say it was not thrown from green blood but that it was deliberately bred from that color.

Cinnamon blood has been infused into the blood of almost all types of canaries to produce richness of color. This color may be found in almost all breeds. The Cinnamon color may be bred into other colors but other colors cannot be bred into the Cinnamon. The results of such experiments have been very discouraging. The Cinnamon color is definitely fixed and is not the result of color feeding.

To breed pure Cinnamon canaries, one should pair self Cinnamons, that is, both birds should be pure Cinnamon. To breed these birds for show purposes, one should by all means have both male and female birds dark self Cinnamon, with light, nearly white beak and legs.

Breeding pure Cinnamons is a tedious job for the beginner. The birds selected should have nice, large, firm bodies and of course be from good Cinnamon stock.

Cinnamons are strong, hardy birds. They make excellent parents and are almost always good feeders, which is a very strong point in their favor for the beginner.

THE YORKSHIRE CANARY

The Tall Slender Bird of Exquisite Beauty

A number of improvements have been made in the Yorkshire canary during the last few years. Formerly this bird, so remarkable for his slenderness and his statuesque posture, was supposed to be slender enough to be "put through a wedding ring." Whether or not this legendary feat was actually accomplished, I do not know.

A good Yorkshire specimen should be about six and one-half to six and three-quarter inches long. However, the length is not so limited as long as it conforms to the rest of the body. For instance, if a longer body is developed, other characteristics must be developed to conform to the long body. In other words, excessive length must not be allowed to spoil the symmetry of the bird. I believe, in the future, these long fellows will find much favor with Yorkshire fanciers.

The Yorkshire type seems to be changing from the cylindrical shape to a more slightly peg shape. In the past the shoulders, while well formed could not be too pronounced or they would spoil the cylinder-like effect that was so much in demand. The new type Yorkshire must continue to be long and slender, but the shoulders are slightly broader, making the bird appear more peg-shaped than was formerly allowed.

The perfect specimen must stand upright in a bold, fearless position on long, strong legs. The thighs should be exposed but should be covered with short, close-fitting feathers. He should stand well-braced on his feet, which grip the perch firmly. The head should be well rounded with no sign of flatness, bold, but not too big, the beak short and smooth. The eye should be round and black and set well in the middle of the cheek. The neck must not be too long as it will appear stringy. Neither must it be too short, for a Yorkshire with a short neck will look as if he carries Norwich blood. It should curve slightly inward before reaching the shoulder. The chest should be well rounded, but not too prominent and should seem to flow gracefully into the long, slim body which extends beyond the thighs to the under tail feathers. This graceful line is unbroken, except for the trim, well-covered legs.

The wing and tail feathers must be long and slender. The flight feathers should meet above the rump but not cross and extend well over the tail coverts. The tail feathers should be folded close together, never spread out like a fish tail. They should be long enough to give the bird a graceful appearance,

but not so long as to look as if it were trying to make up for the lack of length in the body.

The vogue for trying to produce the longest bird possible is in many instances responsible for the many other faults in these birds, especially the loose, floppy tail which detracts materially from the trim smartness and precision of this aristocrat in whom slovenliness is never permitted.

The general coloring of the Yorkshire is much the same as in other canaries. Some yellow, buff, green, cinnamon and variegated.

When pairing Yorkshires there are certain rules that must be obeyed if best results are to be had. First, of course, is to get breeding stock as nearly perfect as possible. It would be nothing short of a miracle if the beginner, or even the experienced breeder for that matter, should procure both male and female birds that are perfect specimens. Such birds would be worth far more than the average beginner would care to pay for them. Also, they are worth so much to their owner, that he would not part with them.

Naturally, everyone wishes to breed the best birds possible, both as to type and size. One may have a female that is a perfect type though a little small in size, but this bird mated to a long, oversized male may produce some very desirable birds, even if the male has a few faults that are not too pronounced. Such matings have been known to produce some prize-winning birds.

Remember that type and style are transmitted to the young through the female, while size is transmitted through the male, which is also the color carrier. Therefore the correct pairing would be a male of good size and of deep, rich colorings, whether green, yellow or variegated, mated to a female of good type, even if she is a bit under the required length.

Never discard a Yorkshire female because she is slightly undersized if she came from parents of good stock, unless one better than she can be had to take her place.



WARBLER CANARY



ROLLER CANARY

One may have a green, variegated, or a deep yellow female of good type, in which case the male should be light yellow. Never pair two light yellows or two deep yellows. The results of such matings are the same as in all canaries.

Points of Perfection in the Yorkshire

Head	05
Neck	05
Shoulders	05
Back	05
Chest	05
Legs	05
Tail	05
Length	10
Position	20
Condition	10
Color	05
Feather	20
Total	100

WHITE YORKSHIRES

A Handsome Bird of Statuesque Beauty

Except for color, the white Yorkshire is in every respect exactly like the regular long, trim yellow variety. The bugaboo about white canaries being hard to breed is fast dying out. One might say "they are hard to get," but anything so rare and beautiful as the perfect and statuesque white Yorkshire is worth striving for.

The breeding arrangement is the same as that prescribed for the regular Yorkshire. I advise the beginner to start by mating a white bird to a light yellow. In this case where we are not trying to fix definite characteristics, it makes little difference which one of the two birds is white.

This pairing, regardless of whether it is the male or female that is white, will result in about fifty percent of the offspring being white. It is quite true that if both parents are white the chances are good that not all of the offspring will be as virile.

White birds, in the hands of experienced breeders are often mated to whites with fairly good results, but the breeder must know the parentage of both birds for at least three generations back. Therefore we advise leaving this form of mating to those who have gone through the mill and know what to expect and what to do to get it.

THE NORWICH CANARY

The Norwich canary is as different from the Yorkshire as it is from the common canary, and is running that long slender bird a close second in popularity.

The correct length of the Norwich is $6\frac{1}{2}$ inches. The head is large and round, the cheeks full enough to make the head appear round at any angle from which it is seen. The eyes bold, round, bright and fairly large and set well into the cheeks, but a close observer will see that they are nearer the beak than the back of the head.

Breeding for size has caused many breeders to disregard a number of other important facts. Consequently we are beginning to see plain head Norwich canaries with eyebrows. This should not be as it tends to make the bird look flat headed. Because of the difficulty in getting a large number of birds together without any suggestion of eyebrows, some judges in passing judgment on an otherwise perfect bird, are prone to wink at this fault. Other judges more exacting in their demands, turn thumbs down on the plain head Norwich with eyebrows.

Then comes the beak, small and clear, which reminds one of the little cardboard beaks stuck into the faces of the little

cotton chickens that are so popular all over the country at Easter time.

The back is almost a straight line from the back of the head to the tip of the tail, the head rising slightly with a gentle slope to the body, which should be ball-like in appearance. The back and shoulders should show no sign of flatness, neither should there be any signs of awkward thickness.

Unlike the Yorkshire, the wings of the Norwich are short and firmly set into the shoulders. The flight feathers meet and extend down the lower back and stop at about one-quarter to one-half inch short of the tips of the tail coverts.

Next in order is the short tail. The feathers should be folded closely and held firmly in place.

Last but not least, we come to the legs. They should set well back into the body but not so far as to make the bird seem to be leaning forward. If the legs are too long the whole body is thrown out of position. This causes the bird to look as if somewhere in his ancestry there is Yorkshire blood, which spoils his shape and position. On the other hand, if the legs are too short, he will not be able to get about gracefully but will hobble awkwardly. The legs should be set wide apart, otherwise the important roundness will be narrowed down and the body will seem to be flat-sided. I cannot impress too strongly the importance of rich silky plumage in type birds. By silky plumage I do not mean loose, floppy feathers. These must be avoided at all times.

There is no bird that takes to color feeding as successfully as the Norwich, whether buff, yellow, green or mottled. The deep yellow color-fed bird will be a beautiful reddish orange color, the ordinary green bird will come out of the color-feeding period, a rich bronze. The color-fed buff Norwich is a thing of beauty, the yellow of the feathers takes on a beautiful orange, while the tiny white border of each feather takes no color at all, but remains white. This gives the impression of being lightly and evenly touched with frost. Someone has

said they look like peaches before too much handling has brushed off the bloom.

Points of Perfection in the Norwich

Head	15
Neck	10
Chest	15
Back	10
Wings	10
Tail	5
Feathers	15
Legs and Feet	5
Color and Condition	15
<hr/>	
Total	100

THE CRESTED NORWICH

This big showy bird, except for the crest, is in every respect like the plain head Norwich.

At the type bird shows the greatest crowds are usually congregated around the Yorkshire and Norwich sections. While the tall aristocratic Yorkshire is being admired for his extreme length of body as well as grace and poise, the round stocky, highly colored Norwich is commanding attention because of his unusual appearance and rare beauty.

If, among these excellent specimen there happens to be a color-fed yellow bird with a dark crest, the owner had better put him under lock and key. I have seen these birds with crests so large that if they were held head down over a silver dollar, the crest would completely cover the coin, but such birds are rarely seen. A bird of this caliber seldom falls into the hands of a novice unless the bird is nearing the end of his usefulness, or has not proven satisfactory for breeding purposes. However, even the bird that has proved to be an indifferent breeder may, if given an aggressive mate, and put

in an entirely different environment, snap out of his indifference and become a fairly good breeder.

The crested Norwich appears to be much larger than the plain head, but it is the predominance of feathers that creates this impression. A really good crested Norwich is something to be proud of. There are not many perfect specimens in this country and those in whose possession they are would not part with them at any price.

Except for the crest, the general style of this bird is very much the same as the plain head. The crest must be round and full, the feathers radiating evenly from a tiny spot in the center of the top of the head, completely hiding the eyes and so nearly hiding the beak that one must look twice before finding it. The head directly back of the crest, must be as smooth as the head of the plain head bird.

To produce a crested Norwich such as this is the goal of every Norwich breeder. In the progress of building up to such crests, it was necessary to produce excessive feathering. This was done by double buffing, which in turn produced large loose body feathers. But by careful, selective breeding this handicap has been almost overcome.

THE DUTCH FRILL

The Type That Is Unique in the Bird Shows

The Dutch Frill canary may have originated in Holland but the old saying, "You cannot beat the Dutch" certainly does not hold good in this case. Credit for the development of the Dutch Frill to its present marvelous type, which is very Parisian, goes to the French. These birds are not bred for color, although they are to be had in all the colors found in other types of birds. The principal feature is the frilly feathers which curl up towards the small, trim head.

It is only in recent years that they have been exhibited at the shows to any great extent. Nowadays there is a special



Dutch Frill
A Splendid Specimen

class for them, the same as for all other type birds. Dutch Frills are by no means at the perfected stage, there is still much room for improvement and much advancement is being made every season.

There are those who upon first seeing one of these birds will exclaim enthusiastically: "My, what a beautiful bird." Then there are others who do not particularly care for them at first sight. However, there is an appealing quality about the Dutch Frill and he will, if given a chance soon change the casual observer into an ardent admirer.

I have heard the question asked many times if the feathers were naturally curly, or if they had been given a permanent wave. Hundreds of Dutch Frills have passed through my hands and I have never seen one whose feathers had been artificially curled. In fact I do not think this could be done well enough to defy detection.

The continual breeding for upturned feathers has caused crests to appear upon the heads of some of these birds. This has caused much confusion among those who are promoting the type. However, this writer thinks the crest improves rather than detracts from the appearance. Some of the crests are big and pompom-like with feathers erect, extending upward and outward on all sides from under which the bright, sparkling eyes are seen. Some have flat topped, smooth crests, but even these have a slight upward turn around the edges at the back.

I predict that in the very near future, when it is possible to arrive at a standard of size and uniformity, there will be

classes for Crested Frills much like the classes for other crested type canaries.

Dutch Frills are not small birds, in fact the larger they are the better. They should stand erect on the perch very much after the manner of the Yorkshires.

When mating these birds, it is advisable to have one of them as frilly as possible, it does not matter which one, but the lesser frilled bird should be frill-bred. The procedure is much the same as mating the crested bird to a crest bred bird. If this system of mating is followed the young will be better birds than if both parents were heavily frilled.

As to color, the pairing should be the same as in other type birds, that is light yellow to dark yellow for good feathered, as well as good colored youngsters.

Since the birds of this type are allowed thirty points for well frilled feathers out of a possible score of one hundred points, thus leaving seventy points to be divided between eight other more or less important features, it can easily be seen how a well frilled bird can win over other birds that might possess some features superior to the prize-winning bird.

When nesting, Dutch Frills are rather excitable. For this reason they should be left alone as much as possible. They seem to have a habit of jumping off the nest when one enters the room. The better way of handling this situation is to keep a pair or two of warblers on hand that have raised young. Between the two pairs of warblers, at least one pair is apt to be sitting at the same time the Frills are sitting. If so, take the eggs from the Frills and put them under the pair of warblers that started sitting nearest to the time the Frills started. In most cases the young birds will be well cared for and will grow into beautiful, hardy youngsters under the warblers' care.

The song of the Frill is very pretty, not as musical as the warbler, but far better than the Norwich. For decorative

purposes the dainty Frill, with all its quaintness and charm is an asset to any room.

Points of Perfection in Dutch Frills

Feathers	30
Head and Neck	10
Color	10
Condition	15
Wings	05
Legs	05
Tail	05
Size	10
Position	10
 Total	 100

THE BORDER FANCY

The Border Fancy originated as a type bird in northern England and southern Scotland.

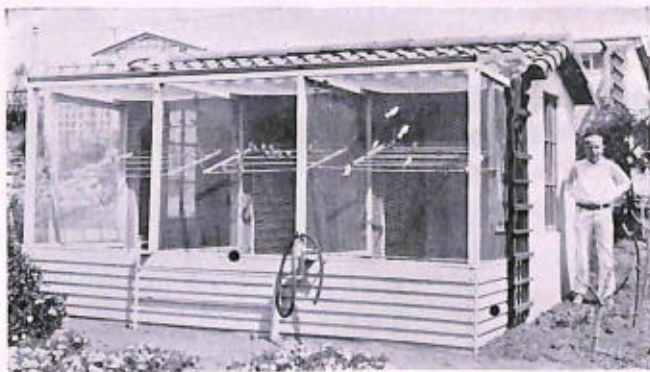
Fanciers on both sides of the border recognized the foundation of a new breed. By carefully selecting birds with certain points and breeding to improve and maintain such points, the keeping of accurate records of their ancestry was necessary. Thus pedigrees were made.

In 1890 these fanciers recognizing that they had developed a new breed met and formed a society for breeding and perfecting it. The Britishers wished the bird to be called Cumberland Fancy, but the ever-watchful Scot could not see the many years he had devoted to breeding this "Wee gem" as he so aptly termed it, given an entirely English title. So a compromise was made and the breed was named Border Fancy. But methinks the canny Scot put something over on his English brother as the term "Wee gem" is still applied to the Border Fancy.



CAGE BREEDING

A model bird breeding room showing how twenty-one cages can be successfully used.



AVIARY BREEDING

A model outdoor breeding aviary.

For many years those who were so wrapped up in the larger type birds could not be made to see the little Border Fancy, but he so consistently bobbed up at the shows and so aggressively won a place in the sun for himself that he soon gained the much deserved recognition that he now so richly deserves.

These little birds differ greatly in type from the larger birds one always has in mind when type birds are mentioned. The Border Fancy is only $5\frac{1}{2}$ inches long. He should stand as near a 45° angle as possible. The head is small and round but correct in proportion to the rest of the body. The eyes are so dark that they are considered black, in fact the eyes of some specimens are really jet black, but always bright and snappy. The neck gently slopes into the shoulders. As in all birds the back and shoulders must be nicely formed, well filled out but not bulky. The chest should be full and firm but care must be taken that it does not have the heavy appearance of the Norwich. He is, as a whole, a well-rounded, symmetrically formed bird.

Unlike the heavier type birds Borders do quite well for trio breeding, that is breeding one male to two females as described in the chapter on breeding.

Owing to the richness of their plumage, these birds are never colorfed, or rather they are never offered for competition at the shows in a colorfed condition, the point being to preserve the natural rich, deep color, and the rich, superior quality of feather.

Border Fancies are easy to breed. They quickly adapt themselves to their surroundings, are never nervous, temperamental or flighty unless under circumstances extremely difficult for any bird. The Border is also a good singer, which is another point in his favor over the larger types. They are good, prolific breeders and almost always make good parents, feeding their young until they are well able to care for themselves.

Points of Perfection in Border Fancies

Head and Neck	10
Body	10
Wings	10
Legs and Feet	05
Tail	10
Color	10
Plumage	15
Position	10
Carriage	10
Condition	10
Total	100

THE SCOTTISH FANCY

The Scottish Fancy, or "Bird o' Circle," as the Scots called their brain-child in the early days, is truly a bird of curves. He was bred to stand on the perch in a half moon position. In order to accomplish this acrobatic feat he appears to be grasping the perch firmly, while continually pushing his body upward.

The present day standard for the length of the bird is about seven inches, but the greatest value is attached to the style, shape, and carriage. The head, a bit nervous and shaky, attached to a long, tapering neck is slightly flat on the top and must be carried forward well below the shoulders.

He must stand in such a position as to allow his tail to swing under the perch, the front of his body, or the breast must be directly on a line with the perch. As he throws his body back he must be able to look directly down and see the tip of his tail. One should be able to vision a straight line in front of the bird from the beak to the tip of the tail, thus causing the back to form a half circle.

The Scottish Fancy is not as neat looking as the sleek, trim, well-groomed Belgian. True he has the smooth feathered head, neck and back, probably inherited from the Belgian. His tightly held wings and tail are carried well, but the feathers of the lower front of the body are loose and extend outward like the Dutch Frill, but they do not curl upward as do the feathers of the Frill.

There is no well defined groove between the shoulders of the Bird o' Circle, as in the case of the Belgian. The back is long but narrower than the Belgian. The shoulders are high and rounded, but they do not have the deep groove between them that is so necessary in the Belgian. He must carry himself with boldness and animation.

Standard of Perfection in the Scottish Fancy

Head	05
Neck	05
Shoulders and Back	20
Tail	05
Size	10
Shape	20
Nerve and Carriage	25
Quality and Condition	10
<hr/>	
Total	100

THE LANCASHIRE

The Lancashire is the largest of all the type canaries. It is also one of the oldest breeds. It is sometimes called the Lancashire crest, or copy. This leads to the erroneous belief that there are two breeds of this type, one with a plain head and another with a crest.

The crest of this giant bird is not like the crests of other crested birds. It extends only across the front half of the

head much like the visor of a cap. The plain head bird is like his brother in every feature, except the head, which instead of being neat and smooth as is usually the case in plain heads of other type canaries, has a rather unkempt appearance. The feathers begin immediately back of the beak and extend about half way back on the head, falling carelessly over the sides.

The bird's head must be large, round and bold. The neck, which is longer than the neck of the Norwich, is full and thick. The body is large and long, more evenly proportioned than the round, chubby Norwich or the long, slender Yorkshire.

On the perch he is upstanding but not as perpendicular as the statuesque Yorkshire, nor does he stand forward like the large, round Norwich. The tip of the flight feathers should meet over the tail coverts but they should not extend beyond them.

In order to keep these birds up to the large standard of size set for them, many breeders have kept their pairing to buffs and yellows. The introduction of green blood seemingly tones up the general condition of the bird, but at the same time has a tendency to reduce the size. Since size is the greatest factor in the development of the Lancashire, no one wishes to sacrifice any part of it. Consequently, with the exception of an occasional mottled bird, we seldom see any but clear birds in this breed.

In mating Lancashires, the procedure is much the same as in mating any of the other crested birds. Very seldom if ever, do we get a really good crested youngster from a pair of canaries if both parents have a crest. Often they produce a large, shaggy crest but ill formed and unsightly. Another strange phenomenon is that this double crest mating often produces birds with bald heads.

To produce good crests in any breed, a crested bird should be mated to a plain head, crest bred bird, that is, a plain head bird of a nest of crest bred youngsters.

Points of Perfection in the Lancashire

Head and Crest	25
Neck	10
Back	10
Wings	05
Length of Bird	20
Quality of Feathers	05
Position	10
Condition	10
Color	05
Total	100

THE LIZARD CANARY

This bird cannot be surpassed in richness of plumage. Because of the rich silky texture of the feathers of the Lizard canary, he has been used in the breeding of other types where feather quality means so much.

The head of the golden Lizard is topped with a golden cap, not a crest. His head is round and smooth. Eye-lashes not only are permitted but are desirable. Nine or ten rows of blank spangles extend from the back of the head directly to the covert feathers of the wings and down the center of the back to the tail coverts. Beak and legs should be as dark as possible. The flight and tail feathers are black, the coverts are dark, almost as dark as the flights. Back and sides are also spangled but not as distinctly as the back, becoming less distinct as they near the center of the breast. The body feathers are rich bronze and should not have any green cast.

The silver Lizard is in every respect the same as the golden variety, except as the name implies, he is of a silver hue instead of golden.

The Lizard should not measure less than five and one-quarter inches or more than five and three-quarter inches in length.

These birds are very good singers, also very good breeders and when they can be had they bring a very high price.

After the first year the black spangles fade into insignificance. This is why one never sees any but young Lizards on the show bench. We do not understand this phenomenon but hope that some day there will be someone of science among our bird lovers who will find a way of breeding these birds that are so unique in canarydom, that will permanently fix the spangles in their plumage. For many years we have been trying to produce a black canary. Because the Lizard canary carries an excessive amount of black color pigment, it is safe to say that when this much heralded black canary puts in its appearance it will be through the blood of the Lizard canary crossed with the recessive white canary.

Points of Perfection in the Lizard Canary

Cap	10
Ground or Body Color	15
Eye-lash	05
Spangling	30
Wings and Tail	10
Breast Marking	05
Markings on Wings and Tail	05
Beak, Legs and Feet	05
Condition	05
Size	10
Total	100

MITES

Mites are the most despicable of all the pests that beset the caged canary. It is not necessary for a bird to have to contend

with these noxious creatures, and when they are discovered they should be gotten rid of at once. Mites will keep a bird so busy picking and scratching himself, he may quit singing and devote all of his time trying to rid himself of his persecutors.

It is much easier to eradicate mites from a single bird in a cage than it is to clean up an aviary full of birds, therefore the better way is not to let them get started. If there is a question as to whether or not the bird has mites, put a white cloth over the cage at night and if they are present there will be some on the cloth the following morning, as mites crawl off of their victims at night. The cloth must be taken off early in the morning and examined before the mites have time to hide themselves in the joints of the cage or crawl back onto the bird.

There are many good powders on the market for the purpose of eradicating mites. The powder is applied directly to the bird's body, especially under the wings and worked well into the feathers. Another very satisfactory way and one that does not frighten the bird so much is a "Quassia Bath." This is made by pouring one quart of boiling water over two tablespoonfuls of Quassia chips and letting it stand over night. Shake well and let it settle again, then pour off the solution, put four tablespoonfuls of this solution into one quart of water and use for the bath water when needed.

DISEASES

+

ASTHMA

CAUSES: Asthma may be caused from drafts, poorly ventilated breeding rooms or from other careless methods of handling birds. The most common cause for this annoying affliction is a dirty cage, allowing the birds to breathe the dust from the stale droppings or musty seeds, setting up an inflamed condition of the respiratory organs.

SYMPTOMS: The bird breathes laboriously, opening his beak as if gasping for air. Sometimes each breath is accompanied by a jerky little squeak. Asthma is very seldom, if ever entirely cured. There may be intervals of apparent relief but there are apt to be recurrences of the dread disease as long as the patient lives.

TREATMENT: Two drops of iodine to one ounce of drinking water daily for three days is often beneficial. A drop of honey applied to the inside of the throat with a feather often brings relief.

Keep the bird warm day and night, about 80° is not too warm. Keep the cage covered at night. An open dish of steaming hot water to which have been added a few drops of eucalyptus oil placed near the cage so the bird can inhale it, is very helpful. Do not put the medicine in the cage as the bird might attempt to bathe in it. Keep this treatment up for a few days. If the bird shows relief, reduce the treatment to every second day until he is well. Feed plenty of greens that have been washed clean and wiped dry. Keep a supply of fresh seeds in his cup.

ANEMIA

CAUSES: This is a condition often found in birds infected with lice or mites, lack of blood forming food, inferior seeds or lack of exercise.

SYMPTOMS: Beak, legs and eyelids have a pale, washed out appearance. They look as if the color had been drained out of them. The body is thin and emaciated. They have attacks of shivering as if cold.

TREATMENT: Feed hard boiled egg-food every day, a little poppy seed sprinkled over the egg is good. This, in addition to his regular seeds. A small piece of orange should be given every day. Also all the fresh green water cress he will eat at one feeding. Leave the fruit or cress in the cage until the bird has eaten all he wants, then take it away. Do this twice each day. Also feed a small amount of cracked oats.

BALDNESS

CAUSES: Sometimes baldness is caused by mites. Sometimes it is caused by another bird in the cage who has the feather picking habit. It also may be caused by skin trouble, resulting from undernourishment.

TREATMENT: There are many good ointments on the market, but for a plain home remedy a drop of iodine on the bald spot one day and a small bit of vaseline rubbed on the next day is about as sure to do the work as any treatment. Use the iodine not more than once every two weeks.

COLDS

SYMPTOMS: The bird sits on the perch with his feathers puffed up, shivering and sneezing occasionally. One of the first symptoms is a thin watery discharge from the nose. A cold is usually accompanied by white diarrhea.

TREATMENT: Touch the nostrils with a small bit of mentholatum on the end of a tooth pick. Dissolve one rounded teaspoonful of Epsom salts in one pint of water, keep some of this solution before the bird for twenty-four hours. During this time take the regular drinking water away from him.

Keep the bird very warm both day and night. Feed as for Anemia. Put a towel over the top and on all sides of the

cage, but leave an opening large enough to admit enough air for the bird to breathe easily. Pour one teaspoonful of eucalyptus oil into one cup of boiling water, put the cup in the opening but on the outside of the cage, so the patient can inhale the fumes. Do not have the cage too closely wrapped during this treatment or the bird might smother.

CONSTIPATION

SYMPTOMS: Lack of appetite, listlessness. It is impossible for the bird to evacuate without extreme discomfort and a jerky movement.

TREATMENT: Milk sop made of raw milk and toast, also plenty of lettuce. Do not leave the milk sop in the cage after the bird has eaten all he wants, neither should the lettuce be left before him until it is wilted. One drop of mineral oil dropped into the bird's mouth is helpful as a lubricant.

DIARRHEA

SYMPTOMS: Loose, watery movements containing a large portion of white matter, the feathers about the vent slightly wet at first, becoming more so as the trouble advances. The feathers become wet and sticky, sometimes completely obstructing the passage. Diarrhea is most often caused by too much green food, mouldy seed or dirty drinking water.

TREATMENT: Cut the feathers away from the vent and carefully bathe the parts in warm water, dry by gently dabbing the tender flesh with a piece of absorbent cotton or a clean soft rag. Apply a soothing ointment or pure table cream to the inflamed parts.

Take the bird's drinking water away from him and replace it with fresh buttermilk. Do not give him any water, but keep the buttermilk before him until he has recovered. Buttermilk is one of the best correctives known for intestinal troubles. Feed seeds only during this illness.

A good medicine for diarrhea is made of one teaspoonful

of powdered charcoal, one teaspoonful of powdered cuttlebone mixed with the hard boiled yolk of one egg.

SORE EYES

Sore eyes, whatever the cause, unless from an injury, should be treated as an infectious disease. A bird found with it should be isolated immediately. Sore eyes may be caused by rubbing the eyes against a dirty perch or cage, or may be the result of a cold or some internal disorder, but whatever the cause, do not neglect it.

TREATMENT: Wash the eyes with a warm boric acid solution, the same strength as that prescribed for human eyes. Put a drop of 10% solution of argyrol on the eyeball. If argyrol is not handy, castor oil is a good substitute. This may sound like a queer treatment, but there is great healing power in castor oil. To insure the healing power of argyrol it should always be fresh, buying it in small quantities makes it easier to keep it fresh.

BROKEN LEGS

TREATMENT: The best splint for a broken leg is made from a quill feather. The feather must be of a size that will fit comfortably around the bird's leg. Cut a small piece of the quill, the length depending upon the length of the leg to be treated. Split this tiny piece of quill down one side, spring it open, place the leg in it and press the quill back together, then with a piece of adhesive tape close up the split quill. Put the bird in a small box or cage without any perches.

Place the seeds and water on the floor of the cage where he can eat and drink without having to use his legs to reach the containers. Cover the cage with a light cloth to shut out any activity that might be seen by the bird. This would cause him to move about, thus preventing the bones from knitting together. The leg should heal in about five days.

SCALEY LEGS

Scaley legs are usually caused by minute parasites becoming embedded in the joints, or by improper diet or dirty perches. Sometimes very old birds will have scaley legs, also young birds that have not been properly cared for will have legs quite rough and scaley.

TREATMENT: Wash the legs in warm water, letting them soak for about five minutes to soften the scale. Dry them thoroughly on a soft absorbent cloth, then gently rub in a small amount of vaseline. It may take several days to effect a cure but do not get impatient and attempt to pick the scales off, as it is painful to the bird.

SORE FEET

The principal cause of sore feet is dirty cages. If droppings are allowed to accumulate on the floor of the cage, they will stick to the bird's feet and cause an inflamed condition. Mosquitoes sometimes bite the legs and feet of a bird which causes sores to appear. In localities where these pests are prevalent, a mosquito net should be put securely around the cage at night.

TREATMENT: Wash the affected parts and put a drop of iodine on them, then treat as for scaley legs.

RICKETS

Rickets in birds is much the same as it is in human beings. It rarely occurs in birds that are bred in rooms or aviaries that have bright, sunny exposures, but is often found in birds that are bred in dark, dingy, unsanitary quarters.

SYMPTOMS: Weak legs and wings that seem to sprawl out in all directions. The chances are that these youngsters will never overcome their trouble. The best thing to do with them is to destroy them, as they will grow into deformed little bits of life that will always be an eyesore to their owner and a burden to themselves. The parents should be immediately

turned into a flight where they will have plenty of sunshine and exercise. Rickets is not an inheritable disease and if conditions are right, there is not apt to be any more young with this affliction.

SKIN TUMORS

Skin tumors in birds are caused by an enlarged pore of the skin which stops the flow of natural secretions, thus causing an accumulation of secretions that gradually form a thick cheesy substance under the skin. This condition is comparable to the closing of a sweat gland in a human being, causing the sweat to accumulate in the gland and form a tumor.

TREATMENT: When the tumor has enlarged sufficiently to cause the skin to be drawn tightly over it, it can be easily taken out. Sterilize a safety razor blade, cut the skin and lift the cheesy substance out. Then make a tiny swab by tightly twisting a small piece of absorbent cotton around a tooth pick, wash the wound with sterile water and place the bird where he will not be disturbed until the wound heals.

EGG BINDING

Egg binding is one of the things that one has to contend with occasionally and it sometimes happens, even with birds that have been very carefully fed and cared for. In some cases, over-feeding of fattening foods is the cause, in other cases not enough exercise, or it may be that not enough green foods are being fed. But whatever the cause, when this condition arises the bird must have immediate attention.

It is not a necessary affliction. Some breeders raise canaries year after year and never have a case of egg binding. This is proof that egg binding is usually because the breeder is at fault, rather than his birds. Most people who have had no experience raising birds are so apt to give them bits of cake or other tidbits, until they have the bird in such a fat condition that it is impossible for her to lay an egg. On the other

hand there are those who even, though they love their birds, try to see how cheaply they can get their seeds. This thrifty disposition is to be commended, but try it on something other than your birds. When bargain seeds are offered by the dealer, there is usually a reason for it. The reason may be fair enough, but one never knows. It is best not to take chances.

Instead of trying to see how cheap one can buy seeds, the better way is to try to buy the best seeds possible. Do not go bargain hunting for bird seeds. Cheap seeds are often seeds that are so old they have lost some, or all of their nutritive value. The result is that your birds are not properly nourished. When the ordeal of egg-laying comes to the female canary that has been fed inferior seeds, she is apt to be too feeble to go through with it.

Females should be allowed a nice large flight cage during the winter months, as the exercise is very helpful in developing the muscles. Where one has only a pair of birds in the house and does not have an outdoor flight, it is a good idea to let the female have the run of the house for an hour each day during the winter.

Soft shelled eggs are another serious cause of egg binding and are the result of too little lime or mineral content in the bird's diet. Minerals can best be supplied by feeding fresh green food. Cuttlebone is not only a food but the use of it is one of the simplest ways of getting the bird to eat lime. Egg shells from the family breakfast table are almost entirely composed of lime, and all birds like them. Dry the shells in the oven until they are crisp and brittle. They may be fed at all times and should be fed regularly during the breeding season. Remember the old slogan: "An ounce of prevention is worth a pound of cure." Some fanciers are afraid to give their birds eggshell, believing that the taste of the shell will cause them to acquire the disgusting habit of eating their own eggs. I do not believe this is true, for I have always fed eggshells to my birds and have never had one to eat her

eggs. Crisping the eggshells in the oven changes the taste entirely and unless some of the sticky white is left in the shell, there is nothing to connect the taste of them with the taste of the bird's own eggs.

SYMPTOMS: Egg binding is easily diagnosed. The symptoms are practically the same in all birds. In the first stages the hen will sit on the perch, feet apart as though trying to rest the abdomen on the perch. The feathers are puffed up and the eyes seem drawn and strained. As the trouble progresses, she will stay on the nest or huddled on the floor of the cage. She will make no effort to fly up to the perch. If she should do so, she would only succeed in miserably bumping around on the floor.

TREATMENT: Give two drops of mineral oil in the mouth, then, holding the bird on its back, with the head pointing from you, carefully inject the tip of a medicine dropper containing warm mineral oil in the vent. Administer two drops of the oil, but be very careful not to break the egg by forcing the medicine dropper too far into the body. Before inserting the dropper make sure the oil is all the way down to the point, otherwise, air will be forced into the bird, making her more uncomfortable, or may even break the egg.

After the above treatment put the bird on a hot water bottle that is quite hot. However, first wrap a layer of bath towel around the water bottle. Remove the perches and the bottom from a small cage, and put the cage over the water bottle which will then serve as the bottom of the cage. Put a cloth over the cage, but leave an opening large enough to keep the bird from smothering. If this treatment is given in the first stages of egg-binding, it is almost sure to be successful. If it is neglected until the hen is exhausted, and has not strength left with which to cooperate with the treatment, it may be of no avail.

Do not try to breed the bird again for fully a month, or until you are sure she has regained her strength.

See next two pages
for other books

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