

Songbird - Avian Medicine in Singapore

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In Singapore and other Oriental cultures, songbirds, including Hwamei (*Garrulax canorus*), Magpie Robin (*Copsychus saularis*), Red-whiskered Bulbul (*Pycnonotus jocosus*) and the White Rumped Sharma (*Copsychus malabaricus*) are traditionally kept and valued for the quality of their songs. Challenges in developing a new private avian practice in Singapore are discussed with particular attention given to the care, welfare and diseases of these songbird species and the neurobiology of their song production.

In Australia, veterinarians working in private practice talk about 'following a goanna track' when they go out seeking opportunities to utilise their professional skills based on what they see as special needs in their local community. Having completed my veterinary degree in Melbourne in December 2006 and having a passion for birds, I've been pursuing my own personal 'goanna track' in Singapore, exploring opportunities to develop an avian practice here and encountering both clinical and human-animal bond challenges along the way. Oriental songbirds have a unique place in Asian cultures and catering to the specific needs of these birds and their owners is proving an interesting aspect of my current journey.

Veterinary Care for Pet Birds in Singapore.

Singapore is home to the Jurong Bird Park, now one of the most famous bird parks in the world. The popularity of birds as pets in Singapore has also been increasing dramatically and this is reflected in an increasing number of bird shops. The number of shops selling birds or birds and fish steadily increased from 69 in 1985, to 104 in 1997 and to 225 in 2006. This is approximately a 300% increase in numbers within the past two decades. With high-rise apartment living as a fact of life for over 80% of the general population, the trend is likely to continue.

While keeping birds has a long tradition in Asia, seeking veterinary care for pet birds is not. Rather avian medicine in Singapore has traditionally been synonymous with poultry medicine and has only encompassed chickens, ducks and turkeys. Pet bird owners traditionally seek advice from lay persons or aviculturists who can provide advice based on experience but do not have the benefit of a veterinary education. Many pet bird owners are reluctant to bring their birds to veterinarians because of cost and lack of confidence in the veterinarian's expertise in this area. This perpetuates a cycle of "vets do not know anything about birds so therefore I won't take my bird to a vet, therefore vets don't learn anything more about birds." Such a cycle in other countries was overcome by client education and increasing veterinary competence in the discipline, and pet bird medicine is now a well-established speciality area internationally. Client education and efforts to increase my personal competency are strategies that are currently being applied in my fledgling avian practice in Singapore - hence talks to

bird clubs and my presence here. While the start has been a little slow, I predict that the growth of avian medicine in Singapore will ultimately be similar to that seen in the Australia, United States and Europe.

Establishing a positive relationship with aviculturists and pet shops can be a key in developing a successful avian practice. A veterinarian who strives to provide a fair and affordable service to the pet shop will be rewarded by referrals. With an estimated 250 pet shops in Singapore, the potential for practice growth is obvious. Also veterinarians wishing to practice avian medicine need to be familiar with the species available locally, including their diets, habitats and breeding behaviour. Working with pet shops can be a good way to develop expertise in these areas. However, developing good relationships can be challenging when welfare conditions in many Singapore pet shops fall short of internationally acceptable standards. In most cases pet shop owners and their employees care about their charges and want to provide good care but cost pressures in a competitive market place can make this difficult. I see working alongside the pet shop owners to develop industry codes of practice and improving bird welfare as an important role for any avian veterinarian. An ideal relationship is one that is mutually beneficial to the veterinarian, the pet shop and the birds in their care but there are many hurdles in trying to achieve this win-win-win situation. I welcome input in tackling this major challenge.

Local bird shops generally stock birds that are in demand. These include the species that are traditionally seen in Australian pet shops (budgerigars, canaries, parrots and cockatoos) but in addition there is a strong tradition of keeping local songbirds in Asian cultures. Westerners will be familiar with the Hans Christian Anderson fairytale of *The Nightingale and the Chinese Emperor*, who although captivated by the sound of his songbird replaced it with a jewel-encrusted replica. The Emperor recovered from an illness only when his original songbird was brought back to sing for him. Popular songbirds in Singapore include the White-rumped Shama (*Copsychus malabaricus*), Oriental White eye (*Zosterops palpebrosus*), Red-whiskered Bulbul (*Pycnonotus jocosus*), also known as the Merbok Jambul or Merbah Jambul. Because of space constraints and in order to encourage singing, these species are traditionally kept in tiny cages. Welfare aspects of this practice need to be challenged and this is being done along side a general pet bird owner education program.

Voice production in songbirds and other bird species.

While there is a considerable body of work about the neurobiology of birdsong in the ornithological literature, there does not appear to be as much attention given to the area in avian medicine literature. In treating oriental songbirds or indeed any songbirds, this information is relevant and was the trigger for a literature search, the salient findings of which are included here.

The neurobiology of birdsong involves peripheral mechanisms by which song is produced such as the syringeal and respiratory motor control as well as how birds utilise these systems to create their species-typical sounds. Songbirds have a relatively homogeneous duplex vocal organ in which sound is generated by oscillation of a pair of thickened labia on either side of the syrinx. Multiple pairs of syringeal muscles provide flexible, independent control of sound frequency and amplitude, and each side of the syrinx exhibits a degree of acoustic

specialisation. The abdominal air sacs provide separate reservoirs of air for each side of the syrinx, so the sound produced is analogous to two bagpipes playing a duet. The shape and size of the beak also influences the song, with larger, robust beaks producing deeper tones. On the other hand, most non-songbirds, including vocal learners such as parrots, have fewer syringeal muscles and use syringeal membranes to generate sound. In doves, at least, these membranes generate a harmonic signal in which the fundamental frequency is regulated by respiratory pressure in the air sac surrounding the syrinx while the overtones are filtered out by the vocal tract. The songs of adult songbirds are generally accompanied by precisely coordinated respiratory and syringeal motor patterns that, despite their relative stereotypy, are modulated in real time by somatosensory feedback.

Comparative studies indicate songbirds have evolved species-specific motor patterns that utilise the two sides of the syrinx in specific ways and enhance the particular acoustic effects characterizing the species song. A vocal mimic tutored with heterospecific song uses the same motor pattern as the tutor species when he accurately copies the song (Suthers, 2004)

Loss of song may be associated with conditions that specifically affect the syrinx or air sacs, such as bacterial infections, aspergillosis, mycoplasmosis or chlamydiosis. It may also be associated with other generalised systemic diseases or with environmental conditions that trigger diminished testosterone production, for example daylight hours, cooking fumes, cigarette smoke etc. As song in these species is a territorial activity, the presence of male birds of the same species may increase singing or occasionally making the smaller and younger birds keep quiet by instilling fear.

The songs of the commonly kept species of oriental songbirds of Singapore will be played and discussed during the presentation.

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Hwamei
Garrulax canorus



Oriental Magpie Robin
Copsychus saularis



Oriental White Eye
Zosterops palpebrosus



Red-whiskered Bulbul
Pycnontus jocosus



White-rumped Shama
Copsychus malabaricus

