# Parasites of Budgerigars

# A Practical Guide

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General husbandry advice is easy to come by in our great hobby. Everyone has their own secrets on how to get the best out of their birds, or how to bring them into condition for breeding or showing. This article is designed to share knowledge about the parasites which commonly infect our birds. It focuses on internal worms and external parasites; I have chosen to do this because these are the parasites which we, as budgerigar fanciers, can take responsibility for identifying, and set about removing from our birds' environment.

There are many parasites that inhabit the intestinal tract of our birds, many of which have complicated life cycles and require detailed understanding in order to identify and treat. I have selected the parasites that I think, through good husbandry, a small amount of diagnostic testing and commitment from the fancier, we should be able to eliminate or minimise their effects on our budgerigar studs.

# Nematodes (intestinal round worms)

Round worms are occasionally seen in companion and aviary birds. To be spread to our birds, they require access to eggs which have had a chance to mature out of the budgerigar, intermediate hosts (other species who act as "middle men"), or faeces of other species. Because these are the contributory factors, round worm problems occur most frequently in birds kept in dirt-floored enclosures.

# Ascarids (Round Worms)

Eggs become infective 2 to 3 weeks after passage in faeces, the worm egg must develop into larvae before it becomes infective. Ascarid eggs can persist in moist environments for prolonged periods and because if this, ascarid infections are most commonly seen in budgerigars with access to the ground.

# Clinical syndrome

Intestinal ascarid infection can cause the birds to stop eating, develop diarrhoea, lose weight and to experience stunted growth. Heavy infections can result in gastrointestinal obstruction and death (Fig 1).

# Diagnosis

Your veterinarian will be able to perform a faecal flotation which will allow visualisation of typical ascarid eggs in the faeces (Fig 2).





Figure 2. A typical ascarid egg on 1000x magnification

# **Capillaria (Thread Worms)**

Capillaria species are tiny, threadlike worms. Most capillaria species of caged birds have a direct life cycle (eggs are passed in faeces and subsequently consumed by other birds to continue the lifecycle). Species with an indirect life cycle commonly require earthworms as an intermediate host.

#### Clinical syndrome.

Adults burrow into the walls of the intestine, causing the birds to stop eating, regurgitate, develop diarrhoea, and lose weight. Heavy infections can result in ulcers, anaemia, and death. Infections of the oesophagus can cause gaping (birds which appear to be yawning) and difficulty in swallowing.

#### Diagnosis

Faecal floatation will allow visualisation of typical capillaria eggs. But even when present, it is difficult to find these eggs and they may require multiple faecal floatations to visualise them.

#### Control

Prevent access to the ground and intermediate hosts (invertebrates and earth worms). To prevent the lifecycle from continuing, keep birds in an aviary with floors that can be easily cleaned (i.e. not dirt) and clean the floors at least every fortnight. Eggs take 2 weeks to become infective and so cleaning every two weeks will help to minimise re-infection.

#### Arthropods

# **Tracheal Mites**

Caused by the mite *Sternostoma tracheacolum* which commonly infects the trachea (windpipe) of canaries, finches, parakeets, and cockatiels. This mite is much less of a problem in budgerigars, they appear to be less affected clinically, but is a useful bit of knowledge for bird fanciers in general. It appears that Lady Gouldian Finches are most commonly infected.

#### Clinical syndrome

Shortness of breath / panting, coughing, and sneezing may occur. Signs are most severe in hatchlings and juveniles.

#### Diagnosis

Tiny black mites can be visualized by shining a light through the windpipe. Eggs can sometimes be identified in faeces or vomit by a veterinarian under a microscope.

#### **Cnemidocoptic Mites (scaley leg and face mites)**

This is one of the most important parasites for budgerigar fanciers. This mite is common in New Zealand budgerigars and it is our responsibility to help share the knowledge to other fanciers in order to help limit its effects on our birds. The mite, which burrows into the skin to lay its eggs, causes grey-white encrustations around the cere, the beak, the intersection of the upper and lower beak. If left untreated, it can result in severe distortion of the beak. Prolonged infection can cause massive enlargement of the legs, feet and beak and result in necrosis (tissue death).

In budgerigars this mite is especially important because of the tight fitting rings that we use. It is my experience that infections with cnemidocoptes often result in skin thickening (hyperkeratosis) which causes the ring to become even tighter and can cut off the blood supply to the leg below it. In these cases the ring needs to be removed and in some severe instances, the affected leg amputated.

The good news is that it is really easy to prevent cnemidocptes from becoming a problem in your aviary by thoroughly examining birds before purchasing them. If you do notice your birds with scale around their face and

feet there are many topical formulations which you can apply to clear the mite infestation quickly and effectively.

### Clinical syndrome

The "scaly leg and face" mite (*Cnemidocoptes* species) seen in budgerigars, canaries, and other small birds causes thickening of the skin with honey-combed masses on non-feathered skin, especially around the beak and on the legs.

#### Diagnosis

Easily diagnosed by its clinical appearance in commonly affected species (budgies and canaries) (Fig 3).



# Mallophaga spp. – Feather Lice

These lice are classified as "biting and chewing" lice and cause feather damage by chewing on the feather barbules and shaft. Despite popular belief, this species of lice do not suck blood.

#### Clinical syndrome

In my experience with feather lice, the budgerigars present with various different symptoms. Most drastically, I have seen birds whose flight feathers have been so debilitated by the lice that they are unable to gain lift when flying, and as a result end up on the aviary floor. Less seriously, there are birds with severe irritation and restlessness with some feather damage to the emerging feathers as they leave the quills.

#### Diagnosis

Lice can be visualised on flight feathers when they are held up to the light. Visually they appear as a white dot sitting close to the feather shaft. Microscopically, we see evidence that the entire life cycle is carried out on the budgerigar with eggs attached in clusters around the shaft of the feather.

#### **Feather and Quill Mites**

There are many different species of feather mites and I believe there needs to be further investigation with regards to their involvement in feather loss. They have been proven to cause feather loss and thickening of the skin with heavy infestations but are fairly widely accepted to be otherwise harmless.

The mites live in the groove between the feather barbules, with different species preferring different feather types or even different areas of feathers. Quill mites live in the region around growing feathers. Some quill mites feed on keratin (the tissue that feathers and hair are made of), but *syringophilid* mites pierce the quill wall and feed on feather follicle tissue fluid. It is because of this feeding practice that I feel further investigation is warranted as this could severely damage growing feathers.

Diagnosis

Microscopic examination of feathers will reveal mites on the feather shaft (Fig 4).



# Dermanyssus Gallinae – The Red Mite

This mite is a blood sucker that hides in cracks and crevices, most commonly in the dark corners of nest boxes or wooden breeding cages. They feed on birds mostly at night whilst they are resting, or in the dark confines of the nest box. One of the most challenging factors when considering the control of red mite is its ability to survive in the environment. These mites are able to survive for up to a year without a blood meal and therefore environmental control is vital.

# Life Cycle

Because this mite multiplies rapidly in the warmer months of summer, its lifecycle is brief. Eggs are laid in cracks by females following engorgement on a blood meal. They hatch within 72 hours under warm, humid conditions. The larvae moult into nymphs which also feed on the budgerigar before maturing to adults.

#### Important points

The mites can cause intense irritation, restlessness and self trauma to the feathers. These mites can leave the budgerigar and feed on humans who come into contact with the birds, it is important to realise, however, that the mite cannot multiply without the avian host. Sitting hens and nestlings are most susceptible and heavy infestations can result in death in small nestlings.

#### **Treatment of Intestinal Worms**

It is all very well knowing what is living inside our birds and making them sick, but the next step is knowing how to get rid of these unwanted inhabitants. Symptoms of worm infestation vary according to the degree of infestation, but it is advisable that you have a "flock health" approach to your treatment regime, rather than waiting for birds to start becoming sick. This is known as prophylactic medication and follows the same principles that we use for treatment of fleas and worms in our dogs and cats. Birds at risk should be treated on a regular three monthly basis. As well as regular worming treatment, great care should be taken with aviary hygiene; floors should be cleaned and allowed to dry thoroughly. All cages should be thoroughly cleaned and disinfected after treatment.

There are a variety of products registered for the treatment of intestinal worms in birds. The two I would recommend are "Anthel Three in One Bird Wormer" (Tetramisole) and Vetafarm "Wormout Gel" (Oxfendazole and Praziquantel). These products are obtainable through your veterinarian or from some pet supply stores. These products are registered for use in avian species and this means they have undergone trials and tests to ensure their safety. They come with proven track records and specific dose rates depending on the bird's weight. The Anthel wormer can be administered in the drinking water whereas the Wormout gel requires either individual administration to each bird – a more labour intensive but far more efficient method or there are instructions for in-water use on the label. So there are options for both intensive fanciers with time on their hands and those who would like the birds to effectively worm themselves.

Many fanciers use Ivermectin as a treatment for their birds. This is considered to be "off label" use which simply means the manufacturer has not performed the scientific testing to develop safety margins and efficacy. Because ivermectin is used off label, it is advisable that if you are going to treat your birds with it, you seek veterinary advice first pertaining to the dose rate and safe administration and handling. Any veterinarian with an interest in avian medicine will be able to give you advice on the most effective and safest worming products for your birds.

#### **Treatment of Ectoparasites**

Again there are many methods for treating mites and lice on our birds. Many fanciers don't treat ectoparasites regularly, this may be because they don't look for them and assume they are not there, or that they don't feel like they are causing a problem. I believe that having birds that are parasite-free makes for a happier, healthier aviary.

There is one product I will recommend for treatment of ectoparasites and that is Avian Insect Liquidator. Avian Insect Liquidator or A.I.L. is an extremely safe and effective insecticide and insect growth regulator for all avian species. It provides instant control of ectoparasites on contact, with an additional six week residual protection against reinfestation. When used directly on the bird, A.I.L. penetrates into feathers to kill mites and lice. When sprayed around the environment A.I.L. kills insects on contact.

Because it is a growth regulator, it also inhibits the lifecycle of any mites or lice that are developing on the bird at the time of application, meaning they will not mature to become reproductive. Vetafarm who makes the product recommends its use on mites, lice, flies, spiders, ants or any situation were external parasites are a problem, including nest boxes, flights, perches, aviary floors, indoor cages and for direct application to the bird.

To use A.I.L simply pour the required amount (50ml/L of concentrate) into a trigger action or other similar pump pack, add water for dilution and mix well. Hold the trigger pack 30 to 40 cm from the bird(s) and apply four to five pumps/bird. Also spray cages, aviaries, perches and nest boxes thoroughly with diluted product. It is advisable to repeat in four weeks and again eight weeks after the initial application and this should eliminate mites and lice from your stud.

It is very important, that when bringing new birds into your aviaries, these are checked thoroughly for mites and lice, mutual grooming, sharing perch space and close proximity will allow mites and lice to spread rapidly through a flock and this will mean treatment of all birds is required again, rather than treatment of only the incoming birds. For this reason, quarantine is such a great idea.