Animals in Intensive Production Systems (Aviculture)

**Introduction**

**Lecture 1 Aviculture, scale of the industry, species, breeding and care**

- **The role of Veterinarians in aviculture and the significance of aviary birds in veterinary practice**
- **Structure of aviculture in Australia, common species, and their features**
- **Basic care and breeding requirements of common aviary birds**

**Lecture 2 Avian Behaviour**

- **Behaviour principles**
- **Behaviour management**
- **Behaviour problems in pet birds**

**The role of Veterinarians in aviculture and the significance of aviary birds in veterinary practice**

- Aviculture is defined as the keeping and breeding of aviary birds, in this lecture we will also focus on keeping pet birds and basic dealings with avian wildlife.

- Veterinarians play a role in all areas of keeping aviary birds, including offering health, husbandry, medical and surgical advice for the owners of the single pet birds through to the aviculturists with a hundreds of thousands of dollars' worth of birds.

- Avian veterinarians are involved in the health and welfare of birds including advising on husbandry, breeding (including pairing and genetic advice), incubating eggs and hand raising chicks, managing and understanding disease risk and welfare. Avian veterinarians also need to understand nutrition and bird behaviour as well as understand disease and how to treat and manage disease problems.

- The 2016 Australian Pet Ownership in Australia report estimated the pet bird population at 4.2 million, second in population to dogs, and just behind cats and dogs for the most commonly owned pets (many people owning more than 1 bird).

- avian medicine is a large field and like many areas of veterinary science is an ever-increasing discipline. As a result of continued advancements in the field of avian medicine we can now provide our bird owners with extensive diagnostic options and treatment plans. Blood tests, x-rays, ct scans, endoscopy, orthopedics, pediatrics, soft tissue surgery, etc can be offered by regular vet clinics and not just relegated to those with special interests.

**Taxonomy**

There are estimated to be over 9000 species of bird, which can be grouped into orders and families.

Psittiformes

- Wide weight and size range between species. The prehensile feet have the lateral and the medial digits facing caudally and the other toes cranially. The upper beak is hooked and has a prominent cere and is the birds primary weapon of defense (this affects the way these birds are handled). The syrinx is located tracheally with three pairs of intrinsic muscles, allowing vocal mimicry. Plumage can vary, body shape is consistent and mostly vegetarian diet with some species being pollen and nectar feeders.
- E.g. cockatoos, galahs, eclectus, budgie, lovebirds macaws, lorikeets etc

Passeriformes

- Wide weight and size range again, the largest group of all the birds. All species in this group have three unwebbed toes pointing forward and one toe pointing back, commonly known as perching birds with a well-developed syrinx allows complex singing. Plumage size and body shape can vary. Bill size and shape reflects the feeding strategies (there is considerable variation in diets between bird in this group). A very high metabolic rate compared to the other avian orders (this affects diet requirements and may affect the types of drugs used and dose rates compared to other species)
- E.g. Finches, canaries, crows magpies etc,

Galliformes

- Majority are more similar in size compared with other orders. The feet have three toes facing forward and a smaller hind digit. Legs are large and stout and suited to terrestrial life styles. Many species are poor at flying
- E.g. chickens, turkeys, pheasants, quails.

Anseriformes

- All members of this group have webbed feet and short legs thus a waddling gait while walking. They have dense waterproof plumage and flattened dorsoventrally bills. Referred to as waterfowl as they are almost exclusively associated with water (pet birds in this group are often kept in inappropriate conditions).
- E.g. Ducks, geese, swans

Columbiformes

- Fairly uniform in body size and shape and wing aspect. Foot anatomy as with passerines. Infants are feed crop milk which is formed by rapidly desquamating crop-lining cells, during this time the crop may appear abnormally swollen.
- E.g. pigeons and doves.

The differences between these orders are significant, there is also differences between the species within these orders. Understanding these differences can help provide appropriate husbandry, handling and treatments.

**Structure of aviculture in Australia, common species, and their features**

- Outside commercial poultry aviculture and bird keeping is extremely diverse. There are several different communities that can be identified who have needs that can be provided by avian veterinarians. Key groups may include:

    - The pet industry (mostly parrots)
    - Back yard poultry (pets and small egg production)
    - Parrot/passerine and other, breeders (breeding for the pet industry, specific genetic traits (sometimes for shows and sometimes for rare, desired traits) from large professional aviaries to back yard hobby breeders)
    - Pigeon fanciers and racers
    - Conservation (rear and endangered species such as the orange belly parrot)
    - Wildlife rescue
    - Falconry (not in Australia)

**1. Pet Bird industry**

Parrots are amongst the most commonly kept pet birds come from the psittacine family.

**Sources of birds**

- Breeders, by direct sale, at bird shows or through pet shops. Sources such as gum tree are often not good places to purchase birds.

**Breeds (species)**

When determining what type of pet bird to buy, it is important that prospective owners are educated about the characteristics of birds, how long they may live for, appropriate housing and care and common health issues.

Common species

Budgies

**Male vs female -** Adult males have a blue cere and females a brown cere. Male birds kept alone seem to be more able to learn how to talk.
**Environment** - cope well with smaller cages.
**Stimulation/interaction** - can be happy without constant human contact and alone but loves plenty of stimulation.
**Health** - prone to obesity on seed diets and bacterial infections when the cage is not kept clean. Other common diseases include scaley face mite and macrorhabdos (gastric yeast).
**Expected life span** - May live past 10 years, but not commonly a long living bird.

Cockatiel

**Male vs female -** males can talk and are generally gentler than the females. Adult males and females have variations in colours and spots on their plumage depending on their colour type. Females can generally be identified by the stripes under their

primary feathers, males also have bright coloured cheeks and are often slightly bigger than the female birds. Colour variations can having sex identification more difficult. Common colour variations may include lutino, cinnamon or white.
**Environment** - very active birds, love to explore, need time out of the cage or a large aviary to keep them occupied.
**Stimulation/interaction** - they can cope well with periods alone. They can become aggressive and possessive especially when they bond to one person.
**Health** - Generally very healthy birds but are prone to psittacosis and toxicosis including heavy metal poisoning (due to their curiosity).
**Expected life span** - Commonly live beyond 15 years, some well in their 20's.

Cockatoos*:*

**Male vs female –** mature birds can often be differentiated by the colour of the iris, females usually develop a lighter brown to red colour iris depending on the species.
**Environment** - Birds as large as this require a lot more space to fly and explore. They are destructive birds and can be very noisy especially at dawn and dusk.
**Stimulation/interaction** - These birds are highly social and by choice they desire 24 hour a day contact with their companion. Often developing psychological problems (screaming, aggression, feather plucking) if their emotional needs are not met. They can be taught to talk.
**Health** - Beak and feather disease is a huge problem and it is worth screening new birds (most commonly done using a PCR test on blood or feather samples). Obesity is a huge problem and very common with sunflower seed diets. Heavy metal poisoning is common also.
**Expected life span** - These birds live a long time, sometimes 80 plus years. People must be committed to these birds when they purchase them.

Lorikeet:

**Male vs female –** often very difficult to tell male and female apart, requires DNA sexing or endoscopy.
**Environment** - They are very inquisitive birds and require a lot of attention Won't tolerate small cages. They have very messy droppings and can be destructive around the house.
**Stimulation/interaction** - Need constant companionship and can become nasty and unpredictable if not well controlled by owner. They can be very dominant and often try and form a bond with one person. They are often a lot of fun as young birds.
**Health** -
**Expected life span** - if properly kept may live into their 20s

Eclectus:

**Male vs female –** Males are green, and females are red, males tend to be less aggressive.
**Environment** - Large birds so they require plenty of space but are usually quieter calm birds. They are often very gentle and trusting,
**Stimulation/interaction** - Need plenty of attention but can cope with periods of being alone.
**Health** – wean late and young birds often not weaned properly, prone to feather plucking.
**Expected life span** - May live into their 50s.

Sun Conure:

**Male vs female -** Not sexually dimorphic.
**Environment** - They are an active inquisitive parrot need lots of space for exploring.
**Stimulation/interaction** - Can be destructive, demanding of human contact and get aggressive as they get older.
**Health** – usually very hardy species.
**Expected life span** – up to 30 years

Macaw:

**Male vs female -** Not sexually dimorphic.
**Environment** - They are very large and make a lot of mess and can be very destructive. Ideally need a large purpose-built aviary.
**Stimulation/interaction** - They are highly intelligent and very social. They prefer constant companionship. They have very strong large beaks and tend to be very dominant and can become aggressive when not handled properly.
**Health** -They are very sensitive to psittacosis, prone to anxiety.
**Expected life span** - These birds are like 2-year-olds for up to 60 years.

Selecting a bird to buy
When first selecting a bird, choose a healthy bird, if you want to breed also consider the features you desire. If the bird is already unwell at purchase the added stress of handling and the new environment could result in death or more severe sickness.

Observe the bird preferably in a situation where it can't see you. Birds are very good at hiding disease; it's a natural defense mechanism.

If a bird is healthy, it should have the following characteristics:

- Feather cover should be even, tight, well-coloured.
- Eyes should be round, wide open and bright.
- Vent should be clean, and droppings well formed
- Feet should have clean skin and no toe deformities.
- Body weight should be normal (feel keel bone to assess body condition)
- There should be no discharge from nostrils, eyes or ears
- Beak should be normal, stay away from birds with beak abnormalities
- Should not have evidence of scaley leg, lice or other parasites
- Watch the bird to ensure it is eating.

Once purchased, avoid unnecessary stresses such as diet changes, food and water additives which the bird may not be used to. Ensure good quarantine is practiced before mixing new birds into an existing flock.

**Basic Health Care**

- Initial new bird checks should include parasite tests and specific disease testing such as but not limited to psittacosis testing and beak and feather disease testing pending risks of these diseases.
- Minimal annual health checks for pets.
- No vaccinations are available for pet birds in Australia at this point of time.

2. Backyard poultry (pets and small egg production)

Most common poultry kept are chickens, ducks, geese, and other species fall into the category of poultry.

Sources of birds

- stock from large farms that breed and vaccinate birds for the pet industry is usually the best source of birds, other common sources include rescued commercial birds and those sold though markets or birds from backyard breeders. Some pet shops also supply birds also.

Breeds

- a mixture of breeds and chicken species are kept. Many people choose layer breeds, sometimes rescued from the commercial industry, others choose more specialty breeds such as bantams.
- Birds bred to lay are high producers and as a result often suffer reproductive diseases and problems at an early age.
- Commonly kept breeds include, ISA Browns, Wyandotte, Plymouth Rock and Silkie bantams. Some birds may lay 340 eggs or more per year.

Basic health care

- these birds are pets and people will bond to them as a family member that also provides food (eggs).

- Annual health assessment and health checks at the first sign of any sickness is appropriate for pet birds.

- Regular assessment of the droppings for parasites is an important part of the health assessment. The molting period (usually late summer or autumn when day light hours are reducing) is a good time to prepare for the next laying period.

Vaccinations

- The most useful vaccines in the backyard chicken is for Marek's disease (*gallid alphaherpies virus 2*). This needs to be given at 1 day of age but for small breeders this is difficult as the vaccine is fragile, only lasts a short time once mixed and comes in 1000 dose lots.

- Although there are many other vaccinations available in the poultry industry, they are not considered as important or useful for backyard birds.

Male vs female

- Sexing these birds may be difficult, many are not sexually dimorphic till they are mature. Commercial birds are sexed at day old, some common breeds are bred such that the cocks have different coloured flight feathers to the hens, cloacal sexing (venting) is also done at this age in the commercial industry. In some breeds, the development of flight feathers varies between cock and hen.

**3. Parrot/passerine and other (including fancier pigeons), breeders (breeding for the pet industry, specific genetic traits (sometimes for shows and sometimes for rare, desired traits) from large professional aviaries to back yard hobby**

**breeders)**

Generally, temperate species of birds will start to become sexually active in winter as the day light increases, more tropical species are not as stimulated by changes in day light. In temperate climates like Victoria spring is a time when food sources are plentiful, so breeding late winter means hatching during spring flush and a greater chance of survival. Light, nutrition, weather conditions and nest availability are all things that can naturally influence breeding in the wild. To improve the success of breeding, a breeder understands the species they are breeding the can manipulate the conditions in their aviaries to improve their success. This may mean providing artificial lighting, mimicking spring rain with sprinkler systems and changing diets throughout the year to mimic natural availabilities and feed to birds seasonal requirements.

Many species are monogamous and will breed as a pair for life, returning to the same nesting sites, while other species may have several mates throughout their lives. A successful breeder will prepare the nesting boxes and any other breeding resources, such as breeding cages before breeding (usually early winter). The birds will be fed a lower fat, lower energy diet during this time, increasing the nutritional value at least a couple of weeks before breeding as the birds start to show breeding displays and behaviours. Fats, proteins and minerals are all increased at breeding so the hens can form the eggs.

Many aviculturists breed several different species, housing, feeding, cleaning, breeding boxes etc. all vary between species. A knowledge of the requirements of each different species is required for the best success. Compatibility of species needs to be taken into account if they are bred within the same cage or in close proximity.

Aviculturists will often breed for certain colours and traits so they will try and pair up birds based on their genetics in order to achieve these results. Different species of birds will lay different numbers of eggs, incubation varies between species as well, often around 30 days. Altricial birds hatch blind and featherless and rely totally on their parents for food and warmth when they hatch e.g. budgies. Sometimes aviculturists will remove these young birds from the nest and hand raise them, otherwise they may take 4-6 weeks (depending on the species) till they are ready to fledge. Precocial species hatch with feathers and eyes open, such as chickens and learn to feed by themselves immediately.

Hand rearing

- sometimes eggs are removed from the nest and incubated, once hatched the young are then hand reared. This can be done with rare and valuable birds often allowing more than one clutch during the breeding season.

- Neonates and hatchlings can be removed from the nest at various ages and raised artificially.

- Principles of hand rearing include controlling the temperature and humidity, feeding the babies the appropriate rearing food (there are many commercial feeds available, most common species reared are parrots, so parrot formulas are the most researched and developed) at the appropriate temperature, time and rate.

- In more recent years the ethics of hand raising chicks has come into question. It has been shown that birds do better if they are allowed some time with their parents before they are removed. Studies suggest that any animal, bird or otherwise, removed from their parents at a young age commonly suffer mental health problems and behavioural diseases later in life. Because of this in many European countries hand rearing is now banned, but co-rearing (where the breeder assists the birds by handling the babies without removing it from the parents and sometimes supplement feeding it) is common.

Identification

- breeders may use microchips and this may become more popular in the future
- Permanent rings placed on birds before they are one week old is still common practice, these rings usually have date, breeder number, and bird number on them. Pigeon rings may be more details for racing birds even with a phone number.
- Breeder may also use removable rings as a temporary form of identification.

Basic health care

- Health care options usually entail a flock style system where in most cases the health of the flock needs to be considered above the individual. Where individuals are valuable, treatment of such needs also to consider the flock.
- Cage and aviary birds can be treated in bulk with water and feed medications, but this is not a reliable way of managing disease in most cases.
- No vaccinations are available in Australia for common viruses and bacterial disease.
- Large professional breeders may artificially incubate eggs, hand rear chicks, and sell through dealers.
- All breeders, especially large-scale systems require protocols and procedures in place to manage risk of disease and to maintain flock health including,
    - Quarantine of incoming animals, foods, sick animals, and movement of people
    - Flow of people around the property and through the aviaries.
    - Movement of waste off the property
    - Trying to achieve a “closed aviary concept” is the ideal.

- there are vaccinations available for pigeons, these include pigeon pox, pigeon paramyxovirus (off label chicken vaccination) and salmonella (off-label chicken vaccination)
- Monitoring and routine management and treatment of parasites
- Keeping environment clean and dry reduces disease
- Annual cleaning and changing of breeding boxes and facilities is essential.

New concepts in breeding

- people are now starting to live with their pets and allowing them to breed. Often co-rearing the young, this is more common in Europe where it is illegal to remove nestlings and hand rear.

**4. Pigeon fanciers and racers**

- The pigeon community can be broken down into 3 components.

- Racing community
- Meat birds (principles may be most similar to small commercial chicken farms)
- Fancier breeding (also refer to principles discussed above in section 3.)

**Racing community**

-**Basic Health Care**

**-**racing birds are true distance races and fine-tuned athletes, successful birds are kept in prime condition during racing season, the slightest health problem will affect their performance.

- race health checks may include parasite reviews, review of body condition and nutrition status.
- during racing season, the birds may race weekly, the races get longer as each week, if the health of the birds is not well maintained then many will not place well as the season progresses.
- many pigeon fanciers will follow health care programs designed to prevent diseases from interfering with racing. These may include programs for the control of parasites, specifically gastrointestinal worms, coccidiosis, and canker.
- pigeon vaccination programs may include, PPMV-1(pigeon paramyxovirus 1), typhoid (salmonella), rotavirus and pox virus.
- Racing flocks are management more as a flock than individual, difficult health issues in a flock may be better dealt with by sacrificing a bird and running a series of disease investigations, specifically histopathology.

- **Basic Nutrition**
- Racing birds are fed for optimal racing. Birds that are overweight will be slow. Feeding programs can be complex and designed with specific energy levels, protein, fats, and carbohydrates. These birds are elite athletes, a good understanding of nutrition can have a considerable impact on performance.

- **Breeding**
- Genetic selection is based on improving racing characteristics.

**5. Conservation (rare and endangered species such as the orange belly parrot)**

**-**mostly programs in zoos and wildlife parks following the basic principles referred above in section 3.

- these species are highly restricted; breeding programs are well regulated to ensure their survival.
- health management including good nutrition, hygiene, appropriate husbandry are all important considerations.

**6. Wildlife rescue**

- Birds make up a huge proportion of rescued wildlife bought into clinics. Wildlife are commonly taken to vet clinics due to injury from car accidents, sickness and disease, predator injury and problems secondary to harsh weather conditions.
- Health care for wild birds is quite different to pet birds, focus must be on quick return to normal function with minimal stress and effect on behaviour.
- Strict scrutiny is important, birds that cannot function properly will not survive when released.

**7. Falconry (not in Australia)**

- The ancient sport of falconry is not legal in Australia, only people or organisations such as zoos can keep or manage birds of prey and train them.
- Common in the Middle East and in areas throughout Europe.

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Behaviour

*Behaviour principles*

- Every species of bird has unique behaviours, ways of communicating with each other and interacting with the world around them. Some behaviours are innate, many are learned. Behaviours change with life stages and maturity.
- Behaviour always occurs for a reason in response to the environment, the birds experience and by instinct.
- When helping people manage behavioural problems it helps to first understand natural behaviours of the specific species in question. Often behaviour problems are a result of the bird trying to exhibit normal behaviours in an abnormal environment. Each species and even subspecies of bird will have its own language and behavioural idiosyncrasies.
- If the bird was hand raised, when dealing with and advising on behaviour, it can help to understand how and at what age it was removed from the nest. Hand reared birds often have behaviour problems as they don't quite know if they are birds or humans, they have not had interaction with their own species to develop species specific behaviours. They may not learn the unique language, communication and appropriate behaviour of their own species.
- It is also important to gain understanding of the owner's perspective and expectations of treatments. Owners will often have unrealistic expectations and just want the problem fixed with a simple medication. Most problems are quite complex and require a degree of commitment and hard work, essentially behaviour modifying medications play a small role in the management of problems.
- When treating a suspect behaviour problem, it is important to assess the possibility of an underlying disease cause. While exploring and treating the behaviour issues, also run the appropriate clinical work up for underlying disease. Birds may have behaviour issues such as feather plucking due to pain or discomfort which could be the result of diseases such as parasitism (external or internal), cancers, ovarian disease, salpingitis, liver disease etc.
- The key principles in assessing behaviour in pet birds is to first define the A,B,C's – antecedent (understanding and defining the events and environment leading up to the behaviour, behaviour (define the behaviour) and consequence of the behaviour. Once these are defined and understood then an

approach and response to the behaviour can be planed. This may include changing the antecedent. There are 4 different ways to respond to a behaviour when training or trying to manage a behaviour, these are consequences that are controlled when responding to a behviour.

- Positive reinforcement
- Negative reinforcement
- Negative punishment
- Positive punshment

**Life stage behaviours**

- Specific life stage behaviours can be observed, birds are not desexed, therefore the full effects of hormonal changes and a clear shift from juvenile to adolescent to adult is exhibited.
- Life stages of altrical species include.
    - Neonate, period directly after hatching until opening of the eyes (altrical species), fully dependent on parents for food and warmth.
    - Nestling, period where eyes open and pin feathers develop till chick tries to fly.
    - Fledgling, period in which the Bird learns to fly. Critical period, learning to fly, forage and eat for self, socially interact.
    - Weanling, period where Bird learns to eat on its own.
    - Juvenile, period from weaning till puberty.
    - Adolescent, period of hormonal change which initiates sexual maturity.
    - Adult, period of calmer more predictable behaviour and maturity.

If the appropriate developmental cues are not appreciated, birds may not fully develop normal and expected behaviours leading to significant behaviour problems.

- Smaller species that live shorter lives go through these life stages rapidly, larger longer living species may not reach adulthood till they are 5 years old.

**Normal daily behaviour**

- Birds (most bird species, including parrots) are a flight fright species, they are very social and can have complex interactions.
- Natural bird behaviour that is exhibited daily can be divided up into three to four key areas.
    - In the non-breeding season, a bird will spend their time in social interaction, foraging and maintenance behaviour
    - During breeding season, they continue the 3 key behaviours but they are heavily influenced by reproductive behaviours. During breeding season birds that may normally flock may divide in pairs, will remain close to the nest site becoming aggressive of intruders and spending much time in sexual interaction with their mate. Most of the features in a captive lifestyle is more conducive to a breeding arrangement than the normal social template. A common problem for pet owners is when captive birds exhibit these natural sexual behaviours. This may result in family members being attacked, unwanted masturbation and sexual frustration leading to plucking.

- Social behaviour. Parrots are highly social animals, they have a well-developed social system, they will spend time playing with each other sometimes in rough play and for leadership assertion. They will spend time preening each other and watching over each other, adult birds will show the young what to eat and how to find it, they spend time watching over each other looking out for predators, they use this time eating together and shredding trees (some parrots are good at this). Birds naturally spend time communicating with each other. They screech as a greeting; they have warning noises (birds may be assigned as sentinels watching over the flock while they are foraging and giving out warnings when predators come). They have noises that they use to tell others where they are or to find out where the flock has gone.

- Foraging. Birds will usually eat at dusk and dawn; they can also spend large portions or the day searching for and scratching around for food on the ground or it the trees.

- Maintenance. A certain amount of time is spent resting, at night, many birds do not fly in the dark and will often perch and sleep when it gets dark (most captive birds don't get enough sleep, many owners will cover them but still keep them in the noisy living areas). They will often have a rest during the day as well. They also spend some time grooming themselves and others, tearing at trees to maintain beak and nail health.

**Behaviour management**

- When we have birds in captivity, we are often placing them in an environment which is most conducive to reproduction ie away from other birds, often spending time sexually bonding with the owner on a high fat, high protein diet with little effort required to obtain it. Yet we do not allow them to behave like they would in the wild during mating season. Most birds in captivity have little choice but to spend most of their time in maintenance behaviour, a small amount in social (usually in a sexually frustrating way) and often almost no time foraging. Such limitations on natural behaviours results in an exaggeration of the behaviours they can do. Hence, we see a lot of parrots self-mutilating and feather plucking (an exaggeration of maintenance grooming behaviour) or doing repetitive non-productive movements. They may show confused and aggressive behaviour resulting from lack of appropriate interaction (sexual frustration) and play or out of fear or insecurity from inappropriate socialisation.
- When understanding normal natural behaviour for the species of bird it becomes easier to understand the expression of the unwanted behaviour (which is usually the bird trying to express its normal

behaviour in an abnormal environment). Spending time trying to re-establish more normal behaviours allow a normal expression of such and is often the key to treating behaviour diseases.

- Most of the larger parrots learn from the parents for months to years after leaving the nest. During this time, they learn how to interact and develop their social status, what to eat and how to find it, how to recognise predators and maintain their feathers etc (For the pet bird this can be used to help teach birds to eat the right foods and in teaching them how we want them to interact with others and their environment). This also helps to explain the different problems that can arise from birds that are hand reared and missed important developmental cues at a very young age as apposed to birds taken as pets after weaning.
- Problems sometimes start with the wrong selection of bird. Different species have different needs and differing personalities, which can be matched to the owners' expectations and ability to care for the bird, however people rarely seem to think this way when purchasing birds, often buying a bird before understanding how to properly care for it.
- The most important guideline to assist people in living with a bird is to give them an appreciation of life, from the birds' perspective. This in turn allowing them to develop a more appropriate environment and social setting for the bird.
- It is important for an owner to maintain leadership over the bird (this is not about accreting dominance); parrots will continue to test their owners trying to understand their role and place in the flock. Keep the bird below eye level and off the shoulder, so it does not take on the guardian aggressive role of a bird that sits high and has control of the environment. The owner should not hesitate or show fear, they should speak as though they expect to be answered, offer a firm steady hand as perch, teach basic commands, and repeat them frequently and correct inappropriate behaviour, focusing on a positive reward system. A signal is submissive when – the birds' eyes are above the handlers eyes and mouth, the handler averts their eyes, the handler holds hands behind back, the tone of voice is soft and baby like. If the Bird is managed in this way it will be encouraged to take a leadership, controlling role.

- How best to keep birds –Aviary, night cages, appropriate attention, do not stimulate sexual behaviour, good nutrition, play pens, foraging toys and suitable environments. When it comes to how birds are kept, the potential owner also has certain ideas and expectations that they will want filled, we can help them do this in ways that also promotes best health and welfare. The option of a night cage is great, birds respond well to a good night's sleep, a small cage in a quiet dark area will help parrots relax properly at night. Good nutrition always helps limit disease and problems; research also suggests that access to uv light can be beneficial to birds who spend a lot of time inside. Birds in the wild love to shred so some of the best play equipment are large leafy branches in a pot.

- Handling birds in the clinic, for tame and trained birds it is a good idea to teach the owner to make the bird towel friendly, this can be done by playing games of hide and seek using a towel from a very young age. This means that in the clinic parrots can be more easily restrained using a towel without becoming stressed. Slow movements in the consult room while wrapping a towel around the bird to get control. Talking to the bird will often comfort it. Holding it in a more upright position is also often less stressful. When keeping birds in the clinic the higher the cage the less stressful for the bird, they relax better when they can see things around them, especially any predators. It is important to keep them away from other animals in the clinic also.
- Behaviour consults can take time and may take several consults before the problem is under control, consider getting the client to fill out a detailed history and questionnaire covering medical information, environmental conditions, what makes up the flock and what interactions the bird has with people and other birds and details of the actual behavioural problem. There are many published examples of such questionnaires.
- Use the ABC's to help define and understand the behaviour then suitable plans can be implemented to help curb and manage the unwanted behaviour.

**Training birds**

- Vets can teach clients how to provide the bird with adequate environmental stimulation and boundaries so that owners and birds can get the most out of the relationship. Training is a tool that assists the bird in fitting in with the human environment. Training should always positively reinforce the appropriate behaviour and helps to fulfil their need for social interaction.
- Basic games that help develop proper behaviour- house tour, colour game, whistle while you work, trick training.
- While training the use of cheerful language, making training a game, keep the bird's interest by making sessions short, specific with a reward.
- Good behaviours to train include STEP UP start by getting the bird accustomed to your touching it ventrally, reward immediately and gradually get it stepping up on the hand on command. STEP DOWN bring your hand to the perch so that the bird steps forwards or back onto the perch. STAY when bird is on the perch say "stay" and remove the hand so bird cannot step on again. HOODING cup your hand over the birds' head and talk softly and calmly and with small birds you can make a tunnel and turn it into a game for them to go through. TRANSPORT teach the bird to get in and out of the cage by placing bird in the cage for 30-60 sec and then allowing it to step out onto your hand. TOWEL a towel is very useful for restraint, accustom the bird to the towel's presence, then make gentle movements with the towel so it doesn't get scared, over time move the towel closer to the bird, start touching the bird with the towel and eventually you will be able to wrap the bird without the bird getting upset. Often the best reward is a favourite food treat that is not part of the normal diet. Birds can also be clicker training.
- Avoid sexual behaviours such as nose rubbing excessive petting and grooming, allowing the bird to groom the owner and do sexual acts on the owner. Randy Lorries will hump anything during the breeding season, they

especially love the little soft toys owners seem to like to give them (so thought needs to be given to the types of toys people buy). These behaviours lead to frustrations and may result in plucking, destructive behaviour, and unwanted egg laying.

- Parrots are not the only species that are trained, pigeon fanciers spend hours developing and training teams of birds to race and find their way home. Tumbler pigeons are taught to fly in unison.
- The ability for pigeons to find their way home is still not fully appreciated, however there is a lot training and preparation involved in teaching the birds to fly home and managing a race team.

**Behaviour problems in pet birds**

- Some common problems – Aggressive behaviour (fear biting, dominance, territorial, possessive), nuisance vocalisation, feather plucking, self mutilation.
    - Some behaviour modification techniques that can be used in these situations include, placing the cage in a lower position the bird above the head is a very dominant position. Keep bird between the shoulders and the waist when out of the cage, clip wings and use strong but gentle commands. Be consistent with training and if bird goes to bite, then wobble the arm it is on and tell it off calmly and strongly (the bird will pull back from the bite to regain its balance), provide a calm, quite non-threatening environment. Identify sources of fear and slowly desensitise the bird. Speak softly to screeching birds they often call out to know where you are if you do not respond the screeching may get worse so teach them to respond quietly. If you can discover some of the reasons for the unwanted behaviour, what behaviour the bird is trying to exhibit you can explore ways to target and modify that behaviour.

FEATHER PLUCKING- these are birds which only have feather loss or damage in areas where they can reach with the beak. This is a common behavioural problem presented to the avian veterinarian. It is important to make it clear to owners that sometimes these behaviours are easily fixed and sometimes they can take a lot of time and commitment and be minimised at best. There are many causes

- Diseases include- Allergies, mites and lice, intestinal parasites, low humidity, skin infections, psittacosis, malnutrition and cancer, chronic pain.
- Psychological causes- boredom, overcrowding environmental change, poor wing clip, sexual frustration.
- Feather puckers may need a number of consultations in order to get a suitable management/treatment plan, the consideration of blood tests, faecal checks, skin and feather cytology and skin biopsies or more advanced and specialised diagnostics may also be needed such as CT scan for spinal injury or even toxicology tests may be helpful.
- If the problem is deemed psychological then the owner

can attempt behaviour modification eg- don't allow extreme behaviour and reward calm behaviour, regain leadership over the bird, provide appropriate stimulation, change the type of contact the owner has with the bird (reduce sexual stimulatory behaviours). Work with the client to understand why the behaviour is occurring (using your understanding of normal behaviours) and develop ways for them to manage those behaviours. Even if the problem is not psychological this can still be a good opportunity to teach the owner how to better understand their bird and develop better interactions. Many owners don't adequately take into account the birds needs and therefore even if the bird is not showing obvious signs of psychological problems it will still benefit.

- Psychological drugs may include clomipramine, diazepam, fluoxetine, diphenhydramine, haloperidol, leuprolide acetate/suprelorin (for sexual behaviours), naltrexone or Phenobarbital. Many of these drugs have the potential for serious side effects and interactions with other medications.