The Importance of Parasite Control in Raptor Rehab.

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The intention of this workshop is to promote thought and discussion on the repercussions of routine control of internal and external parasites in raptors and the risks of no controls in the rehab situation.

For a rational discussion we need to understand there can be no definite guide lines on dealing with parasites in the rehab situation. Why? All rehabbers have different knowledge and skill levels, different resources (time, money), different species and numbers of birds coming into care. This makes for a mixed recipe of solutions to common problems. What works for you is the ideal if it works for the raptors.

When raptors come into care they usually:

- Have been on the ground for some time;
- Are suffering from stress;
- Have injuries or are ill;

All of these can lead to an increase in what I consider to be the natural parasite load or burden. When we place one of these unfortunates in an aviary (fully lined and to specs of course), we can cause three things to happen. We can cause an increase in parasite burden. We can cause a decrease in parasite burden. Or we can cause the natural parasite burden to remain static.

Perhaps the ideal is to release raptors with a parasite load that would be slightly below that found in the wild in healthy birds. We should also be mindful to try not to compromise any built up immunity the birds may have.

Things to watch for in rehab:

- Is our fresh food contaminated with parasites and contributing to the load;
- Basic hygiene, clean floor (faeces etc), clean water, clean perches, particularly between birds;
- Constantly damp conditions (especially floor);
- Overcrowding (two birds together for four weeks can result in far greater than double the worm population in both;

A brief general description of a parasite could go something like this: a parasite is an animal (or plant) organism which lives at the expense of another, the "host". It derives food and protection from its host. There are many forms of parasite from the protozoan Coccidia through the external lice, mites and ticks (Arthropods) to the various small and large internal worms (Helminths).

Of main concern to raptor carers and the focus of this discussion are:

- **LICE:** Wingless insects that are the most common external parasites of birds. Their body being flattened horizontally so that they can lie close to the skin, they also have hooked legs. There is a vast number of species of avian lice and they live continuously on the host, only leaving it to attack another victim. Lice lay sticky eggs or nits which adhere to the feathers in clusters in their favourite region of the body after

which they are popularly named.
You are most likely to see eggs as small white ovals on the underside of the wings. Lice vary from 1 to 6 mm in length and hatch within a few weeks of being laid. It is possible for one pair to produce 100,000 descendants in a few months. Hence the need for some form of routine control.

- **NEMATODES:** Roundworms are probably the most common parasite of all and include the gapeworms, threadworms and filarial worms. The worms are cylindrical, smooth and unsegmented with tapered ends. These worms have a reproductive tract capable of producing thousands of eggs daily. Their life cycles may involve an intermediate host or may be direct. Although some roundworms may be harmless in moderate numbers they are undesirable because they are always liable to multiply rapidly, especially if the condition of the host is lowered in some way, such as by injury or stress.

Quite often a raptor comes into care with no sign of injuries and may be fairly bright but lethargic although in reasonable condition (meat on the keel). After two or three days in care the bird is found dead in the enclosure in the morning, (The dreaded," it just died honest"!). Upon gross post-mortem we sometimes find intestinal round worms (Ascaridia spp.) or air sac worms (Serratospiculum spp.) in numbers sufficient to cause death. Peregrine falcons (Falco peregrinus) and Hobbies (Falco longipennis) appear particularly vulnerable to this death by overburden. One possible reason for this is their diet of other birds which may all have small worm loads that accumulate in the predator.

- **DETECTION: external.**
    - VISUAL; have a look, if your not scratching your head or body after you have looked, the bird probably does not have too many adult lice. Make sure to check under the wings for eggs.

- **DETECTION: internal.**

    - FAECAL FLOATATION; Get your friendliest vet to do it, or to teach you, then do it yourself. This can be costly to start and time consuming and is possibly the strongest argument for routine control measures rather than routine testing.

Now it may be evident that parasites could be having far more impact on our rehab of raptors and the success of our releases than we were aware. It could be said that we should be routinely treating for external parasites immediately upon arrival, I would suggest as part of your

first detailed examination of the bird. We must surely treat all holding facilities and handling equipment between every raptor.

What to treat the bird or facility with is a personal choice and my preferred option based on effectiveness, cost, ease of use and least toxicity to the birds and humans is a product from Vetafarm. Avian Insect Liquidator is a residual insecticide and insect growth regulator which means as well as killing adult lice and mites etc it also prevents eggs developing for up to six weeks. This one spray is effective for use on the bird and its environs. There are many other control agents and before deciding on a treatment and a programme of use it would be good practice to discuss it with an avian vet.

After many years rehabbing raptors I am still debating over routine or targeted internal parasite (worm) control. The availability and cost of routine monitoring can make the routine "dab or jab" of drench etc seem very appealing. This could well be the best option for those species predisposed to internal worms, such as Australian Hobbies and Peregrine Falcons. But there is always a downside and in this instance there are several. We need to be acutely aware that unknown to the carer or even the vet who has examined the bird it may have an extraordinarily high worm burden, be it in the gut or in an organ, and treatment to kill the worms may lead to the death of the bird. No treatment would in these cases just as surely result in death. A good avian vet may be able to help with strategies to reach successful outcomes even in these difficult cases. Another prime reason not to routinely treat for internal worms would be the toxicity of the treatments and any cumulative effect on the birds system. Also some species do not tolerate the various treatments as well as others. As far as agents to use in the control of internal parasites of all kinds, I cannot stress strongly enough the need to consult once again with your friendliest avian vet to decide which agents in which situations, the dosages and the dangers. Of course this advice would be best coming from an avian vet with considerable raptor specific experience. Discussion with other experienced raptor carers will also yield much useful information on what may best suit your situation and pocket.

References:

Bird Diseases. L. Arnall and I.F. Keymer 1975 T.F.H. Publications, Inc.