



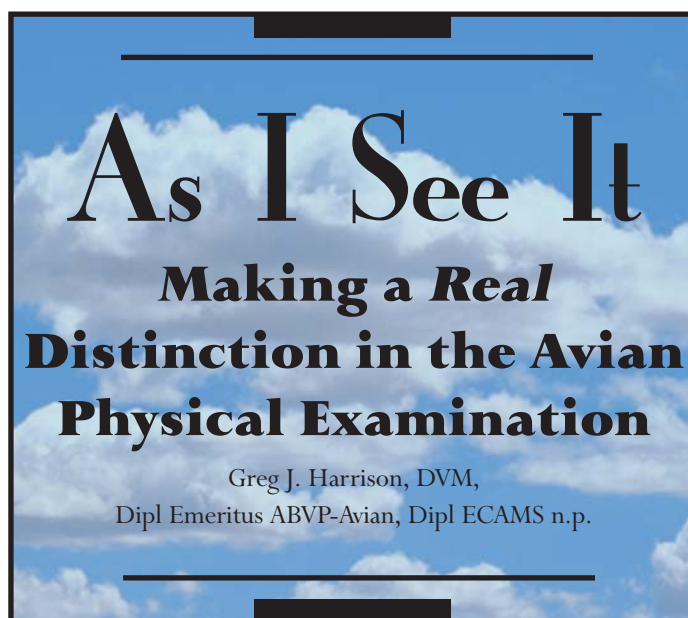
# AVIAN

## Examiner

Number 29

One of the more difficult aspects of communicating with clients, especially those who present a malnourished bird, is to show them exactly what you are seeing so that they are receptive to a diet conversion. The subtle signs of a nutritional disorder may not be obvious, but with magnification you can clearly point out the physical characteristics that suggest inadequate feeding practices.

*Continued on page 2*



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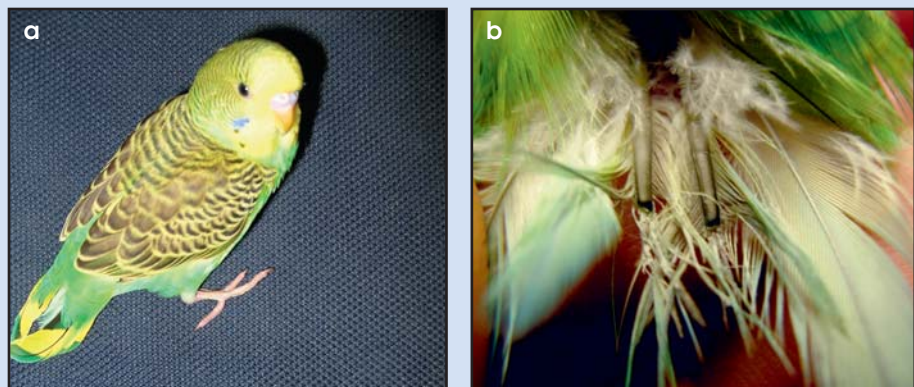
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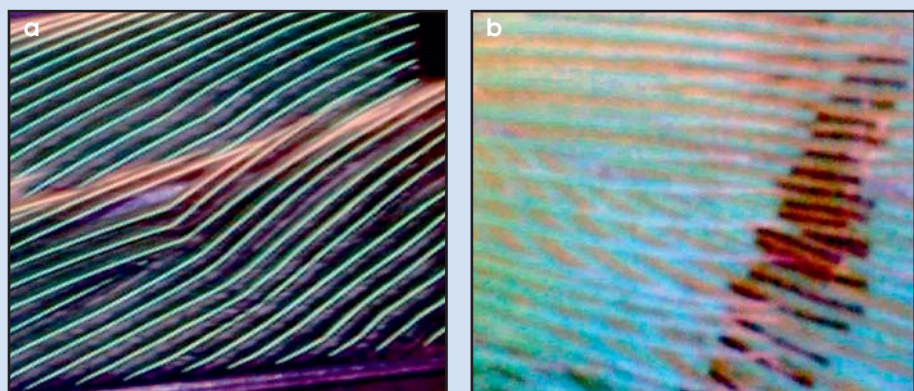
**Fig 1.** In order to demonstrate the use of magnification in a physical examination, a young (4- to 6-week-old) budgie was randomly obtained from a local pet shop.



**Fig 2.** Using a 50x magnification USB microscope (MDS – Medical Diagnostic Services, [www.mdsincorporated.com](http://www.mdsincorporated.com)), the bird was examined. This portable microscope is a valuable tool that captures images directly onto the computer for close observation by and discussion with the client. Still images can be saved for future reference.



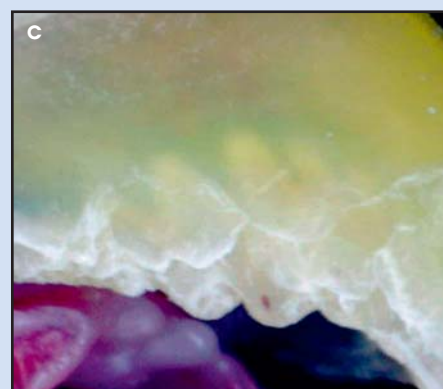
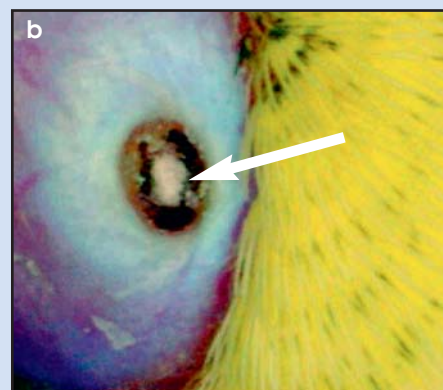
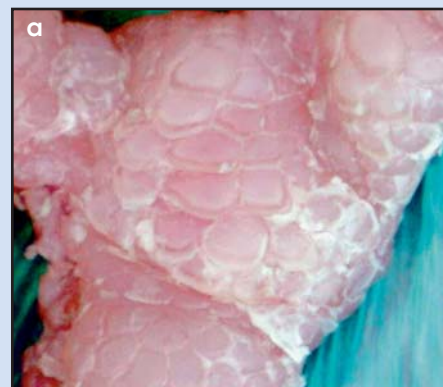
**Fig 3. a)** Upon initial examination, this bird looks pretty “normal” (although tail feathers are bent); **b)** on magnification it is obvious that the primary feathers have barbules that do not interlock and there are broken shafts in the tail feathers.



**Fig 4. a)** Upon closer inspection with the USB microscope, feather abnormalities are evident; and **b)** abnormal feather pigment patterns show black color in places that should be colored green (the LED camera light emits a blue color).

The clinical signs described here are typical of birds that have been raised by parents fed primarily cereal grains with little supplementation beyond mineral blocks. Going through this magnification process with clients makes them aware of the early signs of hyperkeratosis and

causes them to be much more motivated to convert their bird to a better diet. Follow-up evaluations in as short a time as 5 weeks have shown improved integument conditions, which reinforce the change to Harrison’s Bird Foods.



**Fig 5. a)** The dermal scale patterns on the feet appear normal on gross examination, but under magnification, one can see dry flaky skin, which can pile up in a “furrow” when scraped with a fingernail. **b)** An accumulation of dust, skin scales and feather debris is seen inside the nares. **c)** The beak margin appears delaminated into 4-6 layers, and the beak surface itself has a layer of retained keratin.



# Clinical NOTES

## Provision of Ultraviolet Light for Captive Grey Parrots



Michael Stanford BVSc, MRCVS  
Tarporley, Cheshire, United Kingdom

Free-ranging psittacine birds are normally exposed to two ultraviolet wavelengths from the sun's radiation known as UVA (315-400 nm) and UVB (290-315 nm). Both forms of ultraviolet radiation are vital for normal parrot behavior and body function.

### Function of UVA in Psittacine Birds

UVA is important for normal vision in birds, allowing them to visualize UV-reflective plumage. It has been shown that 72% of parrots have UV-reflective plumage so it might be expected that UVA radiation has an important role to play in breeding activities and normal behavior in this group of birds.

### Function of UVB in Psittacine Birds

Birds can obtain vitamin D from their diet or by endogenous synthesis due to the action of UVB radiation on vitamin D precursors secreted onto the featherless areas of the skin. The vitamin D is formed by a number of complex biochemical reactions in the bird involving the liver and kidney. Once sufficient D<sub>3</sub> has been formed by the action of UVB radiation, additional solar radiation transforms the

provitamin D<sub>3</sub> to two biologically inactive compounds. This explains why hypervitaminosis D has never been reported from excessive exposure to UVB light. This contrasts with hypervitaminosis D from excess dietary vitamin D, which is reported in parrots, especially in macaws. It has been demonstrated that chickens require 30 minutes artificial UVB radiation when fed a vitamin D<sub>3</sub> deficient diet to produce enough vitamin D to prevent disorders of calcium metabolism.

### Provision of UVB and UVA Radiation

Exposure to direct unfiltered sunlight is the optimal way to provide UVB and UVA radiation. It should be taken into account that in northern latitudes the amount of ultraviolet radiation received by the birds would be reduced compared with their equatorial homes. The ultraviolet light required for endogenous vitamin D<sub>3</sub> synthesis can also be supplied using artificial lamps manufactured to provide both UVB and UVA radiation, known as full spectrum lights. The UVB radiation exposure of an individual animal depends



Photo courtesy of Kfir and Ernie, The Netherlands

on basking behavior, distance from the light and the presence of UVB filters between the bird and lamp. The amount of UVB produced by artificial lamps decays over a period of time, so the lamps should be replaced regularly (at least every 6 months practically). The conversion of provitamin D<sub>3</sub> to vitamin D<sub>3</sub> in the skin is also known to be temperature dependent, and the provision of heat may be useful in colder climates. The UVB output of most lamps is described in terms of a percentage of UVB production rather than irradiance, and the author recommends a bulb that produces 2.4% UVB.



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# A Closer Look

Nowadays, with everyone trying to stay fit, there is so much emphasis on what to eat and what not to eat. Or even how to *cook* what we should be eating. The same applies to birds. Although feeding any formulated ration is better than any combination of only seeds, there are some differences in the preparation methods that may boost a bird's fitness and vitality.

## Baking

Baking was the first commercial means of making pet foods.

### ■ Disadvantages

- Slower process.
- Requires high-gluten, finely ground flours to hold shape.
- Mixes must be relatively low in fat and require a leavening agent to expand the product for proper texture.
- Some heat-sensitive nutrients can be lost, including 12-26% of the vitamins A, E and thiamin.

### ■ Advantages

- Baked products have a longer storage time than ground flours.
- Baking improves digestibility of the end product.
- The heat from baking destroys microorganisms and denatures anti-nutritional factors, such as trypsin inhibitors and hydrolytic enzymes, which start the process of rancidity.

## Pelleting

Pelleting uses steam, pressure and a binding agent (such as clay-like products) to bind the grains into a firm pellet.

### ■ Disadvantages

- The pelleting process often results in a bland flavor that is relatively unappealing to animals.
- Pellets are less digestible than formulated diets produced by extrusion.
- Pelleted products do not have internal moisture and tend to crumble.
- The formula must contain low amounts of fat.

### ■ Advantage

- Pelleted products are economical to produce because of the low processing cost (used to produce food for 90% of livestock).

## Extrusion

Extrusion, which is the process used to produce Harrison's Bird Foods, is a mechanical means of baking, and the same benefits of baking are achieved, including destruction of microorganisms and anti-nutritional factors. In addition to the heat effects, carbohydrates are caramelized. During caramelization, sugar molecules polymerize into a super-cooled liquid that is solid at room temperature. This process produces complex sugar degradation

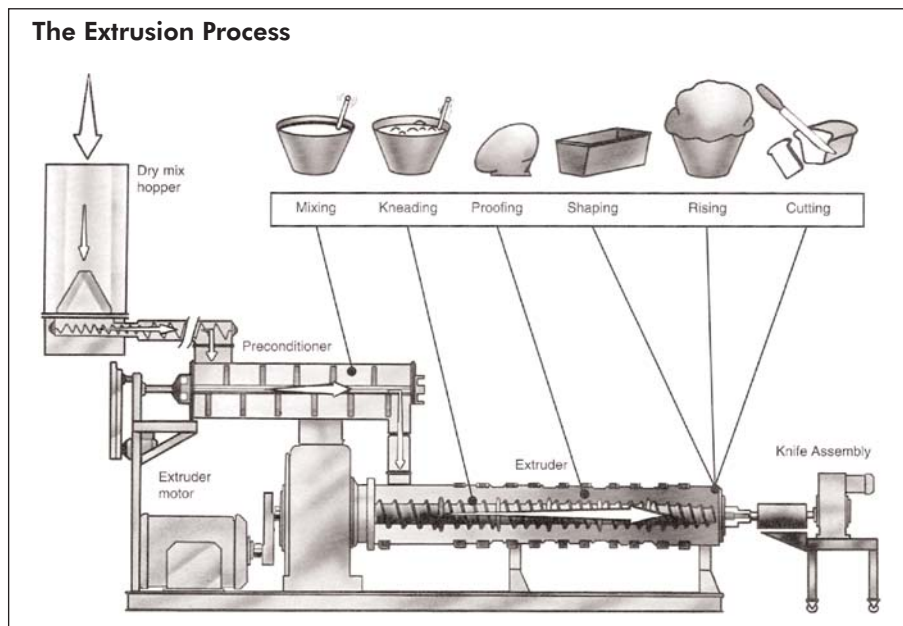
products that impart a caramel flavor and light brown color to the finished material. Simple carbohydrates expand when they are heated, put under pressure and then the pressure is released. For example, the steam in a kernel of popcorn explodes the grain into a white fluffy ball that maintains its shape and fluffiness upon cooling.

### ■ Disadvantage

- Extrusion is an expensive process that requires skill in operating the machinery for quality assurance.

### ■ Advantages

- Extruded products are easily digestible.
- Internal moisture is produced during the extrusion process by being locked in fibers that have been caramelized.
- Extruded products contain internal air; thus, they are expanded in volume, becoming lighter with more surface area in which the flavor can be detected. Because HBD products start with whole grains rather than flours, the end product is relatively dense.
- Extruded grains can be molded prior to cooling to make various shapes.
- Extruded products are crunchy and have enhanced natural flavors, which are appealing to animals. As a result, 90% of modern upscale pet foods are extruded.



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# HBD NEWS



Tanya Harrison Coffinberry

## Spotlight on HBD Staff: Terry Knight



Two years ago, HBD warehouse manager, Terry Knight, instituted a little incentive program for his shipping staff. For every error-free ship-

ping period of 30 days, he would buy lunch. And he has been buying a lot of lunches!

Terry's warehouse team, including Tim Boyce and Mike Fields, ships out hundreds of cartons of Harrison's Bird Foods each week and is successful, in part, because of Terry's experience and expertise. When Vice-president Tanya Harrison Coffinberry located the corporate office for HBD to Brentwood, Tennessee

4 years ago, Terry was the first person to be hired. He started weeks before the first box was shipped out in order to help design the warehouse and develop a smooth delivery service. Prior to this time, he had been with the Service Merchandise store in Nashville for 25 years, working his way up to Operations Manager until the franchise closed.

Terry's long-term loyalty may be a result of his childhood, where he ended up going to 12 different schools from kindergarten through high school because his father's job

required frequent moving. He decided then that he was going to keep his own family in one place.

Today, the 47-year-old is a football fan of the NFL's Tennessee Titans, but even more so of the University of Tennessee Volunteers. His prized Harley Davidson motorcycle, which he drives occasionally to work, even sports the UT orange color. He likes to spend leisure time at home, where he lives with his wife, "C" (for Cecelia), working in the yard or watching movies.



## David Vetter Honored for Entrepreneurship\*

David Vetter, of Grain Place Foods in Marquette, Nebraska, plays a vital role in the success of Harrison's Bird Foods because he is responsible for locating and preparing the certified organic ingredients that make up the various HBD products.

Vetter was recently recognized by the University of Nebraska's Center for Entrepreneurship by receiving one of five awards for ingenuity and drive. According to the organization's president, "We try to select entrepreneurs in categories that serve as role models for the rest of the state. Dave is a great example of that spirit."

Dave Vetter and his father, Don, had a vision in 1977 to connect people to the way their food was produced by growing organic grains. That vision led to the

creation of Grain Place Foods, and though the company has grown and diversified since then, the vision remains the same. Grain Place Foods now has 17 full and part-time employees generating 5 million pounds of organic grains worth an estimated \$1.8 million in sales.

Grain Place Foods produces organic rye, barley and specialty grains for bulk bin sales as well as a full line of rolled grains, which are used in products like oatmeal and granola. Popcorn and pet bird food are other big sellers, combining to make up about 60 percent of company sales. All of the end products have an audit trail. "If somebody is buying a specific lot number of popcorn from us in New York City, we can tell them who grew it," Vetter said. "And if the producer is keeping their records right they can tell us what field it was grown on."

It takes several years to certify a crop and

then to become efficient at managing resources with prescribed materials and practices. The conversion period under the U.S. program can produce organic crops in three years, though it can take 2 to 3 times that to learn actual management practices, Vetter noted.



Cynthia Milligan, Dean of the College of Business Administration, University of Nebraska, presents the Entrepreneurship Award to David Vetter.

\* Adapted from AuroraNewsRegister.com, accessed 4/11/06.



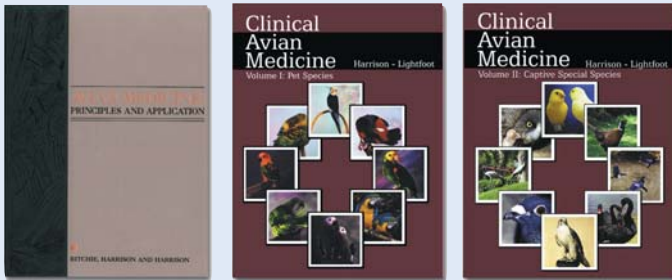
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**Q:** I am very concerned about the methods used to produce most of the palm oil on the market as the production of the palm oil is severely endangering many species and natural habitats. Can you tell me the origin and source of palm oil in the products you've developed and whether the palm oil used meets the standards for sustainable production as outlined on this website: [www.safepalmoil.org](http://www.safepalmoil.org).

Thank you for your time and consideration in this matter.

*Eileen McCarthy, Chief Executive Officer, MAARS - Midwest Avian Adoption & Rescue Services, Inc.; President, TAOS - The Association of Sanctuaries; Co-founder & Director, AWC - Avian Welfare Coalition*

**A:** Here is a little background on the palm fruit oil we are using in Harrison's Bird Foods:

- Our palm fruit oil is coming out of South America and not SE Asia (where this problem is occurring). It is in compliance with current environmental legislation.
- The palm oil we are purchasing is actually helping to reforest the Amazon. They are refurbishing areas in the Amazon that had been recently cleared, adding to diversity of the region in both vegetation and animal/birds.
- The palm project also has social amenities for the workers, including medical care, social support and schools, to name a few.

*Dave Vetter*

*Grain Place Foods*

### Alex: Before and After HBD



In the early 1970s, Alex was already a famous African grey parrot, who, with his trainer, Irene Pepperberg, was revolutionizing the way the bird-owning public looked at avian intelligence. When Irene and Alex first visited Dr. Harrison (Before), the bird had a serious case of aspergillosis and some feather picking. Following a debulk-



ing surgery and other therapy, Alex was converted to Harrison's Bird Foods and has been on it ever since. In early 2006, Dr. Pepperberg was invited by Dr. Vanessa Rolfe to speak to a local bird group; she provided a more recent photo of Alex (After). Alex still eats Harrison's.



## WE GET MAIL



### Thank You

Our lovebirds, Happy and Dopey, look great with Harrison's! Keep up the good work!

*Kfir and Ernie, The Netherlands  
evanderput@yahoo.com*



### Hornbill Rehab

Because I am a bird caretaker, a NYC bird store asked me to take on this hornbill, which was the saddest, scrawniest bird I had ever seen outside of an oil slick. The first month was difficult because the bird didn't want to eat. Finally, with some "monkey see, monkey do," it began snapping down Harrison's Pepper Lifetime. The bird began to show a preference for fruits, and most importantly, took to eat-

ing High Potency Fine, its favorite non-fruit food.

After 3 months, the difference is astonishing. The bird's neck, back and abdomen are filled out; the feathers are brilliant and glossy, the eyes are bright and even the beak changed color.

My birds love your products, which I learned about from the Animal Medical Center. Previously, your foods gave 2 elderly and ailing birds much time that they would not have had otherwise. Thanks so much.

*Louise LoPresti  
louiselopresti@earthlink.net*

### The Organic Difference

Smokey, my 19-year-old African grey, and my 16-year-old rosella have been on Harrison's most of their lives. I appreciate that your foods are organic, and they really seem to make a difference.

*Kathy Fitzgerald  
K4kritters@lycos.com*



### Fruity's Favorite Food

Here is 5-year-old Fruity holding up his favorite food!

*Anthony Isch  
AGISCH@aol.com*



### Another Conversion

I just wanted you all to know happy I am! A few days ago I took Ava Lee (nanday conure) to her vet for a nail trim and a weight check. I picked up a bag of your Adult Lifetime Coarse, went over the conversion process with her and purchased the food. I worried a bit about how she would take to it, but I was totally amazed — she ate it right away and LOVES it! She never really ate her other pellets; we have tried a bunch of different brands, but with no luck. We finally have found our lifetime diet! Thank you so much.

*Melanie Carl  
paintedbird70@yahoo.com*



### Eclectus Transformed

I just wanted to comment on what wonderful products the Harrison's foods are. When my eclectus, Yoda, was hatched, he was sick during the hand-feeding weeks and had many stress lines on his feathers. His colors were also dull.

Just three years later, most of the stress lines are gone and his color is a very bright green.

*Richard E. Arendt  
rearendt@yahoo.com*

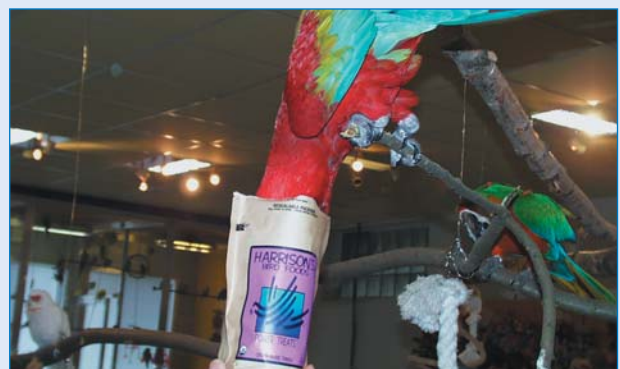


Photo courtesy of AviFoods, Germany



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## **The Results Speak for Themselves**




**Gus at 7 months**



**Gus at 3 years — look at him now!**

Photo courtesy of Shane Lile

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