Basic Avian Husbandry

AW Gestier*

The caged bird industry is an intensive animal industry - the principles of intensive animal management must be applied. Caged birds cannot be considered to be in a natural environment. Birdkeepers must be aware of the problems that result from neglect of management principles.

Fundamental Principles of Aviary Management

1. Aviculture is farming - farming by definition is productivity-oriented animal keeping. The avicultural "farm" can vary immensely between owners but still conceptually has all of the significant components of a farming operation.

2. Productivity is the lifeblood of the farm - without productivity the aviary will experience hardship. Hardship will require outside resources to be used or the aviary closed.

3. Time and cost must always be justified - regardless of the manner of the individuals justification there must always be thought applied to this concept.

4. The flock always takes precedence over the individual - individual diseased birds are still diagnosed and treated, but the emphasis is always carried toward the prevention of the occurrence of the problem in the future. Protection of the group from infectious or management-induced disease is always the primary concern of the farm.

5. Culling replacement is fundamental for improvement. Exotic birds should not be excluded from this basic animal production principle. Based on the individual aviculturist's defined production parameters and criteria desired, those individual birds not meeting desired goals should be culled.

6. Stock management protocols are dictated by productivity parameters - declining productivity should be followed by diagnostic evaluation by the aviculturist as well as their attending veterinarian. A management plan to improve production and monitor improvement should be instigated .

7. Productivity success will be best achieved by restriction to one or a few species - varying disease susceptibilities, management requirements and nutritional needs will inject more variables into the operation from which failure or complications can arise.

8. Preventative medicine is more desirable and economic than symptomatic medicine - it will be less costly to establish the preventative mechanism to avoid disease than to treat it medically.

9. Most flock diseases are a symptom of management flaws and are not a viable avicultural diagnosis unto themselves. Both the aviculturist as well as the veterinarian must be convinced that the conventional companion animal stance focusing on diagnosis, treatment and control; of clinical disease as the sole objective is inappropriate to avicultural medical management. This approach frequently fails to recognise the strong relationship between management and disease.

10. Drugs are not a substitute for sound management - use as little drug therapy as possible to achieve

* **Vetafarm, Lake Road Veterinary Clinic, 327 Lake Albert Road, Wagga Wagga NSW 2650**

production goals.

Cage Construction

Historically bird cages are made from galvanised metal and wire mesh - are these the most suitable materials for Australian conditions?

Under galvanised iron sheets the air temperature becomes much greater than the bird would experience in the wild, sheltered in a tree! Design of aviaries must take temperatures into account. Shadecloth, double roofing, insulated roofing, painting and aviary positioning to take advantage of natural shade can help reduce heat stress on the birds.

Materials such as double diamond black mesh fish netting, polycarbonate sheeting, timbers and brush can produce aviaries that are more bird friendly than the typical least cost galvanised and wire cage that abound today.

Cage flooring will depend on the function of the aviary. Display cages probably look better with gravel or sand floors. Breeding cages need a concrete floor to allow easy cleaning. The all-important factor is drainage - the cage must drain rapidly and dry out rapidly. In sand/gravel-floored aviaries under drainage is easy to incorporate, agricultural pipe or rubble drains will work efficiently. Concrete floored aviaries should drain to the front to reduce dampness under the shelter. Ensure that the waste water is drained well away from the aviary.

Birds can tolerate cold but don't like drafts! Build shelters that offer wind protection yet allow air exchange to occur. Face aviaries NE-NW, use sunlight to dry cage floor and aid in disease control. Cover western (or prevailing wind direction) end of aviary to reduce drafts. Use shade trees, hedges etc to break the wind and give some temperature control.

Birds startle easily. Design aviary to allow birds to see approaching people or other animals. Ideally a 360 degree vision range gives the birds a sense of security - this is difficult to do in most circumstances. Completely enclosed aviary compounds are the opposite approach and also work well.

Cage Size

A very contentious issue. The cage size is probably more determined by the bird species than bird size. Australian birds don't breed well in confined cages, they seem to need the stimulus of flight to do well. Many exotic species will breed well in a cabinet situation regardless of their size. For Australian birds, a 4-5 metre flight seems to be the average. Cage width of 1-1.5 metres and a height of 1.8-2 metres is common. Cage height should be maximised to give the birds the security of looking down at people.

Suspended aviaries have become popular and have proven easy to maintain. Many birds will readily accept suspended cages while others never settle down - birdkeepers should match cages to birds.

Predators

Predator induced trauma is a common occurrence in Australian aviaries. Efforts should be taken to minimise this problem. Hawks, owls, cats and rats pose the biggest risk with mice, snakes and thieves adding to the problem. Completely enclosed roof, mesh over roof, electric outriggers, fully enclosed compounds, free-roaming guard-dogs, etc etc are used to improve security. The method employed will depend on the situation and resources available.

Water Supply

The water supply to most aviaries is a disgrace - open terra-cotta dishes placed in the sun under a perch is the norm. Historically, water systems have yielded more significant sources of pathogens than any other

environmental element. The range of diseases seen arising from the water are generally restricted to those of a bacterial, mycotic or chemical nature. Strict sanitation should be paid to water quality in the aviary. Points of stagnation, exposure to open air, back flow and potentially toxic materials, such as lead, should be identified and eliminated. Position bowls above perches to avoid faecal contamination. Do not place food and water bowls side by side as this encourages food dunking. Hooded bowls will dramatically reduce bowl debris. Use an effective disinfectant eg Avisafe (Vetafarm), in an appropriate manner.

The use of automatic watering systems is a must when any number of birds are kept. Design of the watering system must allow for regular flushing of the dishes and adequate drainage of the waste water. Ideally we should use deep narrow dishes to keep water cooler and reduce faecal contamination. Riser systems are not ideal as they allow for organisms to pass along a bank of aviaries. Containers are also important - the unglazed terracotta again the most common yet least suitable. Glazed pottery, stainless steel and glass are acceptable - terracotta, plastic and galvanised metal are generally not suitable.

Failure to recognise these aspects of water management can lead to a "chronic disease" syndrome. This is an all too rarely recognised, low level aviary problem where sporadic and persistent enteritis, poor weight gain and occasional episodes of bacterial or fungal disease is accepted as an unavoidable part of bird breeding. Aviary health status analysis has consistently shown that water bowls are the number one source of bacterial/mycotic exposure for the aviary as a whole.

Food Containers

Although second to water as a potential source risk to aviary health and productivity, food management is as integral part of aviary preventive flock medicine. Food management is distinctly different to nutrition.

Birds are generally fed a seed mix and a range of soft foods. There needs to be containers suitable for both! Dishes and hoppers are mostly used for seeds, the trend is toward hopper feeding which reduces feeding time. Cafeteria style and seed blends are used in hoppers. There is no great advantage of one over the other. Hoppers should be fitted with waste trays to reduce seed scatter. Open bowls are common and adequate provided they are cleaned regularly and not permitted to get wet. Deep bowls will reduce the amount of seed scatter. A separate site and container should be used for treats, greens and soft foods. This must be cleaned daily as damp feed will spoil rapidly and promote the growth of *Aspergillus*. Ceramic glass and stainless steel are the best. Small quantities are fed which will be consumed quickly. Once the birds are regularly taking treats from these containers it is easier to introduce them to new foods as they are used to different foods at this site. The most common sources of bacterial and mycotic food-borne illnesses are:

Spoiled food in dishes - especially in warm months;
Improperly disinfected food bowls;
Cracked or chipped crocks with food retention;
Soft or fresh foods held at improper temperatures;
Reused food or soft foods made in batches for refrigeration;
Reheated baby formula;
Dirty refrigerator doors and handles; and
Improperly disinfected hand feeding equipment.

Perches

Perching materials are many and varied. The use of larger rather than smaller perches is advocated. Birds in the wild do not perch on twigs - they perch on solid branches! In the aviary the bird must sit on the same perch continually. The use of large branches or pieces of timber reduces foot problems and gives a solid base for mating. Perch hygiene should not be forgotten, in the case of disease outbreaks remember to replace or disinfect the perches. Badly soiled perches should be scrubbed down in disinfectant.

Reference

Speer, B. (1992) Proceedings of the Seminar on Breeding Rearing and Marketing Exotic birds. Concord, California. pp 45-59.