



## 1989 COMMITTEES

### AVIAN RESEARCH

Dr. Susan Clubb (305) 226-6778

### AVIAN TRANSPORTATION

Clifton Witt (301) 589-1262

### AVY AWARDS

Dale Thompson (805) 252-4871

### CALIFORNIA LIAISON

Laurella Desborough (415) 372-6174

### CITES

Lee Phillips (301) 798-1353

### CLUB PROMOTION

### CONSERVATION

Jack Clinton-Eitniear (512) 828-5306

### MEETS & CONVENTIONS

#### COORDINATOR

Phyllis Martin (813) 837-4555

#### CONVENTION 1990

Paul Alarcon / Dallas Johnson  
(301) 253-5696

### EDUCATION AND MEDIA SERVICES

Kayla Snyder (215) 855-4463

### ETHICS

Trudi Dam (813) 422-5239

### FINANCE

Vicki Fletcher (206) 841-2705

### LEGAL COUNSEL

Dan McCormic (contact thru AFA office)

### LEGISLATION

Ruth Hanessian (301) 424-7387

### MEMBERSHIP SERVICES

Joe McLaughlin (503) 538-6323

#### AFA IN BRIEF (monthly newsletter)

Gary Clifton (602) 946-1304

### NOMINATING AND ELECTIONS

Wanda Elder (901) 853-9988

### PARLIMENTARIAN

Gary Clifton Bus. (602) 945-7736  
Res. (602) 946-1304

### PUBLIC RELATIONS

Linda Rubin (617) 469-0557

### PUBLICATIONS

M. Jean Hessler (714) 548-3133  
FAX (714) 548-0420

### RAFFLE

### SPEAKERS

Jerry Pace (601) 781-2364

### SPECIAL ADVISOR

Dr. Richard E. Baer (614) 836-5832

### STATE COORDINATOR

Amy Worell, D.V.M. (818) 704-0223

### WAYS AND MEANS

A.B. McNabney (415) 945-1785

### BUSINESS OFFICE

Sue Jordan (602) 484-0931

### WATCHBIRD STAFF

Jack Clinton-Eitniear/Editor (512) 828-5306

Jerry Jennings/Editor (818) 884-5476

Dale Thompson/Editor (805) 252-4871

M. Jean Hessler/ FAX (714) 548-0420

Art Director, Production (714) 548-3133

Mark Sargent/Advertising (301) 585-4124

# Psittacine Beak & Feather Disease

will one of your birds die next?

by Branson W. Ritchie, D.V.M., M.S.,  
Phil D. Lukert, D.V.M., Ph.D. Frank D. Niagro, Ph.D.,  
Kenneth S. Latimer, D.V.M., Ph.D. Walsline L. Steffens III, Ph.D.  
Nancy Pritchard, B.S.

If you have endured the helplessness of having a bird diagnosed with Psittacine Beak and Feather Disease (Pbfd), we are sure you will understand the degree of pain and suffering represented by the photographs you see in this article. If you maintain susceptible species of psittacine birds and have not yet been plagued by this disease, *be patient!* Sooner or later you may experience an outbreak. You may be lucky, and the Pbfd virus will only destroy one of your cherished pets. You may, on the other hand, be unlucky and the virus may infect an entire nursery of young psittacine birds. Some choice! We must reach a point where we can control this disease in the same manner in which we prevent distemper, parvovirus and rabies in our dogs and cats. Aviculture needs an effective vaccine for the Pbfd virus.

It was in the mid-1970s that a slowly debilitating disease was first described in Old World and South Pacific psittacine birds. The syndrome was identified by varying degrees of symmetric feather malformation and loss, development of beak deformities and, usually, death.<sup>1,2</sup> Through the last decade, this disease has been given many names, including cockatoo beak and feather disease, beak rot, fungal dermatitis, cockatoo feather picking syndrome, molt disease, feather maturatio syndrome, adrenal insufficiency, thyroid insufficiency and French molt. All of these names describe characteristics which have been associated with the disease. Since the syndrome has been diagnosed in numerous psittacine species in addition to cockatoos, the currently accepted name for the syndrome is psittacine beak and feather disease. In Australia, French molt and Pbfd have been shown to be caused by the same virus, while in the United States they are currently thought to be two distinct diseases, caused by two different viruses.<sup>3</sup>

*What birds are most at risk for Pbfd?*

If you own psittacine birds, you should be concerned about the spread of this fatal disease. Currently, some 30 species of psittacines are considered susceptible to Pbfd,

including:<sup>4,11</sup>  
Sulphur-crested Cockatoo  
(*Cacatua galerita*)  
Galah  
(*C. roseicapilla*)  
Long-billed Corella  
(*C. tenuirostris*)  
Cockatiel  
(*Nymphicus hollandicus*)  
Rosella  
(*Platycercus icterotis*)  
Malee Ringneck Parakeet  
(*B. barnardi*)  
Red-rump Parrot  
(*Psephotus haemotonomotus*)  
Eclectus Parrot  
(*Eclectus roratus*)  
Peach-faced Lovebird  
(*Agapornis roseicollis*)  
Fisher's Lovebird  
(*A. fischeri*)  
King Parrot  
(*Alisterus scapularis*)  
Umbrella Cockatoo  
(*C. alba*)  
Triton Cockatoo  
(*C. triton*)  
Goffin's Cockatoo  
(*C. goffini*)  
Red-lore Amazon  
(*A. autumnalis*)  
Red-vented Cockatoo  
(*C. haematuropygia*)  
African Grey Parrot  
(*Psittacus erithacus*)  
Major Mitchell's Cockatoo  
(*C. leadbeateri*)  
Little Corella  
(*C. sanguinea*)  
Budgerigar  
(*Melopsittacus undulatus*)  
Rainbow Lorikeet  
(*T. haematodus*)  
Hooded Parrot  
(*Psephotus dissimilis*)  
Port Lincoln Parrot  
(*B. zonarius*)  
Bourke's Parrot  
(*Neophema bourkii*)  
Princess Parrot  
(*Polytelis alexandrae*)  
Nyassa Lovebird  
(*A. lilianae*)  
Masked Lovebird  
(*A. personata*)  
Moluccan Cockatoo  
(*C. moluccensis*)  
Indian Ringneck Parakeet  
(*P. manillensis*)

Citron Cockatoo  
*(C. citrinocristata)*  
 Blue-fronted Amazon  
*(Amazona aestiva)*  
 Vasa Parrot  
*(Coracopsis vasa)*  
 Senegal Parrot  
*(Poiciphalus senegalus)*  
 Meyer's Parrot  
*(P. meyeri)*

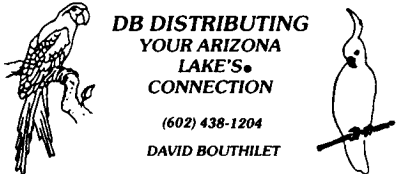
As indicated by this list, the disease is certainly not limited to cockatoos, and is a problem that all of aviculture must address. Interestingly, PBF D has not been diagnosed in non-psittacine species.<sup>3</sup> Unfortunately, the virus appears to be expanding its host range and is being reported in species of psittacine birds that were once thought to be resistant to the disease.<sup>4,11,12</sup> Several years ago, bird owners were told they did not need to be concerned about PBF D in New World species. There is now documentation of the virus in several Amazon parrots. Obviously, the exclusion of New World species as susceptible hosts was incorrect and the actual host range of the virus that causes PBF D remains largely unknown. With the widespread global movement of birds for the pet market, the potential for introducing the highly virulent PBF D virus into wild populations of the world's more endangered psittacine species is a very real possibility.

**What age birds can develop PBF D?**


Clinical signs consistent with PBF D often appear in young birds with the first feather formation after replacement of the neonatal down, and neonates as young as two months of age have been described with classic lesions! While PBF D is reported most commonly in birds less than three years of age, the disease can also develop in older adult birds that have previously shown no signs of feather abnormalities.<sup>1,3,5</sup> We have seen many birds that were more than 10 years old before they developed any signs of PBF D.

**How often is this disease seen in the wild?**

The disease has been reported in wild populations of Sulphur-crested Cockatoos, Galahs, Little Corellas, Major Mitchell's Cockatoos, Budgerigars, and Rainbow Lorikeets. In any one year, up to 20% of wild Sulphur-crested Cockatoos have been found to have clinical signs of PBF D.<sup>13</sup> Although not documented, there is



**DB DISTRIBUTING**  
 YOUR ARIZONA  
 LAKE'S  
 CONNECTION  
 (602) 438-1204  
 DAVID BOUTHILET



**BIRDS & SPECIALTY PRODUCTS**  
**COCKATIELS • FINCHES**  
 BREED AND SHIP 12 MONTHS A YEAR  
**RE-USEABLE FINCH AND CANARY PADS**  
 100% WASHABLE  
 P.O. Box 1207 • Perris, CA 92370 • (714) 943-6370

As of January 1, 1990, AFA's policy was reaffirmed to no longer allow hybrid birds to be offered for sale in its official publication, the *AFA Watchbird*.

**Avian Veterinarian Referrals**



**California Avian Lab**  
 Alan M. Fudge, DVM President  
 Pet Bird Lab Services for Veterinarians  
 Pet Bird Vaccines for Veterinarians

An outgrowth of an avian specialty veterinary practice, California Avian Laboratory provides state of the art diagnostic services & products for over 1000 veterinary hospitals nationally. Let us help you find a local progressive avian veterinarian to care for your pet or aviary bird.

**24 Hour Hotline (916) 722-1169**

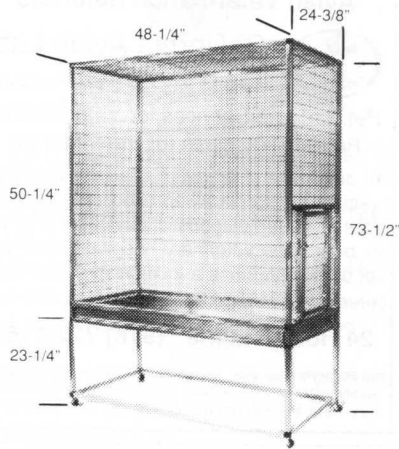
Based on your zip code, we will provide names of participating veterinarians. Listed services provided to veterinarians only. If you have an avian emergency, call your local veterinarian.

**Tell the advertiser you saw his ad in the WATCHBIRD!**



**Commercial Members**

<p>All About Birds, Fairfield, OH          American Bird Company,          Falls Church, VA          Animal Crackers, Greendale, WI          Animal Kingdom, Inc., Chicago, IL          Animal Kingdom, Dallas, TX          Arizona Biological Control Inc.,          Tucson, AZ          Avian &amp; Animal Hospital, Largo, FL          Avicultural Breeding &amp; Research Center,          Loxahatchee, FL          B &amp; R Bird Ranch, Apache Junction, AZ          Bassett's Cricket Ranch, Inc., Visalia, CA          Beastly Distributing, Brooklyn, NY          Bio-Pak Associates, Farmingdale, NJ          Biomune, Inc., Lenexa, KS          Bird Expo, Laguna Niguel, CA          Bird Shop, North Highlands, CA          Birds Breeding Farm, Belgium          Birds of Paradise, Houston, TX          Blue Feather Products, Tucson, AZ          Chicken Ranch, Livingston, TN          Citrus Park Animal Hospital, Tampa, FL          Crofton Animal Hospital, Gambrills, MD          Di Vinci Ltd., Las Vegas, NV          Docktor Pet Center #450,          Watertown, MA          East Coast Aviaries, Inc., Conway, SC          Eight In One Pet Products, Inc.,          Hauppauge, NY          Elgas Studios, Big Timber, MT          Erect Easy Wire Co., Inc.,          N. Hollywood, CA          Fiesta Toys of Florida, Pensacola, FL          Fins, Furs, 'n Feathers, Boca Raton, FL          FTD Aviaries, Nokeville, VA          Greeson's Baby Parrots,          Ft. Lauderdale, FL          Hagen Avicultural Research Institute,          Rockwood, Ontario, Canada          John Ball Zoological Park,          Grand Rapids, MI          Kaytee Products, Inc., Chilton, WI</p>	<p>Kellogg, Inc., Milwaukee, WI          Kim Heflin, Professional Pet Nanny,          The Plains, VA          L/M Animal Farms, Pleasant Plain, OH          Lake's Minnesota Macaws, Inc.,          St. Paul, MN          Lowcountry Parrot Jungle, Ravenel, SC          Luv Them Birds, Miami, FL          Magnolia Bird Farm, Anaheim, CA          Micro Bio Products, Tempe, AZ          Miramar Animal Hospital Inc.,          Jacksonville, FL          Nekton U.S.A., Inc., Clearwater, FL          Parrot Jungle, Inc., Miami, FL          Parrot River, Richmond, VA          Parrotville Aviaries, St. Clair, MI          Petland — Flint, Michigan          Petland — White Flint Plaza,          Kensington, MD          Pets 'n Such, Erlanger, KY          Pets International Ltd.,          Arlington Heights, IL          Pirates Paradise, Mesa, AZ          Professional Pet Nana, The Plains, VA          Purina Mills, Inc., St. Louis, MO          Ratnavira Wildlife Art Gallery,          Fallbrook, CA          Reliable Protein Products Inc.,          Studio City, CA          Santa Barbara Bird Farm,          Santa Barbara, CA          Scarlet Oak Aviaries, Glenwillow, OH          Special Diets Services, Essex, England          Swan Creek Supply—Grumbach          Incubators, Saginaw, MI          Tammy's Landing, Kernville, CA          The Birdello, Soquel, CA          The Reptile Place, Mahwal, NJ          Union Street Veterinarian Hospital,          Schenectady, NY          Wilson's Parrots, Alexandria, VA          Zeigler Bros. Inc., Gardner, PA          Zoovival, Inc., Clearwater, FL</p>
---	---



**MODEL 4824-1A**

46"W x 50"H x 22"D (INSIDE)

**CAGE MADE OF:**

- 1" MOLDED SUPERTOUGH NYLON CORNERS
- 15/16" SQUARE, 0.40" WALL ALUMINUM TUBING
- 2" X 1/2", 16 GAUGE, GALVANIZED BEFORE WELDED WIRE
- 28 GAUGE, GALVANIZED SHEET METAL TRAY
- WIRE FLOORS AVAILABLE
- CAGE SHIPPED UNASSEMBLED U.P.S.



**1-800-456-6780**

CALL TOLL FREE TODAY



**CC Corners Limited**

P.O. BOX 695 • KALAMAZOO, MI • 49005-695

# Magnolia Bird Farm



Owner  
Frank Miser

**We Buy Birds  
We Ship Birds**

**COMPLETE BIRD SUPPLIES  
(714) 527-3387**

Open 9 to 6 Closed Sun., Mon., Holidays

8990 Cerritos Ave.  
Anaheim, Ca. 92804

also frequent discussion of clinical changes consistent with PBF D occurring in wild populations of Moluccan cockatoos, Philippine Red-vented Cockatoos, lovebirds, Umbrella Cockatoos and Citron Cockatoos. While numerous white and pink cockatoo species are included in the reported list of susceptible birds, we have only recently recovered the PBF D virus from a Black Palm Cockatoo.<sup>11</sup> The documentation of the disease in this bird further expands the potential host range of the virus. *No bird* can be considered safe from the highly infectious PBF D virus until we have an effective vaccination program and can eradicate this disease.

*How is the disease recognized?*

PBF D has been recognized as having both acute and chronic clinical syndromes, and disease progression varies markedly. Some birds die shortly after showing the first indication of malformed feathers; others may live for several years in a featherless state. Typically, the first signs of PBF D involve the replacement of normal powder down and contour feathers with diseased, non-viable feathers that stop growing shortly after emerging from the follicle.

Except for reported recoveries in budgies, lorikeets and lovebirds, PBF D is considered fatal.<sup>5</sup> Most infected birds survive less than six months to one year after the onset of clinical signs, and usually die from secondary bacterial, fungal or other viral invaders.

Most pictures of featherless birds illustrate the chronic form of PBF D which has progressed for years. A more rapid form of the disease, with only minimal feather changes, can occur in young birds. This acute form of the disease is characterized by depression, anorexia, crop stasis, diarrhea and death. Neonates that survive the acute form of the disease develop classic feather lesions as they mature. The disease progresses during the ensuing molts to a point where the flight and tail feathers may also be diseased.<sup>5,5,15</sup>

Clinically evident feather abnormalities associated with PBF D include clubbing of developing feathers, retention of sheaths and constriction of shafts. In contrast to the classic presentation of the disease, some birds have substantial involvement of the flight, tail and crest feathers, with only minimal changes in the powder down and contour feathers.<sup>5,5,15</sup> The type of feathers that

are initially involved may depend on the stage of molt at which the PBF D virus first enters the body. It has been assumed that the susceptibility of the powder down feathers is based on their consistent molt pattern, compared to the seasonal loss found in other feather tracts.

Clinical changes in the beak and oral mucosa are characterized by progressive elongation, transverse or longitudinal fractures, decay of the palate and ulcers of the mouth.<sup>5,5,15</sup> Depending on the species involved and other factors that remain unresolved, beak pathology may or may not be present. Classically, beak deformities develop in birds following a protracted course of PBF D where substantial feather changes have occurred. However, to complicate the diagnostic picture, some individuals develop severe beak lesions with relatively minor feather changes. Beak lesions do not routinely occur with some species. With others, such as the Sulphur-crested Cockatoos, Galahs, Little Corellas and Moluccan Cockatoos, beak lesions are relatively common.<sup>5,4,5,11,13</sup>

*How is the disease diagnosed?*

PBF D should be suspected in *any* psittacine bird with progressive feather loss in which malformed feathers can be identified. A positive diagnosis requires the identification of viral induced inclusion bodies in diseased tissues, following specialized staining and microscopic examination. While we now have methods for detecting antibodies against the virus, we do not know whether birds with these antibodies are protected or if they will develop PBF D in the future. Understanding this part of the disease will require further work.

*What causes PBF D?*

Historically, the reported causes of PBF D were numerous and included adrenal insufficiency, hypothyroidism, fungal infections, bacterial infections, environmental toxins, nutritional deficiencies and shipping stress.<sup>5,9,14,15</sup> Due to the accomplishments of disease investigators both in Australia and the United States, we have now recovered the specific, highly infectious virus that is responsible for causing PBF D.<sup>14,15</sup>

*What is a virus?*

Viruses are a group of microorganisms that must live inside the cells of a living being in order to replicate and produce new viral particles. This requirement of living tissue in order to grow is the main characteristic

which separates viruses from all other microorganisms, such as bacteria and fungi, which can live on dead material.

The requirement of living cellular material for reproduction also makes viruses extremely difficult to treat. Typically, any agent that is toxic to the virus will also be toxic to the host cell in which the virus grows. This is why many viral diseases, including PBFD, are considered untreatable. The only way to stop these viral diseases is to prevent them from infecting cells by use of appropriate vaccines.

*Why don't all animals that get a virus die?*

When viruses enter an animal host, they can have several effects on that animal:

1) The virus can induce an effective immune response. This results in blood components (antibodies and special cells) that help destroy the virus and also act to protect the animal from future infections with the same type virus. This type of response is the reason a person has measles only one time. The body responds to the infection, destroys the virus, and is protected from future infections by the same virus.

2) A virus may enter the host in such a way that the immune response is too slow or is insufficient to stop the progression of the virus. This often results in the death of the host. This is the type of reaction that occurs with the rabies virus. The body does not mount an effective immune response, and the animal dies.

3) Viruses can also enter a host and cause a long-term active infection. In this case, the virus may either damage the immune system or, by several mechanisms, protect itself from immune system components. It may be by this mechanism that PBFD virus functions. A similar mechanism is also employed by the virus that causes AIDS in humans. Viruses that produce chronic infections, like PBFD, pose the greatest threat to other animals, since the virus is being constantly shed into the environment where it can infect other hosts.

4) Animals infected with some viruses may become carriers, and while they may appear clinically normal, they will shed large quantities of virus into the environment. A carrier-state is responsible for many of the Papovavirus outbreaks that cause devastating losses in psittacine nurs-

eries. While carrier-states for the PBFD virus are suspected, they have yet to be definitely proven.

*Why aren't all birds infected by the PBFD virus?*

Some viruses have very restricted host ranges and only affect a few species. Other viruses have a very broad range and can infect most species of animals and birds. Pox virus is an example of a virus that has a very limited host range. A canary pox virus only infects canaries, and a falcon pox virus only infects falcons. Rabies virus is a type of virus that is very broad in host range and can infect all warm-blooded animals. It is viruses with a wide host range which are most dangerous. Since it can cause disease in a number of different genera of birds, the PBFD virus appears to have a fairly extended host range.

*What kind of virus causes PBFD?*

The virus that causes PBFD was purified from diseased tissues of birds that had been diagnosed as having PBFD.<sup>14</sup> In order to compare the PBFD virus with other known viruses, a highly concentrated preparation of viral particles was obtained using standard purification tech-

interested in  
something  
different?



join the  
**International  
Softbill Society**

Dedicated to the dissemination of information concerning softbilled birds among interested persons worldwide and to promote the establishment of captive self-sustaining populations of such birds through effective husbandry and management practices.

Membership in the International Softbill Society is open to anyone with an interest in softbills. **Individual membership is \$20.** Foreign membership (outside U.S.A.) add \$5 (total \$25) in U.S. funds. Write to **Steve Amos, treasurer, RFD 2, Box 113, Glover, Vermont 05839.** Members receive our informative publication, *The Honeycreeper.*

**JONES**  
SEED COMPANY

For eleven years, Jones Seed Company has catered to the cagebird industry. We know how to process a quality bird blend, and we also know why it needs to be cost effective.

Make you and your birds happy by using Brooks® Brand Bird Seeds.

Write or call for information.

**JONES**  
SEED COMPANY

Rt. 2, Box 114  
Lawton, Oklahoma 73501

(405) 248-0051  
FAX (405) 355-0781

*Quality Through Caring*

niques. The microscopic structure, protein composition and type of nucleic acid the virus contained were then examined. When these components are jointly examined, they can be viewed as the "fingerprint" of the virus. These parameters were then used to compare the PBFV virus with other known viruses. These investigations revealed that the PBFV virus was a 12 to 16 nanometer non-enveloped virus with a single stranded circular DNA genome. These characteristics were unlike any of the other viruses currently known

to cause disease in animals. From a scientific standpoint, PBFV virus is extremely interesting because it represents an entirely new family of pathogenic animal viruses. We used to know of 21 families of animal viruses, now we know of 22.

*How contagious is the PBFV virus?*

The PBFV is extremely contagious, particularly to young birds. PBFV-positive birds should definitely not be maintained where exposure can occur to psittacine neonates or to endangered species. Exposure of

neonates to the virus in the nursery can cause most devastating losses. We have investigated nursery outbreaks where up to 40 cockatoo babies have developed PBFV from a single exposure source.

Although the disease is most common in young birds, older birds are not necessarily safe from the virus. There is nothing magical about birds attaining the age of three. We have worked with several birds that had no signs of PBFV until 10, 15 or 20 years of age. No bird will be safe from the PBFV virus until we have an effective vaccine.

*How is the virus transmitted?*

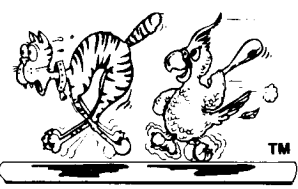



We know the virus is present in diseased feathers. With the high viral concentrations in infected feather follicles, it is likely that the virus can be transmitted by preening activities or by ingestion of feather dust. We have also recovered PBFV virus from the feces of infected birds, indicating the potential for viral transmission through contact with contaminated feces. Several reports indicate the possibility of clinically normal adults producing neonates with clinical signs of PBFV in successive breeding seasons. This finding suggests that a carrier-state may exist, in which an apparently normal parent transmits PBFV virus to offspring.<sup>1,3,5,16</sup> In most cases of suspected parent to offspring transmission, investigations indicate probable exposure to the PBFV virus through sources other than the parents.

*How long can the virus remain infective?*

Some viruses can live for long periods in the environment, while other viruses can live only minutes outside the host. Typically, it is the presence of a lipoprotein envelope which surrounds some viruses that determines how long the virus can persist in the environment. Viruses that have an envelope usually do not survive long outside the host and are sensitive to most disinfectants. Viruses that do not have an envelope tend to be more stable in the environment and are resistant to many disinfectants. Unfortunately, PBFV virus does not have an envelope, and is probably very stable in the environment, resistant to many disinfectants and can remain infective for long periods of time.

*How can I protect my birds from this disease?*

Currently, there is no effective therapy for PBFV, and, because it is

## Sleek & Sassy™ Naturally Nutritious fresh & clean enriched garden diets with fruits and vegies, PLUS a complete Pellet & Crumble Diet!

**Sleek & Sassy Bird Diets** contain only fresh, clean & naturally nutritious ingredients! Vitamins, minerals, plus all essential amino acids! No food coloring or oil is added! **Sleek & Sassy Enriched Diets** are blended specifically for Exotic Birds so that health and longevity are enhanced!

**Sleek & Sassy Enriched Diets** were developed by modern research. Veterinarians, nutritionists and lab consultants have contributed to this outstanding development! **Sleek & Sassy Enriched Diets** are totally assimilated by the birds so that the bird receives total nutrition! We have researched extensively to make a well-balanced healthy diet, with a good variety of seeds, fruits & vegies for your friends' taste buds!

Featuring  
**Sleek & Sassy™**  
**Enriched Garden Diets with Fruits & Vegies**  
for Budgies, Finch, Canary, Conure, and Small Hookbill.  
Also complete pellets & crumbles.

**Garden Lg. Hookbill** 3 lb. package  
or **Large Hookbill Treat** 1 lb. package } **\$6.00**

Send money order, Visa, MasterCard. Please be sure to specify which diet when ordering!


- HILL TOP TOYS™
- KELLOGG'S HANDFOOD
- BARRON BOOKS

- NEKTON VITAMINS
- SPRAY MILLET

## Wildwood Aviaries

MANUFACTURERS AND DISTRIBUTORS

P.O. BOX 497, MONROE, OR 97456  
Send 50¢ for further information.  
Sleek & Sassy Distributorships Available.



**Send \$4.00 per 2 lb. pkg.**

Includes shipping in continental U.S.A.

# FOR SALE

## World's Largest Breeding Stock of the Almost Extinct Western Cape Parrot *Poicephalus robustus fuscicollis*

Due to owner's retirement, the above unrelated birds, 10 pairs, in full production, and 4 pairs almost mature, as well as some young, will be sold to reliable breeders for prevention of extinction. The Western Cape Parrot (*Poicephalus robustus fuscicollis*), is a wonderful, calm, quiet and very affectionate parrot. Also selling 50 mature African Greys. Partial trade of a few pairs of very rare species could be considered. We have approved quarantine facilities. Offers

invited. We import and export and would appreciate price lists for parrots and all kinds of pets. For further information, write to:

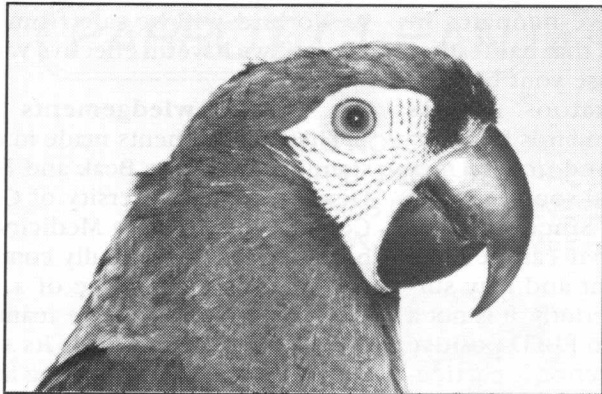
### Non-Profit Parrot Breeding

(for preservation of endangered species)

P.O. Box 120, S-274 00 Skurup, Sweden

Telefax: (009) 46 40 927778

ID Name: Skanska Luftwards AB



**AVIGEN**, formerly the Animal Genetics division of Vivigen, provides the highest quality cytogenetics service available to veterinarians and bird breeders. **Genetic Sexing** involves pulling blood feathers from your bird and sending them to our laboratory. Cells are extracted from rapidly growing blood feathers, placed into tissue culture, harvested and prepared for study under the microscope. The chromosomes are analyzed to determine the sex of your bird.

**AVIGEN** is also using chromosome analysis to determine the sex of endangered species for the U.S. Fish and Wildlife Service and zoos across the country.

Call or write for additional information.

### Romeo or Juliet?

- Genetic Sexing available at Avigen
- Chromosome analysis reveals the genetic sex of your bird
- A non-invasive alternative to surgical sexing
- 100% accurate
- Now at lower prices

Yes, send information about AVIGEN'S Genetic Sexing.

- Veterinarian  
 Breeder  
 Pet Store Retailer  
 Kits  
 Other \_\_\_\_\_

I am interested in having the following birds sexed:

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

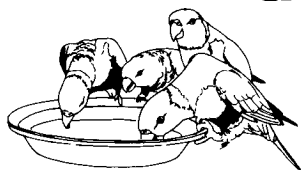
Phone \_\_\_\_\_

## AVIGEN

AVIAN GENETIC SEXING

P.O. Box 4160  
 Pagosa Springs, CO 81157  
 (303) 731-4499

## LORIES DELIGHT



### Dry Powder

The results of 5 years of research by an experienced lory breeder with 35 years of work with a variety of birds.

This nutritionally complete formula is designed to be given with the addition of nectar and fresh fruit.

#### FOR BREEDING BIRDS:

75% Lories Delight  
15% Nectar  
15% Fresh Fruit

#### FOR PET BIRDS:

90% Lories Delight  
5% Nectar  
5% Fresh Fruit

#### LORIES DELIGHT:

- firms up droppings, reduces mess
- will not spoil in hot weather as do liquid diets
- is, so far, producing third generation youngsters

Call for prices

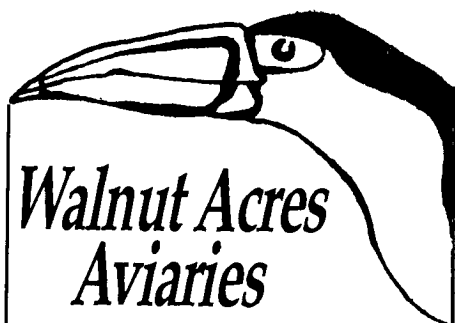
Larger bulk quantities available

**Loriidae Production Network**

John Vanderhoof

P.O. Box 575, Woodlake, CA 93286

(209) 564-3610



## Walnut Acres Aviaries

breeding

Toucans, Toucanettes,  
Cockatoos, Macaws,  
Eclectus, African greys,  
Australian parakeets,  
Parrots and Finches

**All Birds Closed Banded**

Call or write for price list.

Jerry Jennings

**(818) 884-5476**

P.O. Box 6393

Woodland Hills, CA 91365

Visitors by appointment only.

caused by a virus, no effective cure should be expected. Since treatment of an infected bird is not an option, there are only two other ways to protect our birds from viral infections. The first way is to totally prevent any contact from occurring between a bird and the virus. While this concept is simple in theory, it is completely impossible in application. Viruses are extremely small, and can travel great distances in dust, in tears, in hair or on clothing. The second method of protecting our birds from a viral infection is through the use of vaccines that allow the animals to develop protective antibodies. These antibodies are a defense system that stops the virus from attacking the cells. Since the PBFV virus is widespread, totally preventing exposure to the virus would be extremely difficult. Thus, to ensure that our birds are protected from the disease requires the development and use of an effective vaccine. Think, for example, about trying to protect your dog from parvovirus without a vaccine, and you will understand how difficult it is to protect your birds from the PBFV virus without a vaccine.

Until we have such a vaccine, there are several things you can do to reduce, but not eliminate, the chances of your birds developing PBFV. The key to these suggestions is: *reduce exposure*. *Never* have neonates in contact with any bird that has feather lesions. *Do not* expose your birds to any imported cockatoos. *Always* avoid contact between birds from different collections and *do not* mix neonates from several sources in the psittacine nursery. Since PBFV is caused by a virus that can be shed into the environment and may survive for prolonged periods, it is not a good idea to maintain PBFV-positive birds in aviary collections, particularly where there are psittacine nurseries or where endangered species may be exposed.

#### What's next with the PBFV virus?

It is true that the disease was first recognized in the early 1970s, and it has taken some 15 years to reach our rudimentary understanding of the PBFV virus. This unfortunate situation has occurred due to a lack of funding for avian research. Primary health investigations into animal diseases are extremely expensive, and only aviculturists and others interested in birds can be counted on to fund the necessary research to eradicate PBFV and other avian diseases.

Were it not for the dedicated individuals and organizations listed below, we would not have been able to complete our current level of work.

With appropriate funding, our next phase of investigations will be to develop and test a vaccine for this highly infectious virus before it destroys more of our prized avian species and before it further extends its range to new species as it currently appears to be doing. This effort will require the involvement of *every* individual and organization interested in avian health and the future propagation of psittacine birds, both in the wild and in captivity.

#### PBFV Virus Summary

1. PBFV, like other viral induced diseases, is presently untreatable.
2. PBFV is currently known to occur in some 30 species of birds.
3. PBFV virus is spreading to new species of psittacine birds.
4. Both young and old birds can develop PBFV.
5. PBFV virus is a member of an entirely new family of viruses.
6. The PBFV virus may be transmitted through feathers or feces.
7. The PBFV virus is probably stable in the environment for long periods.
8. The PBFV virus is highly infectious, particularly to young birds.
9. No bird will be safe from PBFV until we have an effective vaccine!

#### Acknowledgements

The advancements made in understanding Psittacine Beak and Feather Disease at the University of Georgia College of Veterinary Medicine have been possible by carefully combining the scientific expertise of a multi-disciplined investigative team. This team would like to offer its sincere appreciation to the following individuals and organizations for their unselfish support of and dedication to these investigations. Without their contributions of time and financial resources, this work would not have been possible.

Sustained contributions of over \$1,000 have been made by Dr. John Vaughn, Grayce Ohashi, Jane and Wade Stowe, Bird Clubs of Virginia, Miami Parrot Club, American Federation of Aviculture, Dr. Greg and Linda Harrison, Terry Clyne, Antonio de Dois, Smokey Mtn. Cage Bird Society, Society of Parrot Breeders and Exhibitors, Charlie Forker, Leigh Anne and Dale Stennett, Arleen Chandler,

Dr. Robert Travniccek and Zeigler Bros., Inc.

Bird clubs that have supported our work include: Albermale Avicultural Society, Aviary and Cage Bird Society of South Florida, Birds of a Feather Aviculture Society, Boston Cockatiel Society, Chester County Bird Breeders, Connecticut Association of Aviculture, Eclectus Society, Exotic Caged Bird Society of New England, Gainesville Bird Fanciers, Greater Rochester Hookbill Association, Hookbill Hobbyists of San Diego, Jacksonville Avicultural Society, Kentuckian Cage Bird Club, Madison Area Cagebird Association, Middle Tennessee Cage Bird Club, Midwest Parrot Club, North County Avicultural Society, Panhandle Aviculture Society, Raleigh-Durham Caged Bird Society, South Jersey Bird Club and Tri State Bird Club.

Private contributions have been made by: William Anderson, Lillian Anderson, Mary Ard, Alba Ballard, Charles and Aileen Beakley, Maria Benedet, Barbara Berkman, Renee Bickar, David Blynn, Mr. and Mrs. J.A. Boatright, Sharon Boatright, Catherine Bourne, Susan Boyer, Susan Brantley, Stephen Broderick, Len

Brower, Lindey Brown, Fred and Linda Browning, Dr. Donald Burton, Don Cavender, William and Kathleen Chafey, Carl and Patricia Chinnici, Jaqueline A. Chynoneth, Val Clear, Ann Clevenger, Mary Colliflower, Amy Converse, Sharon Corbin, Jim Cottrell, Steven and Ruth Craft, Mr. and Mrs. M.H. Cunningham, Regina Cussell, Grace Danca, Dr. Richard Davis, Dr. Donald Dawe, Dr. A.E. Decateau, Jill Denton, Dr. Emil Dolenski, Paul Dombrasky, Rich and Alice Dubs, Pat and Doug Duggar, Robert Dunlap, Chris Engen, E.R. Farrell, Jean C. Field, Bob and Sheila Frens, Arthur Freud, Dr. Alan Fudge, Dr. Richard Funk, Donna Garrou, Allaine A. George, Robert and Christine Gibas, Ms. Timothy Graze, John Grecco, Katherine Green, Robert Grumka, Domenic Guzzo, Dr. Nelson Haden, Mark Hagin, Ann Hagins, Laura Harding, Christie Hart, Geraldine Harvey, Cpt. John and Terri Heib, Mrs. Hertz, Dr. Peter Hill, Florence Hinkle, Donald and Brenda Hoch, Cindy Hollingshead, R.J. Holloway, Christine Hubbard-Giles, Ed and Jeanette Huston, Donna Huther, Kimberly Irani, Daniel and Theresa Irby, Susan Jackson, Dr. Jeff

Jenkins, Jerry and Sandra Keller, J.N. Kennedy, Ingrid Kircher, Tim Kitchens, William and Deana Knox, Charles and Wendy Lang, Mary Lannom, Joe Lannom, Liann Lapierre, Angel Lauderdale, Linda-Lou Lavoy, Mark and Delfina Lawyer, Meryl Lechner, Amos and Ellen Lemmerman, Lewis Linebarrier, Lind Lingemann, Court and Vickie Lister, Donna Long, G.S. Markle, Randy Marmon, Katherine and Tim Martin, Deborah Mason, Steve and Shari Matteson, Emily Ann May, Marjorie Needham, Mr. and Mrs. Newland, P.J. Noe, Robert and Dorothy Oberding, Bobby Owens, Marion Packer, Nora and Kevin Paramore, Deborah Pergolotti, Steve and Elaine Petracca, Marie Porn, Mary Elanie Redford, Anne Rambo, Patricia Regnier, Merlyn Rhea, Dr. Greg Rich, Rick Savitt (pres., Prevue Metal Co.), Connie Rosene, Trudy Rosenthal, Samuel Rosenthal, Kathryn Saska, Judith Schwartz, Emily Serrapede, Pearl Sherling, Eugene Shoe, Laura Siple, Dennis Sloan, Terry Smith, Thomas and Lorraine Smith, Dr. Ruth Sosis, Dr. Bob and Janice Stonebreaker, Dr. Sara Sudo, James and Adele Swan, James and Sharleen Swenson, Isabel

**PARROT CLEAN**

**SHOWER PERCHES**

A UNIQUE & NOVEL APPROACH TO GIVING YOUR PET BIRD SHOWERS  
RATED AS THE **BEST** NEW PRODUCT OF 1989 BY BIRD TALK MAGAZINE  
EASILY ATTACHES IN THE CORNERS OF SHOWER STALLS AND BATH AREAS  
COMES IN TWO SIZES TO MEET THE NEEDS OF MOST BIRD OWNERS



SMALL SIZE SUITABLE FOR KEETS TO  
CONURES **\$4.95**

LARGE SIZE SUITABLE FOR AMAZONS  
TO COCKATOOS **\$7.95**

TO ORDER, SEND YOUR CHECK OR MONEY ORDER  
PLUS \$2.00 SHIPPING TO:

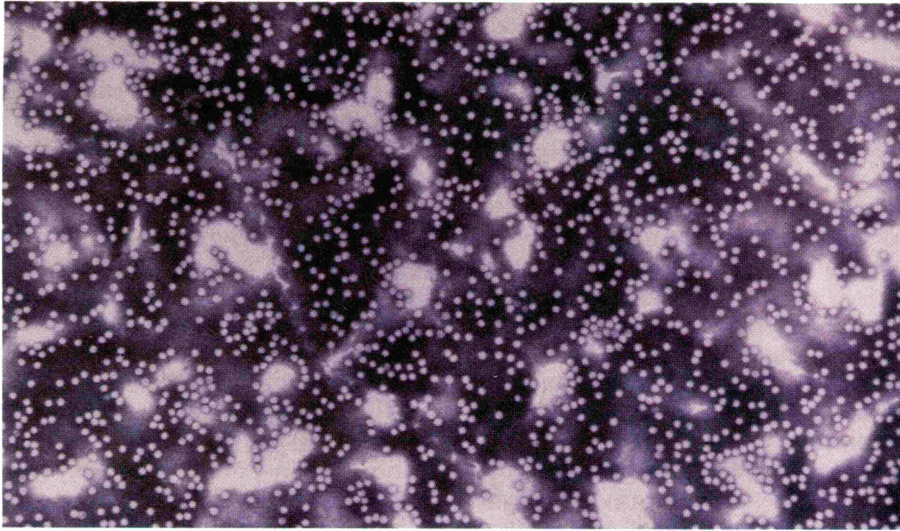


**PARROT PRODUCTS**

DEPARTMENT AFA  
P. O. BOX 587326  
ALSIP, ILLINOIS 60658

SEND 50 CENTS FOR PRODUCT BROCHURE  
REFUNDABLE WITH YOUR FIRST ORDER





Purified, concentrated PBFD virus. Each small white particle is theoretically capable of producing disease in a susceptible host.



This producing Major Mitchell's hen was 20 years old when she first developed clinical signs of PBFD.

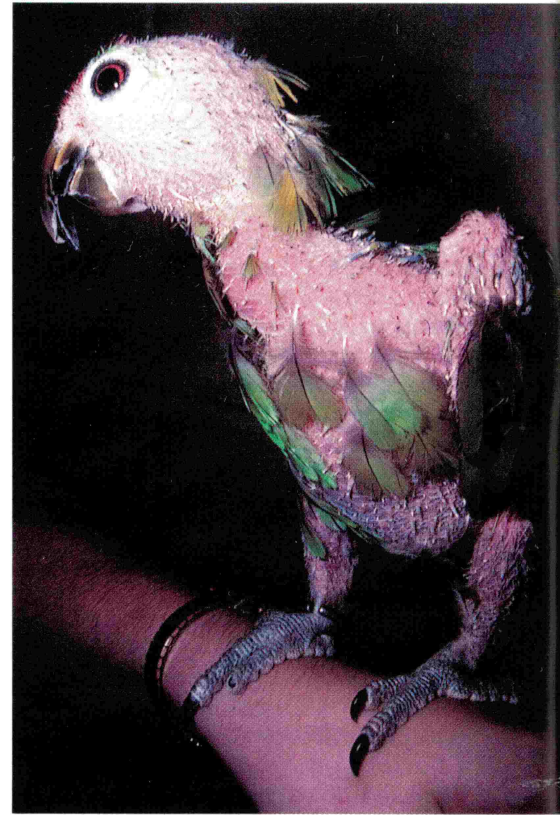


These 14-week-old African Grey Parrots have deformed powderdown and contour feathers that are consistent with PBFD. The source of the virus that infected these babies is undetermined but all 14 neonates that were in the nursery at the time of the outbreak developed PBFD.

Taylor, Carolyn Towle, Kimberley Travis, Nancy Travis, Donna Trusello, Billy Turner, UGA Student Chapter of AAV, Mr. and Mrs. VanWandelan, Jamie Warwick, Robert and Carole Wheeler and Carl Wolford.

#### References

1. Perry, R.A. Psittacine beak and feather disease. Proc of Vet Science Aviary and Caged Bird Medicine. Sydney, 55:81-87, 1981.
2. Perry, R.A. Some feather characteristics of acute French molt in fledgling budgerigars (*Melopsittacus undulatus*). Australian Vet. Pract. 13:128, 1983.
3. Perry, R.A.; Pass, D.A. PB and FD, including French molt, in parrots in Australia. Australian Vet Poult Assoc, May, 1985.
4. Pass, D.A.; Perry, R.A. The pathology of psittacine beak and feather disease. Aust Vet J. 61:69-74, 1984.
5. Jacobson, E.R., et al. Feather and beak dystrophy and necrosis in cockatoos. Clinicopathologic evaluations. J Am Vet Med Assoc 189:999-1005, 1986.
6. Cooper, J.E., et al. Psittacine beak and feather disease. Vet Rec 120:287, 1987.
7. Harrison, G.J. Disorders of the integument. In Harrison, G.J., Harrison, L.R. (eds); *Clinical Avian Medicine and Surgery*, Philadelphia, WB Saunders, 1986, pp. 511-515.
8. Pass, D.A.; Perry, R.A. The pathogenesis of psittacine beak and feather disease. Proc Assoc Avian Vet 1984, pp. 113-120.
9. Harrison, G.J. Feather disorders. Vet Clinics of North America, March, 179-199, 1984.
10. Lowenstine, L.J. Cockatoo feather disease: A summary of preliminary findings. Proc 33rd West Poul Dis conf, Davis, 1984, pp. 94-96.
11. Ritchie, B.W.; Niagro, F.D.; Lukert, P.D., et al. Comparison of PBFD viral isolates from four genera of psittacine birds. J Wildlife Dis Assoc. In press.
12. Huff, D.G.; Schmidt, R.E.; Fudge, A.M. Psittacine beak and feather syndrome in a Blue-fronted Amazon (*Amazona aestivum*). J Assoc Avian Vets 2:84-86, 1988.
13. McOrists, Black D. G. PB and FD in wild Sulfur-crested Cockatoos (*Cacatuu galerita*). J. Wild Dis 20:120-124, 1984.
14. Ritchie, B.W.; Niagro, F.D.; Lukert, P.D., et al. Characterization of a new virus from cockatoos with psittacine beak and feather disease. Virology, In press.
15. Wylie, S.L.; Pass, D.A. Experimental reproduction of PB and FD/French molt. Avian Path 16:269-281, 1987.
16. Smith, R. PB and FD: A cluster of cases in a cockatoo breeding facility. Proc Assoc Avian Vet, Miami, 1986, pp. 17-20. ●



Red-lobed Amazon with Psittacine Beak and Feather Disease. At one time PBFD was thought to only occur in Old World and South Pacific psittacine birds. There have now been several reports of PBFD in New World psittacine birds. The virus responsible for causing PBFD appears to be expanding in host range.