FEATHER PICKING AND SELF-MUTILATION IN BIRDS
Jeannine Miesle
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This paper incorporates the notes taken from Dr. Bob Dahlhausen’s October 2016 lecture on feather picking, two of his images, additional information provided by Jeannine Miesle, and images from other veterinarians and members of “The Science of Avian Health” Facebook group. All the text is from the notes taken at Dr. Dahlhausen’s lecture. It has been edited for clarity. Some new information was added by J. Miesle; this additional information is in italics and within parentheses. The author is indebted to Drs. Bob Dahlhausen, Julie Burge, Sofia Sangushko, and the members of the group for images they contributed.

INTRODUCTION
Feather destructive behavior and self-mutilation are two of the most frustrating conditions veterinarians have to deal with. We often see birds with this disorder on a daily basis. Picking means something’s wrong; it could be an infection or a physical disorder, or the bird may have injured itself on something in the environment. There are many possible etiologies, or causes, and they may be physical or psychological. Sometimes physical causes can be combined with psychogenic causes; one thing starts the picking, and it continues for another reason.

1. Possible Causes of Feather-Picking
1.1 infectious etiologies of feather-picking:

- **Viral diseases**, such as Avian Bornaviral Ganglioneuritis (PDD), Polyoma Virus, Circovirus (Psittacine Beak and Feather Disease-PBFD).
- **Bacterial diseases**, such as *Staphylococcus epidermitis* (a staph bacterium found on the skin) and mycobacterium. Staph is easily transferred to the birds from our hands.
- **Fungal diseases**, such as pitirosporum.
- **Parasites and protozoa**.

There can be an infectious agent present, so we have to identify the agent. These agents may not be the cause. Often the etiologies are secondary to the problem. The bird may experience a traumatic event which leads to bacterial or fungal growth; this then triggers the feather picking.

1.2 Non-infections causes of feather picking

- **Nutritional deficiencies**
- **Traumatic events**
- **Behavioral aberrations**
- **Allergens**, particularly air-borne allergies; the Ohio valley has a high mold count
- **Chemicals** used in the home
- **Toxicities**, such as cigarette smoke and air fresheners and hair sprays
- **Hormonal imbalances** and **reproductive behaviors**
Neoplasms, or growths, including cancer, seen mostly in smaller birds, but we are seeing more of it in larger birds since there is an increase in the aging population, and that’s when most neoplasias occur.

Developmental and genetic causes, mainly in passerines (canaries and finches); however, we see it in psittacines, also.

If we can properly diagnose and treat the cause, we can work on correcting the problem. Even with secondary illnesses, there will be other issues, such as lesions. If those problems are not cleared up, the picking behavior won’t change, and without correcting the behavior, the infections won’t resolve.

2. The Avian Veterinarian’s Role

2.1 Taking the history.

When I first see the bird, I will take the bird’s medical and behavioral history from the client. This is necessary for a successful diagnosis and treatment of feather-destructive behavior. I will obtain the following basic information:

- The bird’s age, if known and length of ownership
- The source of the bird—(*purchased, rescued, or adopted*)
- Husbandry: What is the bird’s diet? What is his cage like? (*Is it large enough? Is it kept clean? Is the bird allowed out of the cage, or is it in the cage all the time? How much time is it out? How clean is the house and areas where it plays? Are there toys in the cage? Are they of appropriate size and texture for that species? Are they changed often?*)
- Social interaction with the owner, family, and other birds. (*Is the bird aggressive with anyone? Is this a one-person bird?*)
- (*Was the bird parent-fed or hand-fed? Was it weaned properly?*)

2.2 The Feather Disorder

- When did it begin?
- Have there been any changes in the environment?
- What events took place immediately prior to onset?
- Was it a gradual or acute onset? If sudden, there’s usually an organic cause as opposed to that which causes gradual onset.
- When does it occur? Overnight? (*When the bird is alone in the cage? During the day with the family? When it is noisy in the house? Quiet? When the owner is at work?*)
- Do you see it happening? Look for chewed feathers by putting clean papers in before bedtime and before work.
- How long has it been going on? The longer it goes on, the harder it is to correct.
- Does the bird appear to be pruritic? (*skin is red, sore, and itchy*)
- Does it damage the feather at the level of the skin or just attack the shaft and barbs?
- Does it act normally one second then suddenly go after a certain place on the body?
- Do the feathers look normal, or did the bird bite at the feather and pull it out?
- Is he pulling out blood feathers? Are there blood feathers on the bottom of the cage? Is the bird bleeding?
2.3 The Visual Examination

The exam needs to be systematic and thorough. Special attention needs to be paid to the type of feather picking. The following are diagnostic guidelines:

- How extensive is the picking? Where is it distributed over the body?
- Is it is bilaterally symmetrical? Picking that is the same on both sides of the body tends to be a medical problem.
- Is it random, *e.g.*, just on the chest or shoulder? This is a behavioral problem. They'll pick at whatever feathers they can reach easily.
- Does the bird have ectoparasites on the feathers or skin? These are usually knemidokoptic or scaly mites, or lice with poultry, and are easily treated most of the time.
- Are the feathers chewed? Misshapen? This is often a sign of a follicle infection resulting from improper feather trimming.
- Are there V-notches? Once the feather has grown in completely, there is no more blood in the shaft, so it has no life. They can pick at it without pain, making it more of a psychogenic problem. With V-notches, the bird bites the tip off the feather.
- Is the bird pulling out blood feathers? This is psychogenic, but a different problem to be discussed later.

2.4 The Physical Examination The practitioner will look for the following:

- **Signs of feather dystrophy** on the feathers and skin.
- **Abnormalities in the feathers**, particularly any hemorrhaging when the feather comes in. *(These can be a sign of PBFD.)*
- **Feather cysts**, usually caused by birds chewing on feathers at the follicle level.
- **Genetic feather issues**, particularly in canaries and finches.
- **Improper wing clipping.** This is a huge problem. The feather should be cut between the upper and lower coverts so the clipped feather is hidden between them and not seen. Typical pet-shop clips are done straight across; the wing is pulled open and the feathers clipped so that the cut feather shafts protrude. This results in sharp edges which irritate the bird’s sides. If it is done correctly, only the first few primaries are cut, allowing the bird to flutter to the floor; but if they are cut straight across, the bird will crash since the secondaries give it lift. With a poor cut, the bird will pull its wings into its body and the sharp edges of the cut feathers, which are not protected by the coverlet feathers, will poke the bird in his side. They irritate the bird, and he starts picking at them and his side. He ends up with primary feather shafts that are frayed and going in all directions.
- **Abrasions and ulcerations** on the skin. Excessive flaking is a result of nutritional deficits, specifically the Omega-3 and -6 fatty acids.
- **Excessive fat deposits** around the follicles which can cause picking. Bird skin is thin, and fat deposits can be seen under and on the skin. Once the fat gets deposited around the feather follicles and irritates them, the bird starts picking. He won’t stop as long as the fat is there. It takes 6—8 weeks of dietary management and exercise to rid the bird of excess fat.
- **Lumps, bumps, tumors.**

![Figure 3: Generalized or systemic picking of all the feathers. (Image courtesy Ginger Reed)](image1)

![Figure 4: Localized feather plucking on a cockatoo. (Source unknown)](image2)

**2.5 The Diagnostic Work-Up and Testing**

**2.5.1: Complete Blood Test (CBC):** needed to check for toxicities and sub-clinical diseases.

Birds hide their signs of illness well, and the CBC will find many illnesses before the bird shows signs. It will reveal the condition of the red blood cells and if they are ballooning or immature. This is typical of toxicity such as zinc, lead, or pesticide poisoning and any sub-clinical diseases.
The CBC will also show any fungal toxins from corn and peanuts; these will start an allergic reaction in the bird’s skin, and he will start picking.

2.5.2 **Plasma and chemical analyses** are good tests to run, but there usually has to be severe dysfunction of the kidneys or liver before the values change.

2.5.3 **Gram’s stains**, both oral and fecal, are the second-most-important diagnostic tests available. Gram’s stains will show infection in the mouth and crop which causes picking over the crop. *(Gram’s stains will also show fungal spores, such as pityrosporum, or malacezzia. This is often seen on the skin of birds who are not carefully dried after a bath.)*

To obtain samples, swabs are used to find abnormal flora in the system, such as cornified epithelia. These are usually found in seed-only eaters. They will also detect vitamin deficiencies. Mouth swabs may show mucous and no bacteria; this is a sign of inhalation allergy. Picking under the wing and inside the thighs is typical of inhalation allergy. If both sides are symmetrical, the picking can also be due to a bacterial infection. A common one is Staphylococcus diplococcus, which is easily transferred from the owner’s hands to the birds. All it takes is a few of the organisms to trigger a tremendous reaction in birds. Birds have a high number of cells that respond to organisms and release histamines; those cells are concentrated under the wings and inside the thighs.

2.5.4 **Cytology**

- **Feather Pulp**: The contents of the feather pulp will show yeast and fungal spores; these are the most commonly seen problems. Some bacteria are associated with folliculitis, usually mycobacteria (a bacteria that resembles fungal spores under the microscope). There is an acid-fast test for mycobacteria.

- **Skin Biopsies**. These are not usually done unless we can’t find answers with the other tests. They have to be done under anesthesia; this creates stress on the bird, and it doesn’t usually tell us anything. Full-thickness skin biopsy will show the causative agents of primary folliculitis and the underlying hormonal or nutritional causes. With full-thickness biopsies we will see evidence of secondary damage to the skin—often a thickened, keratinized layer with inflammation. This often happens with hormonal conditions. I usually wait on that till other tests are done.

  *(Dr. Dahlhausen also performs impression tests on the skin which are viewed directly.)*

2.5.5 **DNA and Imaging Tests**

- **DNA tests**: These are usually performed for cases of PBFD and the polyoma virus. They provide evidence of feather dystrophy and the causes of skin lesions, PHV-1 and 2 (Psittacid herpes virus), and chlamydiosis. They will detect any unusual forms that can affect the dermis on birds as well as the presence of aspergillosis.

- **Imaging**: Radiographs, ultrasound, and endoscopy are used if there is a localized area of picking, e.g., picking on one side or in one place only. They can detect aspergillosis, cardiac disease, air sac and pulmonary granulomas, and abscesses. They are used when there are discreet areas of feather picking.
3. Medical Etiologies

3.1 Bacterial Infections: These can be localized or systemic.

- Pharyngitis can cause picking over the breast region.
- A staph infection is suspected when there’s an allergic pattern. You will see picking under the wings, in the patagial area (wing web), and on the insides of the thighs.
- If an infection moves down into the intestinal tract, the bird will pick over the abdomen.
- Inflammation in the oviduct in females, or enteritis in both sexes, can cause generalized or localized feather picking.

(For more information on bacterial diseases, see the four-part series, “Bacteria,” in the files of The Science of Avian Health Facebook group.)

Figure 5: Localized feather picking. The cockatoo is picking only over the abdominal area, indicating a possible infection in the intestinal tract. (Image courtesy Antony Murphy. Used with permission.)
Figure 6: This bird’s feather destruction is more widespread. (Image courtesy Antony Murphy. Used with permission.)
Figure 7: Bacterial Skin infection in a cockatiel. (Image courtesy Stephanie Rose. Used with permission.)

3.2 Fungal infections: These may be localized or systemic.
The skin and feather follicles need to be examined for fungal infection. There may be dermatophytes such as microsporum, trichophytorn, aspergillosis, or Malessezia (pitirosorum). Ketoconazole is used for treatment.

3.3 Granulomas
A granuloma in the lung might cause picking of feathers over that side (localized). (A granuloma is an inflammation found in many diseases. It is a collection of immune cells known as “histiocytes.” Granulomas form when the immune system attempts to wall off substances it perceives as foreign but is unable to eliminate. Such substances include infectious organisms such as bacteria and fungi, as well as other materials such as keratin and suture fragments. [Wikipedia]).

3.4 Viral Infections
3.4.1 Avian Bornaviral Ganglioneuritis (PDD)

Avian Bornaviral Ganglioneuritis can cause feather picking. One-third of birds, both wild and in the pet population, test positive for it. It is not easily transferred from bird to bird. To be contagious, there needs to be a high number of infected cells to overwhelm the immune system. Just because the bird is shedding the virus doesn’t mean other birds are going to get it. It doesn’t go through the air, and it only lives 8 hours outside the host.

ABV causes inflammation in the nerve ganglia. Think of a nerve ganglia as a junction box where multiple wires meet. The virus causes the nerve ganglia to become inflamed. What we see with the disease depends on where the nerves are that have become inflamed. PDD is now called “avian ganglioneuritis.” This indicates inflammation of the nerve ganglia.

In a study done a few years ago, researchers found that the lesions occur in the dorsal or sensory root of the spinal cord. They confirmed that lesions in this area caused feather picking and mutilation. This is called “peripheral neuritis.” It cannot be confirmed with a skin biopsy; the clinician has to biopsy the dorsal root of the spinal column, and that can’t be done in a live bird.

Where the lesions are in the spinal cord will determine which areas of the skin the bird picks at. If the bird is treated for ganglioneuritis, the areas will clear up.

**Figure 8:** Neurological signs of self-mutilation. In this bird, the lesions were higher up in the spinal column, resulting in picking all over its body. The formation of scabs at the level of the skin indicates a problem with the sensory root ganglia. (Image courtesy R. Dahlhausen) *(This bird is wearing a plastic collar to prevent picking.)* Copyright © February, 2016. All rights reserved. Images and videos may not be reproduced or used without the express written consent of the owner.

**Figure 9:** Signs of self-mutilation in an African Grey (Image courtesy R. Dahlhausen) *(This bird is suffering from Avian Bornaviral Ganglioneuritis)* Copyright © February, 2016. All rights reserved. Images and videos may not be reproduced or used without the express written consent of the owner.

With Avian Bornaviral Ganglioneuritis, lesions in the brain stem lead to Central Nervous System signs such as ataxia and a wobbly gait. Even if the bird only shows signs of CNS involvement, it will still have lesions in the digestive tract; this results in its inability to absorb or digest nutrients properly.

These birds display feathers that are missing the barbules from the wing and tail feathers. Barbules hold the barbs together. They are often called “silky birds,” like silky chickens; you can comb the feathers since they spread open. The feather structure is so flimsy you can see
through them. No anti-viral agents have been shown to work. “Amantadine” is one touted to work, but it doesn’t.

*(For more information on Avian Bornaviral Ganglioneuritis [PDD] see the paper in the files of “The Science of Avian Health” Facebook group: Understanding Avian Bornaviral Ganglioneuritis/PDD)*

3.4.2 Psittacine Beak and Feather Disease (PBFD)

(Although PBFD, a serious and fatal viral disease, can affect any species, lovebirds, African greys, and cockatoos are the most often afflicted. It is highly contagious and is passed down vertically, from hen to egg. It is caused by the Circovirus (Genotype 8) and has had a huge impact on the companion bird population in the United States in the past. Today, it is not as prevalent in the U.S., but is still seen in large numbers in Australia, Europe, and the Mid-east and other countries. These birds will eventually lose all of their feathers. Although they may live for a while in this condition, their lives are shortened by the disease. There is no treatment, no cure, and no vaccine.

*For more information on PBFD, see the paper, “Psittacine Beak and Feather Disease: An Overview” in the files of The Science of Avian Health Facebook group.*

Figures 10, 11: Psittacine Beak and Feather Disease in cockatoos. These birds are severely affected by the Circovirus, Genotype 8. (Image courtesy Sofia Sangushko. Used with permission.)

Figures 12: Pulled feathers with retained blood and sheath from a bird with PBFD. (Image courtesy Ellen Uittenbogaad. Used with permission.)
Figure 13: Dystrophic feather pattern in a PBFD cockatoo. The feather become infected in the follicle and does not develop properly. (Image courtesy Ellen Uittenbogaad. Used with permission.)

3.5 Allergic patterns

When allergies are present in birds, there can be localized or generalized feather loss. Allergic reactions are due to the localized release of histamine in the skin when the bird is exposed to the allergen. The birds will flick their feathers, twitch, reach around and start digging at a spot, just as they do with ectoparasites when they are experiencing an allergic reaction. The causes of allergic reactions are:

- **Staph infection**, oral and enteric
- **Inhalation toxicosis** from air fresheners, candles, and cigarette smoke
- **High mold or pollen count**. The Ohio River Valley is known for high counts.
- **Ingestion toxicosis**. This can be a result of fungal antigens and toxins or heavy-metal toxicity.
- **Food allergies**, particularly to peanuts, which are a legume. They contain aflatoxin, a mold spore, because they grow underground. Look for dark spots on the nut or the shell.
- **Nicotine** in smokers’ hands and skin, causing skin allergies and pododermatitis.

*(See the papers, “The Effects of Tobacco Use on Avian Species,” “Smoking Handout,” and “Candles and Other Household Dangers” in the files of the Facebook group, “The Science of Avian Health.”*)

Figures 14 and 15: Whole-body feather loss, pruritis, feather pulling, and mutilation from living with five adult smokers for many years. This cockatiel (Pedro) only lived four months after coming to live with me. (J. Miesle)
Figures 16 and 17: Pedro’s underwing and side had bleeding sores, and his uropygial gland and pygostyle were severely damaged. (J. Miesle)

Treatments for Allergy

- Chelators (DMSA) for toxins, *(dimercaptosuccinic acid, chelation for arsenic, cadmium, lead and mercury)*
- Haloperidol injection. This is a potent antihistamine; the dose varies with species given.
  - It is prescribed for 3-6 weeks, and it lasts about a month; CAG: 1-2 mg; Quakers are very sensitive, 0.25 -0.5 mg; Parrotlets 1 mg
  - Oral haloperidol doesn’t work in birds; it is made for human GI tracts. Birds’ digestive systems are different; they have a different pH in their blood.

3.6 Parasites

- **Ectoparasites**: Generally found on outdoor birds. These are rare in the Midwest since most pet birds are kept inside. *Knemidokoptes mites* *(scaly leg and face mites)* are the most common ones. Ivermectin is the drug treatment of choice.
- **Endoparasites**: The one most seen is giardia, found usually in cockatiels, parakeets/budgies, and lovebirds. It is not a big problem for feather-picking cockatiels.
- **Microsporidium** is the species more commonly seen; it produces very tiny cysts *(oocysts)* which often go undiagnosed.

3.7 Hormonally Induced Feather Picking and Reproductive Activity

Feather picking due to hormones is a big concern for birds, particularly in Amazons. Many birds are low in thyroid output, and the thick keratin layer of skin on the feet becomes sore. This leads to infectious dermatitis. The birds begin to chew at their feet and will actually peel off sections of skin on the feet. The bird chews on the poorly keratinized, thin skin on the feet and toes, and self-mutilation develops. Pododermatitis (bumblefoot) develops quickly from this.

*(See the papers, “Treatment and Resolution of Pododermatitis” in five parts in the files of the Facebook group, “The Science of Avian Health)*

Treatment: The bird needs a thyroid supplement to thicken the keratin layer. It takes 6-8 weeks to get under control, and he will stop chewing once the skin is healed. These birds will typically retain their feathers too long, and they will not molt well. They will usually be obese.
Reproductive activity is another cause of feather picking, especially in hens of the Old World species. In the wild, the hen stays in the nest box while the male flies back and forth getting food and keeping predators away, and then they switch places so the female can eat. A lot of activity goes on for both male and female. Pet birds don’t have this level of activity, but the hormones are still pumping out and telling them they need to gear up for the energy expenditure ahead. So they have all this pent-up energy during this time and no way to get expend it. This leads to picking and self-mutilation. If this is not checked, they will chew through the skin and feathers on the chest and right into the muscle. This is especially true in moluccans, and they will actually chew holes in the breast. This causes irritation, leading to more chewing and mutilation. Birds who are not breeders will also pick and self-mutilate out of frustration.

Treatment: The wound needs to be cleaned, sewn up, and the area bandaged. The hormone levels need to be brought down through treatment. The wound needs to be kept covered.

Figures 18-20: This cockatoo has self-mutilated to the point of puncturing the skin. Infection will set in quickly. (Images courtesy Dawn Graham. Used with Permission.)

Sexually-induced feather-picking behaviors are different from normal behaviors. They are often initiated when the bird is petted and stroked on its back, body, and underwings and they become overstimulated. The increased daylight, soft foods, touching, and presence of birds of the opposite sex trigger such reproductive behavior. If you decrease the calories, light hours, and handling it helps.

Figure 21: Norman has been self-mutilating for 5 years now. He has had surgery and has been on 2 medications and nothing has helped. (Image courtesy Jennifer Lewis. Used with permission)

Figure 22: The same bird, wearing a protective sweater. (Image courtesy Jennifer Lewis. Used with permission)

(See the papers in the files of “The Science of Avian Health” Facebook page for more information on controlling hormonal and reproductive behavior and egg-laying.)
4. Genetic Causes

Feather cysts are usually genetic in nature and found mostly on canaries. They are basal cell tumors and among the psittacines are more common in macaws and African greys. The follicle can’t grow feathers anymore, so keratin and debris accumulate, and this built-up debris grows into a hard nodule. Once the follicle is damaged to that point, there is not much we can do but remove it surgically. Birds will pick at these and damage the skin and follicles.

Straw-feather disease in canaries is also genetic, as is lutino cranial baldness. The head under the crest is devoid of feathers. “Straw-feather disease is a condition in canaries in which the feathers do not develop completely. The cause is unknown but may include certain genetic factors and possibly metabolic factors as well. It is not the same as the chronic feather cysts that we see in canaries.” (R. Dahlhausen, personal communication.)

Figure 23: Feather cysts on a canary. (Image courtesy Julie Burge. Used with permission)
Figure 24: Feather cysts in a cockatiel. (Image courtesy Claudia Cano. Used with permission)

(For more information on Lutino Cockatiel Syndrome, see the paper on the Facebook page, “The Science of Avian Health.”)

5. Cutaneous masses

5.1 Lipomas

Lipomas are fatty growths commonly seen on the keel, vent, abdomen, and medial thigh areas. A bird’s skin is pretty transparent (only 10 cell layers thick) and it looks like there is fat under the skin; but if you look carefully, the mass is formed in very discrete (single) units. Birds will start picking when these masses get a little bigger.
Figure 25: Budgie with a lipoma
Figure 26: Cockatiel (Marcie) with xanthomas on the wings, body, and elbow joints. This was one of my rescued birds. (J. Miesle)

(To read the entire story of this bird, go to www.beautyofbirds.com and enter “The Miracle That is Marcie,” or just type “Marcie” in the search box.)

Figures 27 and 28: Marcie. There were multiple xanthomas on the body. The first picture is of the elbow joint with a discreet xanthoma, and the second with the xanthoma resolved. The skin and bone of the joint are seen. (J. Miesle)

5.2 Xanthomas

Xanthomas are also fat deposits, but with cholesterol added. It was previously thought that once the cholesterol was deposited it couldn’t be resorbed and eliminated, but it will with effort and management. Xanthomas are featherless, yellow-orange growths that can occur in a discrete or diffuse state. They are vascular and friable, and usually left untreated. They incorporate the follicles, and since the follicles are attached to the bone in the wing, they are difficult to remove. (They tend to bleed and eventually will kill the bird. Some practitioners remove the lump, and sometimes the wing is amputated. Veterinarians try not to remove them but instead manage them with diet, exercise, and treatment. The above bird, Marcie, had several of them and it took a year of treatment to eliminate them.) (Please see the paper, “Resolution of Xanthomatosis without Surgical Intervention” in the Facebook files of “The Science of Avian Health” or the Beauty of Birds website for the treatment protocol I have developed to eliminate these xanthomas without surgery.)
5.3 Neoplasia

These are new growths that may be external or internal. They can be malignant squamous-cell carcinomas, which are usually seen on the face, or fibrosarcomas. Treatment options are surgery and/or anti-cancer agents such as radiation and chemotherapy. Many times these therapies have been successful in reducing the size of the neoplasias.

Cutaneous lymphosarcomas have to be differentiated from mycobacterium since they look similar. Mycobacterium can be zoonotic and will look like a skin tumor. Cutaneous lymphosarcomas are diffuse, clear-to-yellow swellings on the head, neck, or wings. A mycobacterial granuloma looks similar to a cutaneous lymphosarcomas.

6. Behavioral Feather Picking

6.1 Over-preening and Allopreening

Birds preen each other constantly. Allopreening, or mutual preening, can become excessive and sexually stimulating. The birds have too much time on their hands, so they turn on themselves and each other to fill their time. Lovebirds will tear up strips of paper and tuck them under their feathers. (They need things to do, such as interactive toys and toys to destroy, such as wood, papers, phone books. Small birds love to chew balsa wood and large birds love white wood. Pine is good, but check the pieces for resin and cut the resin out.)

Sometimes excessive preening turns into chewing and pulling out blood feathers. This is different from ordinary chewing. The incoming feathers are highly vascular (filled with blood vessels and nerves), and the bird will start pulling blood feathers out at the skin level. This activity becomes painful, and the pain triggers the natural release of endorphins which feels good since it gives them a moment of relief from the pain. Birds become addicted to this feeling, so they will continue to pull the feathers just to feel the relief that the endorphins give. This habit can become a major problem. The earlier it is treated, the easier it is to correct.

Parrots are remarkably intelligent. They form powerful bonds with people, and even though they are mainly captive-bred, they still have wild instincts. This is especially true of cockatoos. The behaviors they exhibit in the homes are similar to those in the wild. With so much of time on their hands, they look for something to do; this leads to aberrant behaviors. We need to understand the natural behaviors of parrots in the wild. Once we know that, we can better understand their behavior in the home.

In the wild, birds feed and forage in the morning and evening, and they spend most of their day finding and eating their food. They eat quietly, consuming a wide variety of foods. These food choices change throughout the year with the different seasons. They feed on fruits, seeds, nuts, berries, blossoms, leaf buds, insects—whatever they can find.

In one study of parrots in Puerto Rico, the researchers noted that the birds fed on 60 different plant species, e.g. palm fruit, leaves, and nectar from woody vines. Different species feed on different foods in the wild.

The feeding process is generally slow and deliberate. In the wild, it takes a bird 8 to 30 seconds to find the piece of food, take it apart, and ingest it. Nesting females will eat 3 to 5 meals a day, each lasting about five minutes. It can take as long as an hour to fill the crop. Then they fly to a
roof-site to slowly digest it. Birds spend an average of 4 to 6 hours a day just foraging. On the other hand, birds in homes spend only 30-72 minutes a day feeding. There is minimal environmental interaction; therefore, their energy needs are greatly reduced. They go to the bowl, fill up—and then what? They have nothing else to do. So they begin to chew their feathers.

**Figure 29**: Ziggy is a six-year-old, adopted eclectus with a history of feather picking. Medical issues were ruled out, so hormones and/or boredom were considered probable causes. He was given anti-depressants and pain medications which didn't help. A complete workover of diet and increased personal time spent with the bird have resolved the condition. Top: July 2016, Below: Dec. 2016. (Courtesy Douglas L. Graham. Used with permission)

### 6.2 Feather-chewing behavior

In the wild, birds chew on objects near the nest site, indicating possession and territory. They also chew the nest site itself to fix it up and rearrange it. In addition, they chew to displace an emotional state, such as fear or frustration. If birds don’t have things they can chew on and destroy in their cages and homes, they will begin to chew on their own feathers.

Some of the natural chewing activities in the wild include snipping off fruits from trees and bushes with their beaks, and plucking at the food with their feet. They are messy feeders, rubbing their beaks on branches, dropping foods, and retrieving them. They are very active while feeding. So the feather-picking behavior is taking the place of all that natural behavior; it becomes aberrant when they can’t do what they would be doing in the wild.

The solution is to make the birds search for their food. Have them work to retrieve it. Place barriers to the food so they have to chew through them to get it. They can manipulate objects through holes, sort through inedible materials, and open up containers. You need to lengthen the time they’re eating to mimic those foraging behaviors in the wild. Dr. Scott Echols has a
book out called “Captive Foraging” which gives the owner many ideas for prolonging the feeding process.

6.3 Psychogenic feather picking

Separation anxiety is a major cause of feather-picking. If you see that feathers have fallen on the floor of the cage while you were gone, you know the birds have been picking. V-notched feathers are another sign of psychogenic feather-picking; look for those on the cage floor also. The birds will start picking the feathers that are easiest to get hold of—over the breast and on the shoulders. They usually don’t pick at the level of the skin, but some do pick at their down feathers.

7. Treatment and solutions

7.1 Physical enrichment

There are many things the owner can do to add enrichment to their birds’ lives:

- Alternate cages, toys, perches, change these around often, and increase the complexity of the caging.
- Add climbing and swinging toys.
- Give them objects to manipulate with their beaks or feet. (*Small birds like the Activi-Toys and baskets to chew on.*)
- Provide wood for chewing that they can destroy, not too hard or soft. (*Balsa is good for small birds and white wood for the larger ones. If you use pine, cut it up and discard the pieces that have the sticky resin in them.*)

7.2 A Study on Enrichment

There was a study done on environmental enrichment with orange-wing Amazons. When the researchers provided enrichment, 6 out of 8 birds had improved feather scores, meaning they picked less. Birds who did not have enrichment had decreased feather scores, indicating there was more feather picking in those birds. .

This same study revealed that environmental enrichment may change brain development. There may be a change in the neural structure in the brain. Enrichment provides a protectant effect. According to Meehan *et al.*, there is a strong relationship between feather picking and the lack of behavioral opportunities. This interferes with the brain’s development and leads to feather-destructive behavior. (*I have also noticed with my rescued birds that if a bird has not had enrichment before it came to me, it takes a long time to get him to learn to play with toys, chew wood, and engage in enrichment opportunities. Some never really get to the point of enjoying these due to previous deprivation.*)

8. Treatment

**Utilize medication:** Dr. Dahlhausen has had varying degrees of success with drug treatment, such as using mood-modifiers and serotonin reuptake inhibitors (SRI’s). Many birds pick out of fear. The key is desensitization—finding out what the bird is afraid of. You can start using medications then gradually wean the bird off them with environmental stimulation. You will need to have the problem controlled for at least three to six months or longer to have a good chance of eliminating it.
Encourage foraging.

Use collars if necessary: Collars are awkward for the bird; they are stressful and frustrating to wear. They can make the problem worse. Some have had success using different types of fabric collars, such as a layered collar. Plastic collars are a last resort.

Figure 30: Dawn Graham made this collar for her extreme picker, Peanut. (Used with permission.)

Figure 31: This is a soft collar I made for Marcie. It was made of two pieces of flannel which were sewn together. These need to be replaced frequently. (J. Miesle)

(For information on making the soft collars, please see Making a Collar for a Bird” in the Facebook group, “The Science of Avian Health.”)

The key is proper diagnosis and treatment. Barbara Heidenreich, at the “Good Bird” website and Sally Blanchard are among the best behaviorists. The book, “The Parrot Problem Solver” is very helpful.

9. Replies to after-lecture questions:

- **Intelligence**: African greys are exceptionally intelligent. Their brains are twice the size of comparably sized birds. But like Amazons, they are hard to work with. Greys, Amazons and macaws are the three smartest birds.

- **Powder-down** is an allergy trigger. Cockatoos produce the most, then cockatiels. Sensitivity to cockatoo dust usually causes a localized reaction in the air sacs. This is usually seen in green-wing and blue-and-gold macaws. The bird will look sick; it can’t breathe, the face will turn blue, and it will gasp for air. This is an acute allergic reaction to cockatoo dander. If the macaws are in the same house and appear affected, get the bird outside immediately into fresh air. This is mostly seen in New World species. (Work to diminish the amount of cockatoo dander that is given off by the bird. Frequent spritzing will help to keep that powder under control.)

- **Bathing**: Feather picking is often due to skin infections, especially fungal infections. Remember to allow the feathers to dry after the bird bathes or is sprayed. You will see superficial molds on the feathers which will cause the pigment to come off. The feathers will change color. You will also see increased fungal infections in the skin and feather follicles. Don’t bathe the bird repeatedly. Once a week is sufficient. (Large birds,
[especially cockatoos] can be bathed more often and blow-dried, and small birds can bathe in a large saucer and be held in a soft hand towel and blown dry with your breath.)

- **Shampoos**: Mold allergens will cause allergic feather picking. **Don’t use shampoos or any commercial spray products on birds.** (Use plain water or a little aloe vera liquid added to distilled water to give relief to bare-skin areas. Recommended by Dr. Dahlhausen) (If the bird is really dirty, perhaps received as a rescue or adopted, or has gotten into something that has made him dirty, or has come from a smoking environment, a bath with Johnson and Johnson Baby Shampoo is acceptable.)

- **Smoking**: Nicotine will process out of the system unless it is really bad, then you will need an oral chelator, such as DMSA. This will collect the toxins by binding to them and carrying them out through the kidneys and with the urates.

- **Substrates**: When using paper substrate, avoid using colored newsprint and shiny papers. *(Do not use any other type of substrate. Corn cobs, nut shells, wood shavings—any of those types of substrate—contain molds which will affect the respiratory system, eyes, and nares and encourage feather picking. Also, you will not be able to evaluate the droppings with these substrates.)*

Many thanks to Dr. Bob Dahlhausen for giving this informative lecture.