The Galah

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Abstract

It has often been said that familiarity breeds contempt. Australians, and Australian avian veterinarians, have grown up with galahs as part of our environment and even as part of our language. So used are we to seeing it as a pet cockie in a backyard cage, that we have ignored or become complacent about its beauty and personality.

In this presentation I want to remind Australian veterinarians about, and introduce foreign veterinarians to, the galah and its place in our environment, our life and our practices.

Before understanding the Galah in captivity it is important to understand its natural behaviour. This paper focuses firstly on the Galah in the Australian bush, including its normal behaviour, diet, and reproduction. It then addresses how these factors are affected by captivity, as reflected in the captive Galah's behaviour and medical problems.

The Galah

Classification

The galah (*Eolophus roseicapilla*) forms a genus of its own in the family Cacatuidae. (1) Although some authors (2) have placed the galah as a member of the family Cacatua, Forshaw (1) believes that there is sufficient evidence (both morphological and DNA) to place it in its own genus.

Currently there are three recognised sub-species:

* the nominate sub-species, *Eolophus roseicapilla roseicapilla* found in western Australia;
* *E. r. albiceps*, found in eastern Australia; and
* *E. r. kuhli*, found in northern Australia. (1)

(This classification, used by Forshaw, is based on the provenance of a specimen reputedly collected in Western Australia in 1801-1803 and named *E. r. roseicapilla*. If further investigations show this provenance to be incorrect, Forshaw agrees that *E.r. albiceps* should re-named *E. r. roseicapilla*, and that the name *E. r. assimilis* should be re-introduced to describe the western sub-species.)

These sub-species are distinguished primarily by differences in the crest and peri-ophthalmic ring, although subtle differences exist in size and plumage colouration. (see Table 1) Hybridization between the sub-species readily occurs along the borders of their ranges.

Social structure

The basic unit in the Galah social structure is the bonded breeding pair. These pairs, once established, are usually only broken by the death of a partner. Each pair selects a nesting site, often sharing a tree (or stand of trees) with other pairs. These groups of nesting pairs form a flock, and the flock's movements are centred on the nesting site, rarely venturing more than 10 kms away.

Within a few months of fledging, juvenile Galahs leave their parents and come together in large nomadic flocks of juveniles and non-breeding adults that roam widely over an area as great as 1,000km^2, following changes in food availability. It may be the arrival of these large nomadic flocks that account for seasonal rises in the Galah population in some localities.

Daily behaviour

In the wild Galahs feed mainly in the early morning and late afternoon, mainly on the ground. During the middle of the day they shelter in the foliage of trees and shrubs, entertaining themselves by stripping leaves and bark. They will also perch on telephone wire and bare tree branches, indulging in a series of acrobatics, hanging upside down flapping their wings and screeching loudly. During rain showers they will excitedly bathe while perched on wires and branches, flapping their wings while hanging upside down and screaming.

After feeding and watering in the late afternoon they will move back to their nesting sites (and in the case of non-breeding flocks, a roosting site near a watercourse), and indulge in late evening flying and acrobatics before settling for the night. In the morning, activity begins before light as the birds call to each other and begin to move around in the treetops. They then drop to the ground and feed for a short period before returning to the branches, grooming themselves and then finally flying off in search of food. Often this departure is initiated by one bird, which calls and stretches its wings and tails before flying off. It may have to repeat this several times before the entire flock departs for the day. (1)

Diet in the wild

The diet of wild Galahs comprises seeds of grasses and herbaceous plants, cereal grain (especially wheat and oats), fruits, berries, nuts, roots, green shoots, leaf buds, blossoms, and insects and their larvae. In some pastoral areas wheat may make up 75% of the daily intake of seed, usually obtained by the roadside or at silos and railway sidings, although some crop damage may occur. (1)

In non-pastoral areas the diet is usually predominantly native grasses and introduced plants. This includes saltbush (*Atriplex vesicaria*), bluebush (*Maireana sedifolia*), western button grass (*Dactyloctenium radulans*), Mitchell grass (*Astrebla lappacea*), and Flinders grass (*Iseilema membranaceum*). Galahs have also been observed eating the seeds from paddy *melons (Cucimus myriocarpus*), wild bitter melons (*Citrullus lanatus*), rolypoly bush (*Bassia spp*), swamp oak (*Casuarina glauca*), and thistles, as well as mistletoe berries (*Amyema sp*), shoots of Banksia plants and flower buds of the beach daisy (*Arcotheca poulifolia*). (1)

Biological History

Galahs reach sexual maturity at 2 – 3 years of age, with the cock maturing earlier than the hen. (1,3) Sexual dimorphism is slight, with a change in eye colour developing between 5-6 months and 12 months of age. (3, 4). Prior to this colour change juvenile Galahs have a light brown iris. It should be noted, though, that while all Galahs with a pinkish-red iris are hens, not all hens have a pinkish-red iris! This author has seen several confirmed hens with dark brown-black irises.

Because breeding Galahs are in a permanent pair bond, there is little courtship behaviour (eg courtship feeding) noted. Breeding is influenced by rainfall and feed availability, and usually begins in late winter (July), extending through to early summer (December) in Australia. The exception is in the northern areas of Australia, where breeding begins after the wet season in February, and continues till as late as June.

Once a nesting site (usually a hollow limb or hole in a tree trunk) has been selected by a pair, they will usually retain ownership of it all year round, defending it against any animal encroaching within 3 metres. The semi-colonial nature of the Galah is emphasised by the sharing of a nest tree or area, with different pairs nesting within 10 - 80 metres of each other. (1)

About 1 month before egg laying commences, both birds commence to clean out the nest site. The bark around the entrance is chewed off and the wood underneath polished almost smooth by the action of the birds' beaks. This clear area may serve as a notice that the nest site is occupied, although some believe it may be a defence against predators such as monitor lizards who may be unable to get a grip on the smooth wood. (3, 4) Both birds then bring eucalyptus leaves to the hollow and line it to a depth up to 15 cms. This activity will continue until after the first eggs have been laid, and some eggs may even be partially covered by leaves before incubation. (1)

Clutch size ranges from 2 – 6 eggs, each laid with a little more than a 2 day interval after the previous egg. Incubation begins after the last egg (small clutches) or the 4th egg (larger clutches). In the first half of incubation the hen may do the bulk of sitting, but it is more equally shared between both birds in the second half. (1) Incubation periods range from 23-25 days (1, 3), although artificially incubated eggs may hatch as early as 19 days. (5) Forshaw (1) reports an overall hatchability of wild Galah eggs of 82.6%. There is some asynchrony in hatching (1), with eggs hatching over a five-day period. (5) From the time of the first external pip, it takes the chick 1-2 days to fully emerge from the egg. (5)

The chicks are covered in a pale pink down when they hatch (1,3), and their ears are open (5). Their eyes open at 13-16 days (1,4) and pinfeathers start to come through in the second week. (1) The contour feathers over the shoulders come through first at 13 days, followed almost immediately by the crest and coverts on the head, crop, wings, abdomen and legs. The primary feathers on the wing and tail come next at 23 days, along with contour feathers on the back and abdomen. The contour feathers on the flanks are the last to appear at 30 days. These feathers continue to grow and mature until growth is complete at approximately 94 days, at the time of weaning. (5)

For the first 8-10 days the chicks are brooded continuously by both parents, after which they are brooded only at night until they are covered with contour feathers (approximately 21 days) and are no longer brooded. The size of the clutch affects the survivability of the chicks; clutches of 3 chicks have a survivability of 22%; 4 chicks, 42%; and 5 chicks, 24%. Clutches less than 3, or greater than 5, have a very poor survivability. (1)

Both parents feed the chicks every few hours until they are 6-7 weeks old and fledge. As each chick leaves the nest it is capable of strong flight and is escorted by its parents to a nearby crèche – a tree or stand of trees, the tops of which are full of recently fledged chicks from many different parents. Each family assembles at the crèche, and may move to different crèches until the chicks are 5-6 weeks old, and are no longer been fed by their parents. At this time the parents desert the juveniles which then form into flocks and disperse widely. (1)

The Galah in captivity

Aviculture

The sedentary nature of the Galah, combined with the inadequacies of a seed diet, predisposes this species to obesity. Apart from its effects on the Galah's health and life expectancy, obesity has a marked effect on its reproductive success. Aviculturists need to keep this in mind as they try to breed this cockatoo.

Galahs should be kept in long flights in either conventional or suspended aviaries, the recommended minimum length in Australia being 4 metres. (3) Perches should be kept to a minimum, with one at either end usually been sufficient. This encourages the birds to fly more and gain some exercise. Although they are semi-colonial breeders, Galahs will resent the presence of other birds within 3 metres of their nest site, so solid wall partitions between flights may be necessary to obtain privacy. Alternatively, very large aviaries can be used to hold several pairs, so long as nest sites are well separated. Galahs are not as destructive as other cockatoo species, but a metal framework and strong wire (16 gauge) is still recommended for aviary construction.

If possible vertically hung hollow logs should be provided as nesting sites. Different lengths (50cm – 2 metres) should be offered, all with an internal diameter of 20-30 cms (3) although Sindel (4) reports successful breeding in logs up to 60 cms in diameter. If logs are unavailable a nest box can be used, once again with an internal diameter of approximately 30 cms. The behaviour of wild Galahs in preparing their nest site is duplicated in captivity. Before during breeding season a good supply of eucalyptus branches must be offered, allowing the pair to line their nest site, often up to a depth of 15cms. The entrance to the log or box will be chewed and smoothed by the pair prior to occupation. (3,4)

Diets offered by Australian aviculturists are predominantly centred on seed. Formulated diets at this stage are unpopular, largely due to costs compared to seed, but also because of a perceived need to provide some variety in the diet. Sindel (4), noting that Galahs are prone to obesity, recommends that high fat seeds (eg sunflower, safflower, oats and canary seed) must be avoided to prevent it. He offers his Galahs a selection of millets only, and restricts their intake out of the breeding season to a large handful per pair, per day. Supplementary foods offered include sprouted millet seed, corn, silverbeet (spinach), broccoli, cauliflower, peas and seeding grasses. Eucalyptus nuts and fruit are offered by some aviculturists for their value in relieving boredom. (3)

One of the more common problems encountered in aviary bred cockatoos is nutritional secondary hyperparathyroidism, resulting in pathological fractures and bone deformities in juveniles. Cuttlebone, as offered by many aviculturists, is insufficient for Galahs, as they tend to destroy it rather than consume it. Calcium syrup can be added to the drinking water prior to and during the breeding season, or calcium syrup or powder can be mixed with a soft food or vegetable supplement been offered. An alternative to this supplementation would be to convert the birds to a formulated diet, but aviculturists resist this for the reasons discussed previously.

Galahs have been known to hybridise with other cockatoo species, including the Sulphur-Crested (*Cacatua galerita galerita*), the Major Mitchell (*C. leadbeateri*), the Gang-Gang (*Callocephalon fimbriatum*), the Short-billed Corella (*C. sanguinea*), the Long-billed Corella (*C. tenuirostris*) and the Lesser Sulphur-Crested (*C. sulphurea*). (1,3,4) Two of these hybrids, those with the Short-billed Corella and with the Major Mitchell cockatoo, have been observed in the wild. (1)

The Galah as a pet

There are 6.6 million households in Australia, 17% of which own birds. Of these, 76% own less than 4 birds. The total population of pet birds in Australia is estimated to be 10.6 million (J. Rayner, Uncle Ben's of Australia, personal communication) Given that the Galah is one of the four most common pet birds in Australia, it can be seen that it enjoys huge popularity as a pet. It is less common outside Australia, but nevertheless its presence as a pet is on the increase as aviculturists learn more about breeding this (sometimes) delightful cockatoo.

Unfortunately, the large number of people keeping and breeding Galahs in Australia and overseas has often not translated into a better understanding of this bird's requirements, both physical and psychological. Although it would be reasonable to expect a Galah to live for 30-50 years, it is this author's experience that most pet galahs die or are euthanased before they reach 20 years of age. The reasons for this alarming mortality rate invariably revolve around two major factors – diet and behaviour. Table 4 shows an analysis of 111 cases of Galahs presented to the West Toowoomba Veterinary Surgery in the period 1st January 1999 till the 30th November 2002. It shows that, in this particular clinic, behavioural and nutritional disorders accounted for 42.4% of all Galah presentations.

Dietary problems

Given the Galah's rather sedentary lifestyle, the natural inclination of all animals to prefer high fat diets, and the average pet owner's ignorance of the true dietary requirements of their charges, it is hardly surprising that nutritional disease is a major problem with this species. Typically, these problems include nutritional secondary hyperparathyroidism in juveniles and hepatic lipidosis and lipomas in mature birds. These diseases are described elsewhere in avian medicine literature, and will not be discussed in detail here.

Typical seed mixes sold in pet stores and supermarkets for large psittacines have a high content of sunflower and safflower seeds. Most Galahs will preferentially seek these seeds out and consume them before investigating other foods offered. It is this consumption of a high-fat, low calcium: phosphorous ratio diet that is responsible for the high incidence of nutritional disease in this species. Veterinarians should emphasise to their clients the necessity of feeding low fat diets, preferably reputable formulated diets, to pet Galahs. This education needs to be extended to the aviculturists producing these birds, and the importance of weaning baby Galahs onto a formulated diet and vegetables reinforced. Aviary birds, able to fly extensively within their flights and fed a well-supplemented diet, can compensate to a certain extent for a seed diet; pet birds, confined to a cage or house and fed a limited diet of seed only, cannot.

Behavioural disorders

In the typical Australian avian veterinary practice, the Galah is one of the patients most frequently presented for behavioural disorders. These disorders may range from mild feather picking through to a form of apparent hysteria, where the bird compulsively pulls out or chews its primary feathers and many of its coverts and, when approached by humans, screams hysterically and throws itself around its cage, often traumatizing its wing tips. The problem is most commonly seen in juvenile, hand reared birds, often raised individually. It is relatively uncommon in mature birds.

It would appear that the basis for these disorders lies with inadequate socialisation of the bird, either during the hand rearing process or after weaning. Wild galah chicks are reared, typically in a clutch of 3-5, at first in a dark hollow for 6-7 weeks and then in a crèche for another 5-6 weeks. During this time they learn to interact with other birds and establish their social status. They learn what to eat, how to locate it, and how to eat it. They learn how to groom themselves, how to recognise predators and how to protect themselves and the flock. They have learnt most, if not all, of these skills before joining the large nomadic flocks where they learn to socialise even more and go on to reach sexual maturity, select a mate and repeat the cycle.

However, birds that have been bred in captivity, or have been “rescued” from the wild, and are taken for handrearing grow up in a very different environment. They are often raised alone as individuals, and are kept in warm but often brightly-lit containers. They are fed large quantities of food at lengthy intervals and, when weaning, have their food presented in front of them with no effort needed to locate it. They never have to learn to forage for their food and often only recognise the limited diet provided by their carer as food. With no siblings or crèches, they have no social interaction with their own kind, and do not learn how to establish a social order and their own place within one. In place of a flock they have human companions whom, however hard they try, cannot replicate the constant 24-hour a day social interaction of a flock. (6) As a consequence, juvenile Galahs in captivity often live confused lives, never sure of their environment and their place within it. Is it little wonder then that behavioural disorders such as feather picking and hysteria develop?

This situation will only resolve when handrearing techniques are improved to recognise the requirements of the juvenile. In the author’s locality, for example, wildlife carers ‘pool’ orphaned galah chicks to rear them together as small flocks suitable for eventual release. Other techniques, such as leaving the parents to rear and socialise the bird while handling it on a daily basis to include humans in its social order, show great promise in preventing these behavioural problems.

Multiple drug therapy protocols have been recommended for treating poorly socialised birds showing behavioural abnormalities. In this author’s opinion that many of these drugs do little more than sedate the bird into a drug-induced ‘nirvana’ while doing little to address the real problem ie little or no socialisation skills. While recognising that drug therapy can be an invaluable aid to treatment, unless it is combined with behavioural modification and training, including the teaching of socialisation skills, little will be achieved.

Trauma

Although graceful in the field or aviary, the pet Galah often appears to be clumsy in the household environment, similar in many respects to the juvenile Grey Parrot (*Psittacus erithacus*). (B. Speer, personal communication) Overly severe wing trims frequently cause this heavy-bodied bird to fall heavily to the ground, damaging blood feathers or causing sternal trauma if not worse. Repeated frequently, these falls can lead to a loss of self-confidence and induce behavioural abnormalities. It can be argued that this species should not be wing trimmed but, if deemed necessary, trims should be conservative and allow the bird some ability to fly and land safely.

Conclusion

Galahs are an attractive bird, sought after as a companion throughout the world. Unfortunately, to date little attention has been paid by the owners of these birds to their unique requirements. This has led to many misunderstandings and a reluctance by some avian veterinarians to recommend them as pets. Those breeding these birds and supplying them to the pet market need to gain an understanding of their behavioural and nutritional requirements in order to produce a healthy, well-socialised pet that can be a companion for many years. Veterinarians need to take the lead in educating the public on these issues, and promoting a healthier lifestyle for the ubiquitous Galah.

Acknowledgements

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	E.r. roseicappilla	*E.r. albiceps*	*E.r. kuhli*
Characteristic			
Peri-ophthalmic skin	White or greyish-white	Pink-dull crimson	Deep pink, more prominent than E.r. albiceps
Crest	Full, almost continuous with nape, white in colour	Sharp demarcation between crest and nape, more pink in colour than *E.r. rosiecapilla*	Shorter crest especially posteriorly, more pink in colour than other two sub-species
Plumage	This is the nominate species, and its plumage colouration is the standard for the species.	Darker colour than *E.r. roseicapilla*,especially deep pink-rose red breast; rump & upper tail coverts pale grey (almost white)	Generally paler in colour
Weight	Cock: 272-380g Hen: 200-356g	Cock: 320-432g Hen: 307-371g	Cock: 259-312g Hen: 227-305g

Table 1. Physical distinctions between Galah sub-species. (Adapted from Forshaw, 2002)

Diagnosis	Percentage of cases
Behavioural problems	17.2
Hepatic lipidosis	7.2
Lipomas	12.6
Other nutritional disorders	5.4
Infectious diseases other than PBFD	10.8
PBFD	2.7
Heavy metal toxicosis	15.3
Trauma other than sternal trauma	14.4
Sternal trauma	3.6
Other (neoplasia, toxicity)	2.7
Grooming; wellness exams	8.1

Table 2. Analysis of 111 Galah cases presented to the West Toowoomba Veterinary Surgery, 1st January 1999 to 30th November, 2002