

# THE MOULT. A Delicate Process

Moulting of feathers in birds is a normal process. Feathers cannot be repaired once they have grown, so the bird has a system of replacement called the moult. During the moult, old and damaged feathers are progressively replaced by new plumage.

## MOULTING CONTROL

The factors controlling moulting are not well understood, but are known to be very complicated. Combinations of age, season, day length, hormone levels and breeding activity are involved in regulation of the moulting process. The moulting cycle for most birds is one year. Some birds have a twice yearly moult while some large parrots have a two year moult cycle.

## FEATHER GROWTH

Because feathers grow from distinct feather follicles, if a follicle already contains a feather shaft it cannot produce a new feather. The first step in the moult process is for the existing feather to be shed. The follicle then produces a new feather which grows from the base of the follicle (Germinal collar) and matures from the tip. The plucking of a feather will stimulate the follicle to produce another feather, but cutting or damage to the mature feather (with the shaft still in the follicle) will not cause a new feather to grow.

## MOULTING PATTERN

Moulting takes place in a predetermined fashion so that the bird is not left flightless (except in some waterfowl and seabirds). Generally the wing feathers are replaced first, then the body feathers and then the tail feathers from the centre out. Powder down feathers are replaced continuously. Penguins moult randomly.

## ABNORMAL MOULTS

One of the most obvious problems with a bird is a poor moult. Be that a prolonged moult or the growth of abnormal feathers. Abnormal feathers may be miscoloured, malformed, have retained sheaths or stress lines. These abnormal feathers are a reflection of a problem within the bird. Most feather abnormalities occur deep in the feather follicle during the formation of the feather.

## THE CAUSES OF ABNORMALITIES

### 1. POOR NUTRITION

During the moult the bodies demand for nutrients increases dramatically. Feather growth is a demanding function and so the body requires greater amounts of energy, protein, vitamins, fats and minerals. Unless these are supplied the bird will use up what reserves it has then begin to reduce the quality of the feathers it is growing. It is wise to increase the quality of the diet during the moult. Do this by providing good soft food supplements, extra vegetables and fruit, nuts, and lots of natural green branches. Well formulated moulting tonics like Vetafarm Moulting Aid are also very beneficial.

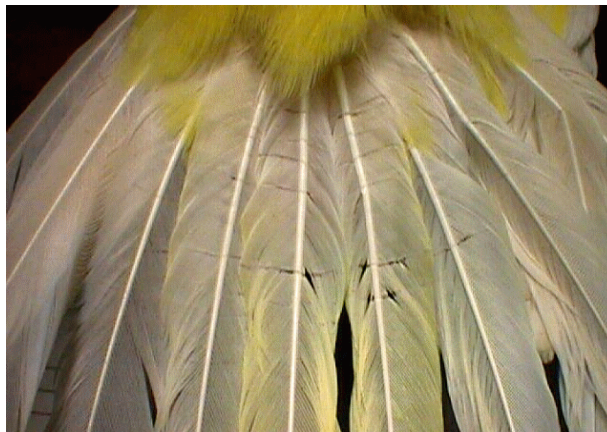
### 2. DISEASE

The classic disease that affects feathers is Psittacine Beak And Feather Disease ( PBF or Circovirus ). This virus affects the feather follicle and causes grossly abnormal feathers to be produced. Other viruses including the Polyoma virus will also damage growing feathers.

Any disease that is affecting the bird will show as abnormal feathers after the moult. For instance, a fatty liver will often cause head and neck feathers to retain their shafts giving the bird a “ spiky “ appearance. Discoloured feathers, eg: yellow or pinkish feathers are also associated with liver disease.

### 3. STRESS

The body responds to stress by producing hormones (cortisone), altering blood flow (flight and fight response) and reducing nutrition (stressed birds do not eat). If any of these happen then the growing feather will be affected. Often we will see “ stress lines “ in a feather. These lines are easiest to see in the larger primary feathers (tail feathers especially). The stress line tells you that during the growth of that feather the bird was suffering some form of stress severe enough to alter the flow of nutrients to the feather follicle.



Multiple severe stress lines in the tail feathers of a Lutino Grass Parrot

### 4. CHEMICALS

Some chemicals are known to affect feather growth, Mebendasole (a pigeon wormer) is known to alter feather structure.

It is obvious that the feathers are a window on the general health of the bird. If you are purchasing a bird always look carefully at the feathers, there is a lot to be learned.

## HOW DO I MAXIMISE FEATHER QUALITY?

1. Reduce physical damage to mature feathers. Cage design, type of wire, placement of feeders, waterers and boxes. When handling birds be aware that you may damage the feather easily.
2. Provide extra nutrition during the moult. Soft food and moulting tonics are recommended.
3. Prevent common diseases in the aviary - PBF, Polyoma, Psittacosis, worms, coccidia, megabacteria etc.
4. Have a good clean water supply (poor water leads to poor health).
5. Avoid extra stress during the moult, eg travel, handling, new introductions.
6. Check that any medications given will not affect the new feathers.