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The common cage birds fall into two main groups, the passerines including canaries and finches, and the psittacines including budgerigars, parrots, lorikeets and cockatoos. Most of these birds are seed-eaters and the digestive processes are similar.

Before dealing with the individual types of birds let us consider the general processes of digestion in seed-eating birds. The beak is adapted to remove the hard husk of the seed. The de-husked kernel is swallowed and passes into the crop. The crop is normally filled twice daily, in the morning and the evening.

From the crop, seed passes into the proventriculus where it is subjected to the actions of the digestive juices and thence to the gizzard. The gizzard is a very muscular organ with a hard horny lining and should contain pieces of sharp grit. In this organ, the seeds are ground up and pass into the intestines where the nutritive components are absorbed.

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MANAGEMENT AND
DISEASES OF CAGE BIRDS
By P. M. A. HARWOOD, M.R.C.V.S., Senior Veterinary Officer

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face. Any looseness, wateriness or brown or green colouration is abnormal, as is a very dry powdery dropping.

MANAGEMENT AND DISEASES OF CANARIES

The canary is a bird of the finch type which by a process of selection has reached a state of domestication. Many types and varieties have been evolved and it is not proposed to discuss points of the various breeds of canaries in this article.

Canaries may be kept in cages or small aviaries but do not breed very successfully in communities. For successful breeding the following methods are adopted:

- Wire-fronted breeding cages 12in. high by 12in. wide by 24in. long are used. A removable wire partition divides each cage into two compartments.
- Male canaries commence quarrelling as soon as they approach maturity and must be kept individually.
- Females will live together in communities and are usually brought into the breeding cages three to four weeks before the commencement of breeding operations in September or October.
  - The male is placed in one compartment; the female in the other.
  - After several days, when he is seen to be "displaying" to the female, the division is removed, care being taken to watch that he is not markedly aggressive.
- Nests may be constructed of round polish tins hung in the upper half of the cage. Strips of hessian, pieces of cotton wool and dry grass are provided as nesting materials.
- Incubation takes 13 to 14 days and is carried out by the hen during which time she is fed by the cock. Both parents feed the young birds which are independent 36 days after hatching.
- At this stage the young birds should be removed and put into a large flight cage or aviary until March or April when it is advisable to separate the males.

**Sexing.**

Although the determination of sex in canaries is largely a matter of experience, the following points may help the beginner:

- The male has a stronger, more thick-set and "masculine" head. He is usually a little larger and more heavily built. In the male the vent is "proud"—that is it protrudes slightly from the underline.

**Feeding.**

For the maintenance of canaries throughout the year the following seed mixture is very suitable:

- Plain canary seed—7 parts (by measure).
- Rape seed—1 part (by measure).
- Hulled oats—1 part (by measure).
- White millet—3 parts (by measure).
- Linseed—4 parts (by measure).

In addition small quantities of fresh greenstuffs such as lettuce and thistles should be offered daily. Any stale or wilted greens should be removed at once. Cuttlefish bone should be available at all times as should some sharp grit such as coarse river sand.

Breeding canaries require special feeding. To the usual seed mixture a little panicum seed should be added with a small quantity of niger seed twice weekly. Egg food composed of a crumbly mixture of milk arrowroot biscuits and hard-boiled egg yolks must be given while the young birds are being reared. This food is invaluable to bring the birds into top condition just prior to mating.

**Diseases of Canaries.**

1. **Redmite**—This pest is associated with dirty cages. The mites harbour in cracks and crevices during the day time coming out at night to suck blood from the birds. They cause weakness, anaemia and sometimes death and frequently cause sitting canaries to leave their eggs. The cure is to thoroughly clean and disinfect the cages and to avoid introduction of the pest in cages, travelling boxes, show cages, etc. A most effective remedy is to immerse the cages in boiling water. The surrounding areas should be painted with creosote or
sprayed with an effective insecticide such as Dieldrin or Chlordane after all cages and birds have been removed.

2. Paratyphoid—Losses are quite common particularly in young stock due to infection with organisms of the salmonella group. Birds are usually found dead and the disease may assume epidemic proportions. Scrupulous attention to the cleanliness of the drinking and feeding vessels is an important factor in control but attacks may follow a lowering of the bird’s resistance due to chills, draughty cages, unfavourable weather etc. If an outbreak occurs, cages should be thoroughly cleaned and disinfected and a 0.2 per cent solution of sulphamezathine (a drug frequently used by the poultry industry) given in place of drinking water for four to five days. Earthenware, china or glass drinking vessels must be used.

N.B.—Sulphamezathine is usually sold as a 16 per cent. solution, a 33\(\frac{1}{3}\) per cent. solution, or in half-gram tablets. To make an 0.2 per cent. solution, add 8 drops of 16 per cent. or 4 drops of 33\(\frac{1}{3}\) per cent. solution to 1 fluid ounce of water. Alternatively, dissolve one half-gram tablet in 8 fluid ounces of water. (There are 20 fluid ounces in a pint and a medicinal tablespoonful is half a fluid ounce.)

3. Egg-binding—Usually occurs during cold weather or in immature badly-conditioned stock. Symptoms are that the hen canary which has previously been going about the business of nesting is found sitting fluffed up in the corner of the cage. One or more eggs may have been laid before egg-binding occurs. It is due to spasm of the oviduct. The following treatments are recommended:—

(a) The bird is put in a small box with a fly wire bottom which is covered with flannel, the box is gently steamed from a kettle and placed in a warm place (80-90°F). This treatment usually relieves the condition promptly and the hen may be returned to the breeding cage as soon as the egg is laid.

(b) Two drops of warm paraffin oil are placed in the vent and a further two drops given by mouth. Heat is also advisable.

4. Scaly Leg—Scaly leg is due to a mite of the genus Cnemidocoptes. Symptoms are that the scales on the leg are rough
and raised and have a powdery appearance. Cure is effected by painting the legs at three-day intervals with olive oil.

General Points in Canary Management.

1. Perches should be of good sized dowel (¼-inch or more). In the aviaries, branches will provide the necessary toe exercise for young birds in addition to dowel perches.

2. All birds hate wet and draughts.

3. Water and food dishes must be placed so they do not become contaminated with droppings. If automatic feeders are used, husks must be blown off regularly; with open dishes feed little and often, keep the husks blown off and always discard stale, wet or contaminated seed.

4. The cleaner the birds are kept the better will be the results.

5. Avoid redmite by constant vigilance and by a rigid quarantining of new birds. Disinfect all nests and cages after the breeding season.

MANAGEMENT AND DISEASES OF FINCHES

Finches are small seed-eating birds many of which are native to tropical Northern Australia.

To thrive, they require protection from cold, wet and draughts. Finches agree well with each other and probably do best in groups in planted aviaries in well-sheltered positions. A very suitable type of aviary for finches is one with solid walls on three sides, roofed over three-quarters of the way, with the open front facing north. Evergreen non-poisonous shrubs with close foliage such as ti-tree, lucerne tree, dwarf cyprus etc., should be planted in the open part to encourage insect life. The nests should be put under the covered roof—finches breed after, and not during, the rains and wet nests are fatal to the young. Good finch nests are made from cylinders of cardboard about 4in. in diameter suspended at an angle of 30°. Dry grass, hessian and cotton wool should be provided for nesting materials.

Feeding of Finches.

The basic seed mixture for feeding finches is—

- Panicum seed—7½ parts (by measure).
- Plain canary seed—1½ parts (by measure).
- White millet—1 part (by measure).
Larger finches also require a small amount of hulled oats. In addition, green-stuff and flowering grasses should be given with cuttle fish bone and plenty of gritty sand available.

With many finches good breeding results can be obtained only when a certain amount of live insect food is given. In a large well-planted aviary the birds may find most of this for themselves but nearly all finches relish white ants when rearing young.

Both sexes of most finches share incubation and feeding of the young. Young finches are plain-coloured when they leave the nests, attaining the coloured plumage a few weeks after they are independent of their parents.

Sexing.

Many species of finches are commonly kept in captivity. It is not intended to deal here with the individual types. In most species the sexes are coloured differently and all finches can be sexed readily by an experienced breeder.

Diseases of Finches.

1. *Redmite*—This is a most serious pest when it gains entry to an aviary. To guard against it, destroy all old nests by burning and adopt strict quarantine measures with new introductions.

2. *Paratyphoid*—Causes sudden deaths, usually associated with overcrowding and bad hygiene. To control keep water and seed scrupulously clean and remove the surface sand and replace with clean sand each year. If an outbreak occurs give 0.2 per cent sulphamezathine solution in the drinking water.

3. *Enteritis*—Follows the feeding of stale or unsuitable green stuff. Many common garden plants are poisonous to finches—violets, jonquils, gladioli, etc. Remove the cause and give fresh boiled water daily. Symptoms are watery, greenish droppings and soiled vent feathers.

4. *Chills*—Deaths often follow spells of cold wet weather in an unprotected aviary. Careful selection of the site of the aviary will prevent losses from this cause.

MANAGEMENT AND DISEASES OF BUDGERIGARS

Budgerigars are small birds of the parrot family. They live naturally in flocks and do well and make the best display when kept in communities. Any aviary which gives protection from unfavourable weather and cold winds will suit budgerigars, and single birds if properly cared for in cages live for years and often learn to talk. An almost infinite range of colour variations exists.

Budgerigars breed in wooden nest-boxes 6in high by 6in. wide by 9in. deep. The floor should be slightly hollow and the eggs are laid on the bare wood. The entrance hole should be 1½in. in diameter and near the top of the front of the box. A small perch is fixed just below the entrance. Always provide twice as many nest boxes as there are pairs of budgerigars in the aviary. The hen incubates the eggs being fed by the cock, both birds feed the young.

Note.—In spite of the common term “lovebird,” budgerigars tend to be rather
promiscuous. When breeding for a particular colour variety the pairs must be kept separately.

**Sexing.**

Budgerigars are sexed according to the colour of the cere which is the bare area of skin just above the beak. This is a rich blue in the male and chocolate brown in breeding females. In young females the cere is a pale watery blue. Young birds just out of the nest do not vary much in the colour of the cere—when handled males bite gently or not at all, females bite hard and hang on. Budgerigars reach sexual maturity at an early age.

**Feeding Budgerigars.**

A good seed mixture for budgerigars is:

- White millet—6 parts (by measure).
- Plain canary seed—2 parts (by measure).
- Panicum seed—1 part (by measure).
- Hulled oats—1 part (by measure).
- Greenstuff and flowering grass should be given at all times and in quantity when the birds are breeding. Budgerigars require large quantities of cuttlefish bone, plenty of sharp grit, and benefit from a box of loamy soil of which they will eat a good deal. When breeding, a quantity of hulled oats may be increased up to one quarter of the total mixture.

**Diseases of Budgerigars.**

1. **Redmite**—As with all small birds, redmite is easily the worst pest affecting budgerigars. Particular attention must be paid to the nest-boxes and these should be removed and dipped in boiling water regularly. Strict quarantine and general cleanliness are important.

2. **Enteritis**—Due to soiled green feed or contaminated water. Symptoms are diarrhoea and soiled vent feathers. Scrupulous cleanliness, removal of the cause and freshly boiled drinking water are the remedies.

3. **Paratyphoid**—Usually causes sudden deaths. Use 0.2 per cent. sulphamezathine in the water and attend to hygiene.

4. **Egg-binding**—This is similar to the condition described in canaries and is treated in the same way. Egg-bound hens may remain in the nest-box and will soon die if not promptly detected.

5. **Coccidiosis**—Associated with damp, dirty, overcrowded conditions. Symptoms are of listlessness, ruffled feathers and blood-stained droppings. Treat with 0.2 per cent. sulphamezathine solution. Clean dry floors to the aviary will prevent the condition.

6. **French moult**—This condition is seen principally in fledglings. The primary flight feathers and tail feathers do not develop normally but are stunted and deformed and continually moulted without being replaced by normal feathers. The body has normal feathering. French moult is usually seen in budgerigars kept on the colony system and allowed to breed unchecked. It is definitely associated with degenerate stock and overcrowding and redmite may also be a contributory cause. As the feather follicles are affected beyond repair, there is no cure for the condition. Affected birds (crawlers) should be destroyed, all nest-boxes should be removed for three months and disinfected before re-introduction. The stocking of the aviary should be reduced.

7. **Vitamin A deficiency**—Usual symptoms are of paralysis of the legs. The bird may be able to fly normally but cannot
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MANAGEMENT AND DISEASES OF COCKATOOS

Birds of the cockatoo family—galahs, Major Mitchells, corellas and sulphur-crested cockatoos are kept as pets, male birds particularly being in demand as talkers. They are usually kept in wire parrot cages or at partial liberty with a cut wing.

Handling Cockatoos.

Hold the bird with the thumb close under the lower bill and the fingers around the back of the neck. Leather gloves are advisable.

Cutting Wings.

To prevent cockatoos from flying, cut the long primary flight feathers with scissors, on one wing only, close to the rear edge of the wing. Remember these feathers are replaced at each annual moult usually in mid-summer.

Excessive Screaming.

This unfortunate habit is very prevalent in birds of the cockatoo family and is mainly due to boredom. Handle the bird frequently to make it tame, cut its wing and let it out of the cage to walk around as much as possible. Give it branches or pieces of soft wood to chew up in the cage.

N.B.—All cockatoos scream towards evening.

Feather Plucking.

This habit is due partly to boredom and partly to incorrect feeding. Let the bird out of the cage frequently, give branches to chew and put a piece of fresh turf in the cage. This will provide the bird with some occupation and will also supply valuable minerals. Make sure the diet is adequate.

Teaching to Talk.

Young birds taken from the nest and reared by hand make the best talkers. Repeat the phrase to the bird very frequently, particularly after it has been fed and is restful. Do not cover the cage. Paradoxically hens show little talent as talkers. Splitting the tongue is a cruel practice and has no value whatsoever.

Hand Rearing.

The best stage to start hand rearing cockatoos is when the body is fully feathered and the tail feathers are just starting to grow. Feed on a mixture of "Farex" infant food moistened with watered milk with a few drops of shark liver oil added. The mixture is fed twice a day with a spoon at first—later the bird will pick up the food for itself. When the tail feathers are fully grown start to feed with soaked, crushed wheat and hulled oats for a few days before giving dry seed. If oatmeal is used in place of Farex as a rearing food add ground cuttlefish bone as a source of calcium, or rickets will occur.
Feeding Cockatoos.

The following seed mixture should be used:

- Sunflower seed—6 parts (by measure).
- Whole oats—2 parts (by measure).
- Whole wheat—1 part (by measure).
- Yellow maize—1 part (by measure).

Peanuts may be given occasionally, but sunflower seeds are much preferred. Make sure the other grains are being eaten before replenishing the supply. Greenstuff, cuttlefish bone and grit are essential and a certain amount of fresh fruit and soaked bread tend to prevent feather plucking.

Sexing Cockatoos.

In males of the galah, Major Mitchell and sulphur-crested species, the iris of the eyes is dark brown or black—in females it is light brown or orange. This difference does not occur in fledglings. Male corellas are noticeably larger and more robustly built than females.

Diseases of Cockatoos.

1. Pneumonia—The most frequent cause of death in cockatoos especially galahs. Symptoms are that the bird appears ill with ruffled feathers and vomits a mucoid substance which adheres to the feathers of the breast. Affected birds are often excessively thirsty. Pneumonia frequently follows wetting. In wild birds the feathers are coated with a water repellent oil which prevents wetting of the skin. On an artificial diet this substance is often not present. Treatment is very difficult as most drugs given by mouth are vomited. Extreme warmth (80 to 90°F) day and night is helpful, with complete protection from draughts. Very small quantities of 0.2 per cent. of sulphamezathine given frequently may be retained long enough to be of value. Valuable birds may sometimes be saved by the injection into the breast muscle of 5 mgms. of aureomycin. This treatment must be carried out by a veterinary surgeon.

2. Enteritis—This condition is due to incorrect feeding or dirty conditions. Symptoms are of illness with ruffled feathers, green or brownish diarrhoea and soiling of the vent feathers, complete loss of appetite and increased thirst. To treat, give warmth and protection from draughts and give up to 1 teaspoonful of fluid magnesia daily. Remove the seeds and offer freshly-soaked bread. Limit water consumption until droppings are normal. Return to full ration of seed slowly.

3. Overgrown Beaks—A cockatoo’s beak grows rapidly and constantly throughout its life. Unless it is being worn away by chewing, the beak becomes overgrown and distorted and interferes with the bird’s ability to feed. In mild cases give pieces of hardwood, mortar or bones to chew. In severe cases trim back to shape with nail clippers.

CARE AND MANAGEMENT OF PARROTS

Parrots are kept either for purposes of display in aviaries, or singly in cages as
talkers or whistlers. The majority of
native parrots are quite unsuited to life in
a small cage—a certain amount of flying
exercise is essential to health.

All parrots tend to be quarrelsome when
kept together. They should either be kept
in individual pairs or in large aviaries with
plenty of perches and feeding stations to
avoid bullying. Successful breeding will
only take place where parrots are kept in
individual pairs.

Feeding of Parrots.
The following seed mixture is suited for
the needs of the majority of parrots:—

- Sunflower seed—5 parts (by measure).
- Oats—3 parts (by measure).
- Plain canary seed—1 part (by measure).
- Panicum seed—\(\frac{1}{2}\) part (by measure).
- White millet—\(\frac{1}{2}\) part (by measure).

Whole oats are suitable for the larger
parrot but the smaller types require hulled
oats. For grass parrots use this mixture:—

- Plain canary seed—5 parts (by measure).
- White millet—2 parts (by measure).
- Panicum seed—1 part (by measure).
- Hulled oats—1 part (by measure).
- Sunflower seed—1 part (by measure).

In addition, greenstuff must be given
with plenty of fresh fruit (apples are very
good) and leafy twigs to chew. Cuttlefish
bone and sharp grit are essential to par-
rots.

Diseases of Parrots.
1. Psittacosis—This condition is usually
seen in parrots that are newly acquired
and have not yet settled down. It is very
unusual to encounter the disease in par-
rots that have been bred in aviaries or
which have been kept in captivity for any
length of time. Symptoms—the bird sits
ruffled up with its head “tucked under its
wing” and takes little notice when ap-
proached. The eyes are partly closed and
the feathers stand up on the back of the
head. The vent may be soiled. When the
bird is taken in the hand the breast
muscles will be found to have wasted away
and the breastbone feels sharp and bare
of flesh.

Psittacosis has been found in most types
of birds in addition to parrots and is capa-
ble of affecting humans. Any bird sus-
ppected of being diseased should be de-
stroyed and burned immediately and the
cage thoroughly disinfected. It may be
mentioned here that contrary to findings
overseas there have not been many human
cases of the disease in Australia and ap-
parently only one human death has been
reported. In view of the large extent to
which parrots are kept in this country one
must conclude that the risk of humans
becoming infected from birds is not very
great here. Quarantine regulations pre-
vent the importation of parrots (and
other birds) from overseas and this meas-
ure has probably prevented the deadly
form of the disease from becoming estab-
lished in Australia.

2. Injuries—Untamed parrots are very
timid creatures and are very apt to bang
their heads when startled. Many deaths
occur from this cause, the injury usually
being to the skull just above the beak.

3. Pneumonia—Vomiting of mucus is
the most frequent symptom. Treatment is
warmth and small quantities of 0.2 sul-
phamezathine solution.
4. Enteritis and Paratyphoid—In parrots enteritis may be due to incorrect feeding, feeding spoiled greenstuff or due to infection of organisms of the salmonella group, this latter form is highly infectious. Symptoms are of copious green or brown watery diarrhoea, listlessness, ruffled feathers, loss of appetite and excessive thirst. Remove the cause and give boiled water to which is added 1 teaspoonful to the ounce of fluid magnesia. If paratyphoid is suspected give 0.2 per cent. sulphamezathine in the drinking water. Strict hygiene is the best preventative.

MANAGEMENT OF LORIKEETS

Lorikeets are birds of the parrot family which naturally feed on the nectar of native blossoms and native fruits. The best known member of the group is the Blue Mountain lorikeet or parrot.

Being specialised feeders they do not take kindly to a diet of bird seed. To thrive, lorikeets should be fed on Farex infant food or milk arrowroot biscuits well wetted with the following solution—

1 part of honey, 1 part new milk, 2 parts water (warm and blend together).

Feed in glass or china dishes and give fresh, daily in winter, twice daily in summer. In addition fresh fruit should be fed ad lib. and greenstuff must be given.

The droppings of lorikeets are normally very fluid. If kept in a cage, dry sawdust should be used on the floor. Lorikeets are subject to the same diseases as parrots. They are very susceptible to enteritis if the food is left to sour.

OTHER CAGE BIRDS

1. Quail.

Quail are kept in mixed collections of birds. They feed off the ground and collect spilt seed. Quail are related to the common fowl. They should be fed on white millet, plain canary seed and panicum seed and are fond of insects. They must be fed on the ground. Young quail are susceptible to blackhead and should be reared on clean ground. Baby quail easily pass through half inch netting. Insects (especially meal worms), are essential to rear quail. Dust baths should be provided.

2. Doves.

Doves are usually kept in mixed displays of birds. They agree well with birds of all kind but may quarrel among themselves. They are fed on 8 parts white millet, 1 part panicum seed and 1 part hulled oats. Plenty of sharp grit is essential. Doves breed quite readily in captivity building a nest of twigs on top of some level surface. Platforms edged with beading are best. Put twice as many platforms as there are pairs of doves. When rearing young, doves produce a secretion from the crop known as pigeon milk. Doves are susceptible to build-up of parasites and disease-causing germs in stale ground and require clean fresh sand floors.

GENERAL HINTS ON AVIARY MANAGEMENT AND CONSTRUCTION

1. Construction.

(a) Build the aviary so that it is large enough to allow the birds plenty of exercise (1 cu. ft. minimum per bird of finch size).

(b) Protect the birds from unfavourable weather and winds and allow access to sunlight. Most favourable exposures are east to north.

(c) Avoid projecting surfaces where droppings accumulate.

(d) Doors should open outwards.

(e) Arrange perches so birds roost under shelter.

2. General Management.

(a) Avoid overcrowding. A few healthy active birds make a better display than a lot of dull, dispirited ones.

(b) Remove and isolate sick birds immediately. It gives them a better chance of recovery and reduces the spread of infectious diseases.

(c) The cleaner the aviary the healthier and happier the birds.

(d) Greenstuff keeps fresher if the stalks are placed in a jar of water.
(e) Cuttlefish bone should be wired to the netting at the end of a perch. It will keep clean and last longer.

(f) Mice can be controlled only by (1) keeping split seed off the ground (2) hanging seed containers from wires (3) constant use of a rodenticide containing Dicoumarin which is relatively harmless to birds. This should be placed under a box which is raised $\frac{1}{2}$in. on one corner. Mice pass easily through half inch netting.

NOTE.—The keeping of birds is subject to several regulations and it is advisable to be aware of these.

A large proportion of the native birds are protected and it is an offence to keep them in captivity. In addition several birds are declared vermin and the keeping of these is also prohibited. Check with the Chief Warden of Fauna and Chief Vermin Control Officer to ensure that you do not break the regulations.
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