"The Thing with Feathers"

By: Tom Marshall

Sheer numbers and enormous diversity among animals indicate that members of the Aves Class must be earth's most successful animal. There are around 10,000 different kinds of birds inhabiting our planet. That is more than twice the number of mammal species. What is most unique about birds, and which undoubtedly has contributed to their success, is that they all have feathers.

Nowhere in nature will you find anything better than feathers. You will not find in the entire animal kingdom a more versatile and stunningly gorgeous body covering than feathers. They have so many necessary functions that help birds survive and flourish. Feathers can keep birds cool in hot climates and warm in colder climates. They can repel water and can protect from ultraviolet light, can act as camouflage and can attract mates during breeding seasons, and let's not forget that feathers give most birds the ultimate freedom of flight.

The evolution of feathers started with the dinosaurs, the avian variety of course, but recently thought to be more widespread among several types of dinosaurs, even those that could never get off the ground, given their size and build. Dinosaur feathers could be crude, like bristles of hair, to downy feathers seen in modern birds of today. More advanced feathers were found around legs, which could have simply been decorative, possibly to attract a mate or for camouflage or insulation purposes. What has been learned, apparently, is that feathers originally evolved for something other than flight. Even the avian dinosaurs that had developed truly bird-like feathers were actually gliding more than flying. Many scientists feel that flight is the latest stages in feather evolution.

Feathers, also called quills, are made from a light-weight protein composed of *keratin,* the same material found in hair, fingernails, scales and more. Feathers are "alive" during their growth period, meaning that they receive nutrients and oxygen through blood vessels. Once they are fully grown, the blood supply ceases. Aviculturists know what happens during the growth process if a feather is badly damaged, which can lead to a great loss of blood, weakening the bird or worse.

All birds possess six kinds of feathers:

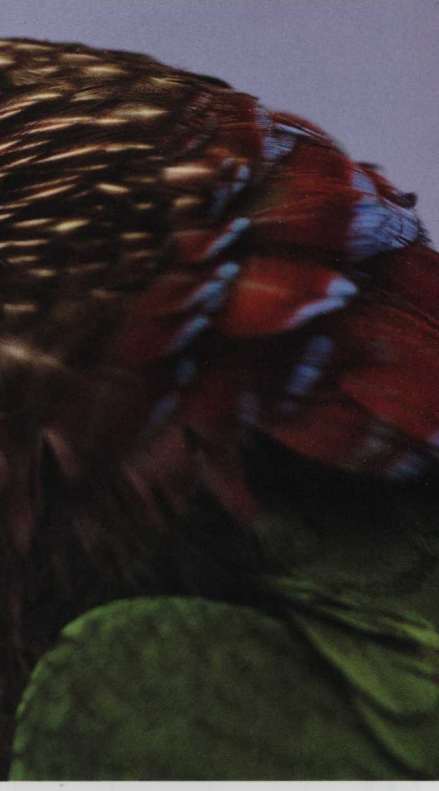
1. Contour Feathers: The majority of visible feathers form a protective outer layer that give birds their unique shapes and colors.
2. Down feathers: They line the bird's body and are well concealed under the contour feathers—great insulation. Many parrot species have powder down as well.
3. Flight Feathers: Very obvious, but some of the least in number. Most birds have 10 primary feathers on each wing and a set of secondary flight feathers from 6–14.
4. Semiplume Feathers: Providing support and filling between *contour* and *down* feathers. Their stiff central shafts help fill out the shape of the bird's body.

5. Filoplume Feathers: They are often elongated feathers not attached to any muscle and can't be moved independently, but are thought to inform birds in flight of minor adjustments needed to navigate.
6. Bristle feathers: they have sensory function comparable to a cat's whiskers. They are long and stiff and more hair-like than feathers and located just about anywhere there is bare skin on the bird. The face of a Blue and Gold Macaw comes to mind.

Those of us who get enamored with birds do so in large part because of the beauty of feathers and the marvel of flight. Nothing is more disappointing than to see a bird under our care in poor feather condition, or worse, one that plucks itself. Just from seeing this phenomena, we know something is wrong, but what? Is it due to the bird being under stress or is the cause psychological? Could plucking be the result of a dietary issue? Perhaps it is something in the environment, in the air or another bird? Maybe the bird is in ill health and has contracted PBFD (psittacine beak and feather disease) or polyoma. (These illnesses cause a loss of feathers, but are not to be confused with the self-destructive behavior of feather plucking.)

Rosemary Low has indicated that certain species of parrots are much more susceptible to plucking out their own feathers. They include the African Grey, Eclectus Parrots and cockatoos. She attributes this in many cases due to psychological issues, such as stress, brought on by fear, abandonment, a new environment, and jealousy. Other causes for parrots being self-destructive include plucking in areas of pain or skin irritation, food allergies and vitamin deficiencies or even a bad wing trim. The insidious thing is that once it gets started it can become a habit which can be nearly impossible to break.

The African Greys and the cockatoos, in particular, have always been popular with many companion pet owners. However, these two species also emit a considerable amount of feather dust, which make these popular birds a challenge to a conscientious homemaker, and perhaps unsuitable for people with asthma or other forms of breathing problems. It is sadly noted that the widely liked Moluccan Cockatoos and the rare Gang-Gang Cockatoos are notorious self-pluckers. Certainly stress and boredom will acutely affect African Greys and cockatoos, given



Hawk-headed parrot *(Deroptyus accipitrinus)*

their high degree of sensitivity to their environment and their intelligence. Unfortunately, plucking can eventually lead to the destruction of feather follicles, making it impossible for new feathers to grow.

The feathered faces of our parrots can also tell us what is going on in their minds. Generalized head ruffling is found in many parrot species, with the noted exception of the Australian broad-tailed parrots which keep their distance from each other. On the other hand, in crested cockatoos, head plumage erection can be very dramatic. Their development of complementary colors and the physical ability to generate exaggerated love-making movements have all contributed to the evolution of crests. Some crests are not so striking to the untrained eye, but others appear magnificent to anyone who may see it.

Rose-breasted Cockatoos (Galahs) possess elongated crown feathers, which when erected in excitement or when landing as a greeting, simply make the head look taller. The Moluccan Cockatoo has a backward curving, floppy crest of yellow and salmon pink; when raised the broad feathers plus the ability to puff up the feathered cheek areas makes their face swell in menacing fashion. The bizarre-looking, but beautiful, Palm Cockatoo has a cascade of spiky black plumes that can be raised or lowered depending on the bird's mood. More sophisticated ones are found in the Sulphur-crested Cockatoo, which has brilliant yellow plumes overlaid with white feathers. However, it is the pink and white Major Mitchell's or Leadbeater's Cockatoo that takes the prize with its erected crest exhibiting a fan of concentric red and yellow bans often coupled with wild head gestures and movements.

Many Amazons of South and Central America have what appears to be the rudimentary development of a head crest or

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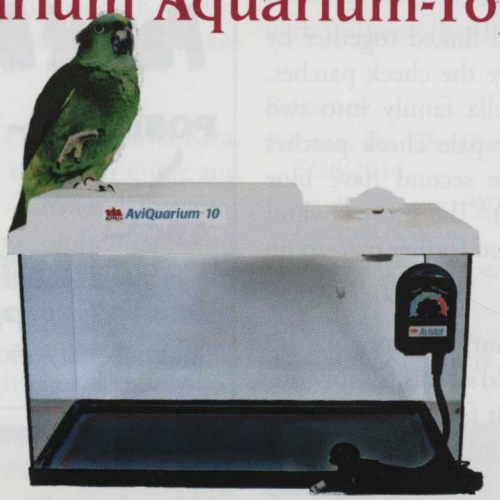

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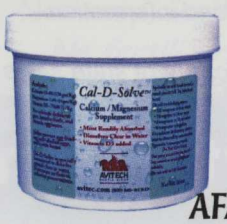

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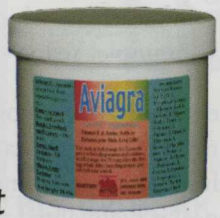

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raised neck feathers with the best example being the Vinaceous Amazon. However it is the Hawk-headed Parrot, which possesses cape-like plumage on the neck that has evolved into a wonderful ruff of rich maroon feathers edged in blue. When in full display, the effect is startling, as the entire head is now framed by a large fan of feathers, looking like an Indian headdress from the Old West.

I have raised Indian Ringnecks (lutino mutations), caiques; and I tried to raise Eclectus parrots.

Indian Ringnecks seem to have excellent feather condition almost all of the time, and perfect conformation. With all the possible color mutations, they provide endless fascination. Recently, I saw a male Barraband Parrot (aka Supurb Parrot) that could rival any Ringneck when it comes to condition of its feathers.

Clownish caiques have a clear demarcation of colors, uniform-like, in their pattern of green, white, orange/yellow, black. In addition, the Black-headed Caique and the White-bellied Caique look so complementary together, you have to have two! (or more)

Eclectus with their extreme sexual-dimorphism and physicality were a challenge to breed, but easy to appreciate. Eclectus feathers seem hair-like. This is particularly noticeable on the female's breast and abdomen because the colors blend where the feathers loosely overlap, giving a fur-like appearance. Eclectus never go into a hard molt, but rather drop a few feathers a couple of times throughout the year.

Australia's eight species of Rosellas are all linked together by certain feather characteristics. The first are the cheek patches. The cheek patch colors divide the Rosella family into two subgroups. The first group has white or pale cheek patches (example, Golden-mantled Rosella). The second have blue cheek patches(example, Crimson Rosella). The most obvious feather distinction, however, is the scalloped feather pattern on the backs of all Rosellas.

Lories and Lorikeets must be the most beautiful among parrots and among the most beautiful of the world's birds, simply due to the myriad of colors they possess in their feathers. All Lories, with perhaps one single exception, are brightly colored, some of which are exceptionally striking with red and blue or red and green predominating in their plumage. Some exhibit varied combinations of colors and some an interesting combination of feather forms. The Papaun Lory, as an example, has tail feathers of extreme and dramatic length, while some others have unique narrow feathers, which give the head and neck a spiky appearance (example, Yellow-Streaked and Duyvenbode Lories).

The feathers of my Blue-front Amazon, Lola, have a pleasing effect to my senses. Her canopy-like green body covering is both soothing and exotic and very appealing to my eyes. Her feather appeal is highlighted when she is excited and exhibits her

Yellow-streaked lory *(Chalcopsitta scintillata)*

Duyvenbode's lory
(Chalcopsitta duivenbodei)

previously hidden colors. In greeting me in the mornings, she fans out the dozen multiple-colored feathers in her tail consisting of a perfect pattern of yellow, green and red. I am treated a second time when I move her to another location and she flaps her wings revealing more of her red and yellow. Her face is set off with the addition of turquoise blue that joins the yellow behind her bright eyes. When I am close to her, I can enjoy the distinguishing Amazon aroma with its own sensual appeal. Finally, when she is relaxed, she enjoys my touch as I scratch behind her neck, and we experience that enviable, inter-species bond that many of us have and cherish with our feathered friends.

In conclusion, I will never forget one trip I took to Costa Rica. We were on a bus of about 15 bird geeks when our guide and driver stopped at a bridge crossing the Tarcoles River near Carara National Park. Below, I saw some ominous looking crocodiles basking in the fading sun, but was not aware of why we stopped. The crocs were not doing much, so I started to look around. Finally the realization of our ***raison etre*** for being there, at this time of day, became amazingly clear. I counted 65 Scarlet macaws flying at different latitudes to roost just outside of the park. There was no place on earth I would have rather been at that moment. It was stunning.

There is not a more beautiful feathered creature than a Scarlet macaw in flight when the sun's rays hit those rich colors of red, yellow and blue. All of the larger macaws, and certainly, Lola, my Amazon, and the many parrots I described above have beautiful feathers, but the Scarlet macaw, in flight, is "the thing with feathers" that I admire most for its beautiful quills.

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