



1979 OFFICERS

DR. RICHARD E. BAER/*President*
 LEE HORTON/*1st Vice President*
 CLIFTON WITT/*2nd Vice President*
 HELEN HANSON/*Secretary*
 JANICE PRITCHARD/*Finances*
 SHARON CLAUSE/*Corresponding Secretary*
 JOE McLAUGHLIN/*Membership Services*

LEGISLATIVE LIAISONS

Clifton Witt (301) 774-0303

STATE COORDINATORS

CHAIRMAN

Dr. Richard E. Baer (614) 836-5832
 WESTERN REGIONAL COORDINATOR
 Jeff L. Wigginton (206) 854-2476
 NORTH CENTRAL REGIONAL COORDINATOR
 Jim Fouts (316) 722-4065
 SOUTHEASTERN REGIONAL COORDINATOR
 Peggy Cochran (404) 977-9842
 MIDWESTERN REGIONAL COORDINATOR
 Graig Hendee (312) 724-2578
 NORTHEASTERN REGIONAL COORDINATOR
 Tim Dahle (301) 760-4626

ALASKA

Sally and Lin Bauer (907) 276-5668

ARIZONA

Mickey Ollson (602) 939-1003

CALIFORNIA (north)

Patricia Barbera (415) 924-4231

CALIFORNIA (central)

Hank Johnson (209) 233-3322

CALIFORNIA (south)

John and Marguerite Agrella (714) 561-7420

COLORADO

Howard J. Unrein (303) 784-6710

CONNECTICUT

Bill Parlee (203) 528-1458

FLORIDA

Mrs. M. Simmons (305) 772-2632

GEORGIA

Peggy Cochran (404) 977-9842

HAWAII

Milton Berghold (808) 668-7920

ILLINOIS

Kai Juhl (312) 729-3858

INDIANA

Conrad Meinert (219) 269-2873

IOWA

Dr. William D. Kliepec (515) 277-6745

KANSAS

Jim Fouts (361) 835-2149/722-4065

KENTUCKY

Dr. Thomas B. Angel, Jr. (606) 371-4929

LOUISIANA

Joseph Beter, Jr. (504) 393-1133

MAINE

Robert Couture (207) 784-2926

MARYLAND

Mrs. Lee Phillips (301) 798-1353

MASSACHUSETTS

Mark Runnals (413) 533-1285

MISSOURI

A. Pat Seaman (314) 723-1949

NEBRASKA

Robert G. Travnick (402) 821-2490

NEVADA

Pat Dingle (702) 647-2213

NEW JERSEY

Dr. Barry Adler (201) 762-4941/283-2110

NEW YORK

Mrs. Madeline Mysliwiec (516) 781-5285

NORTH CAROLINA

Richard Schock, Jr. (919) 367-7177

OHIO

Mark Reader (614) 471-3881

OREGON

Joe McLaughlin (503) 538-6323

PENNSYLVANIA

Herschel Frey (412) 561-7194

RHODE ISLAND/MASSACHUSETTS

George Barbary (617) 761-5421

TEXAS

Tom Squires (817) 732-6862/244-4126

UTAH

Rex Kennedy (801) 571-6183

VIRGINIA

Mrs. Judy Hoffeman (703) 323-0459

WASHINGTON

Charles L. Dodds (206) 285-3596

WASHINGTON D.C.

Ruth Hanessian (301) 926-2838

WISCONSIN

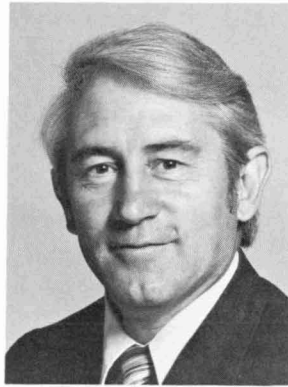
John Nero (414) 499-9013

INTERNATIONAL REPRESENTATIVE

Joseph de Aguiar

Nutritional and Metabolic Diseases of Cage Birds

Murray E. Fowler, DVM



Though there is yet much to be learned about proper feeding of the hundreds of species of birds maintained and bred by the aviculturist, application of current knowledge could enhance the success of breeding programs. I believe that inadequate nutrition is one of the major factors inhibiting avian reproduction. Aviculturists can learn to recognize developing problems, and more importantly, act to prevent nutritional diseases. I shall describe a few nutritional and metabolic diseases that can be avoided.

METABOLIC BONE DISEASE

The metabolic bone disease complex is the winner in any contest of nutritional diseases most likely to interfere with avian propagation. "Metabolic bone disease" (MBD) is a term denoting a group of diseases, usually caused by inadequate dietary and husbandry management, and characterized by metabolic defects affecting the structure and function of bones. MBD develops as a result of prolonged ingestion of a diet deficient in calcium and/or vitamin D; or a diet with an improper ratio of calcium to phosphorus. Many names have been given to the syndrome, including osteomalacia, osteoporosis, rickets, nutritional secondary hyperparathyroidism, cage layer paralysis, and fibrous osteodystrophy.

Clinical Signs of MBD

All birds are potentially susceptible to MBD, but certain groups are more likely to be fed inadequate diets. These groups include the carnivores, fruit eaters, and seed eaters, especially those consuming seeds with high oil content. Orphan birds are frequently affected.

In juvenile, growing birds, MBD is manifested as rickets, and characterized by stunted growth, bowing of the legs,

swollen joints, spontaneous fractures, inability to perch and poor plumage development. Raptors fed an all meat diet may develop rickets in as short a period of time as 10-14 days.

Mature birds develop osteomalacia, or demineralization of bone. The clinical signs are usually more subtle and develop at a slower rate in adults as compared with immature birds. Nonetheless, the effects are severe.

Spontaneous fractures occur as a result of usually inconsequential trauma. Abnormal moults are common as moulting imposes a drain on calcium resources. Egg production may fail or soft shelled eggs are laid.

Other clinical signs include drowsiness, feather picking, regurgitation, excessive drinking, and loose stool. The loose stool may be caused by excess water intake, stimulated by a need for increased urine flow to remove excess phosphate.

Birds are also prone to hypocalcemic tetany. Affected birds appear to be weak and drowsy. They may sway back and forth slightly on a perch until suddenly they fall either forward or backward. In some birds, the premonitory sign is wing fluttering. Startling the bird by opening a cage, or other activity, may precipitate a seizure. Usually in less than a minute the bird recovers from the seizure, but lies exhausted on the cage floor. Intervals between seizures may be minutes, hours, or days. A prolonged seizure may lead to death by preventing breathing.

Metabolic processes

All animals require both calcium and phosphorus. Meeting the requirements of birds is especially critical because of the horrendous drain on calcium resources to form the egg shell. Failure to produce a normal egg obviously leads to reproductive failure.

The bird draws upon dietary calcium and calcium in a special type of bone called medullary bone to provide the calcium to form the shell. If dietary calcium is lacking, more will be drawn from the bone until the bone becomes soft and nonfunctional. Ultimately, egg laying ceases. In the immature bird, a similar deficiency of calcium prevents proper mineralization of growing bones (rickets).

The amount of calcium that can be absorbed is dependent upon the absolute amount of calcium in the diet, the presence of vitamin D and the ratio of calcium and phosphorus in the diet. Birds acquire vitamin D₃ from the action of ultraviolet light on the skin of the feet, shanks and bare face. Ultraviolet rays can not pass through window glass, so glassed skylights or windows prevent the production of skin

vitamin D₃. Certain types of plexiglas do allow passage of U.V. light.

Too much phosphorus in the diet, common in both seed eaters and carnivores fed nothing but meat, tends to tie up the available calcium. A normal calcium-phosphorus ratio, (Ca/P), is 2:1. A ratio of 1:10 is commonly seen in seed-eater diets such as those to many of the parrots and 1:20 in all-meat diets frequently fed to raptors.

For example, a 360-gm parrot could consume approximately 10% of its body weight or 36 gm of sunflower seeds daily. The sunflower seeds contain 0.17% calcium, which supplies 0.06 gm of calcium to the bird. If the bird is maintained on this unsupplemented diet, no medullary bone will be formed, it is highly likely that overt MBD will ensue. It is highly unlikely that ovulation can occur, but if ovulation does take place, 0.78 gm of calcium will be expended to supply the shell for one egg. The 0.06 gm supplied in the diet falls far short of the requirement. Furthermore, the high oil content of sunflower seeds could further diminish the amount of absorbable calcium because of the formation of insoluble calcium soaps in the intestine. The results of a total diet of sunflower seeds may be no eggs, or soft shelled eggs, and MBD.

It is not difficult to diagnose overt metabolic disease using a combination of diet evaluation, clinical signs and x-rays. Sub-clinical effects are hard to detect, but can be devastating to propagation attempts. It behooves the aviculturist to make certain the diet is balanced for calcium and that vitamin D₃ is supplied.

A most important suggestion is to start chicks eating a wide variety of foods. Birds that become habituated to single food items are generally doomed to malnutrition, as was a hyacinthine macaw that would eat only coconut meat.

Look for a moment at the composition of a standard parakeet mix, Table 1. The calcium content and the Ca/P ratio are poor. Unless a calcium supplement is added, a bird fed this diet is liable to develop metabolic bone disease. Some calcium sources are listed in Table 2. Notice that some forms of calcium phosphate contain more phosphorus than calcium. Feeding such a supplement would be detrimental.

A common misconception is that a bird will balance its own diet if offered a variety of food items. NOT NECESSARILY SO! A wild population selects a variety of food items and balances the diet, but in captivity, a bird may lack the benefit of parents of the social structure of the flock to teach it how to make the proper selections. The individual may thus become habituated to inadequate food items. A

FIELD FRESH SPRAY MILLET



from
our
FARM
to
YOU!

"Our birds love your millet and it's the cleanest seed I've seen!"
Dale E. Widman

"Your millet is great!"
Frank Galin

"Your twenty pounds of millet went like snow in July!"
Rosalie Moffitt

OUR
CUSTOMERS
TELL THE
STORY

Order Early—
Save With
Farm Direct Prices

Money Back
Guarantee

OTHER FIELD FRESH PRODUCTS (Grown from Certified, Registered, Foundation Seed)

- Small Finch Millets
 - Golden German
 - Siberian (Manta Variety)
 - Russian
 - Japanese
 - White Wonder
- Niger
- Rape (Tower variety)
- Canary (Alden variety)
- Red Proso (Cerise variety)
- White Proso (Dawn, Minco and Snowbird varieties)
- Hemp (Imported)

Make spray millet a regular part of your birds' diet and breeding programs. Top quality millet with plump seeds on the stem for your birds to enjoy eating natures way.

Head average 12" length. Minimum order 5 lbs. at \$14, 20 lbs. at \$48, Postage Paid Continental USA only. (Quantity prices, inquire.)

Straight seed, mixes, or custom blending available. For complete information, send stamped, self-addressed envelope.

CARLSON SPECIALTY SEED

RT. #2, BOX 165
PLAINFIELD, WI 54966
(715) 335-4564



Pyramid Birds presents PARROTDISE

The Largest, Most Beautifully Displayed Presentation of Parrots in the Entire Galaxy! Truly a Close Encounter of the Bird Kind! Cockatoos, Macaws, Amazons, Love Birds, Cockatiels, Conures, Budgies and Many Other Rare Exotic Parrots Create a Beautifully Natural and Intimate Experience with Nature . . . Bring your cameras!

Parritz Regency Hotel & Spa Luxury accommodations daily, weekly, monthly, special resident rates.

Parrotdise Charm School Expertly

The Parrotfania Shop Absolutely every kind of service & product imaginable for all parrot-type birds. Custom iron cages, toys, stands, natural branches, playgrounds & accessories, gigantic book selection on parrots.

Parrotdise Beauty Salen Expertly trained, gentle groomers. Wings, nails, beaks, tails, bath.

trained Parrotologists.

Parritz Boutique Feather fashions by Johnny Rainbow of the Parritz. "Natural elegance is always fashionable." Jewelry — combs — hats — belts — T-shirts and lots of chachkas.

Pyramid Birds

LIFETIME MEMBERSHIP STORE

(213) 653-2260

OPEN 7 DAYS 10-6

Home of the Pampered Parrots and HQ World Parrot Foundation—Supporting Education, Conservation, and Medical Research Programs to Save the Parrots!

705 N. Fairfax Ave., Los Angeles, CA 90046

DIRECTORS: GARY MORTIMER, JOHN INGRAHAM



AMERICAN FEDERATION OF AVICULTURE

Dedicated to conservation of bird wildlife through encouragement of captive breeding programs, scientific research, and education of the general public.

MEMBER NATIONAL ORGANIZATIONS

African Love Bird Society
American Cockatiel Society Avicultural Society of America
American Pigeon Fanciers Council

MEMBER CLUBS

ARIZONA

Arizona Avicultural Society

CALIFORNIA

Butte County Bird Club
California Game Breeders
Capitol City Bird Society
Central California Cage Bird Club
Exotic Bird Breeder's Association
Finch Society of San Diego County
Fresno Canary & Finch Club
Golden Gate Avian Society
Golden West Game Bird Breeders
Great Western Budgerigar Society
Hookbill Hobbyists of Southern California
Long Beach Bird Breeders
Norco Valley Bird Breeders
Nu-Color Bird Association
Orange County Bird Breeders
San Diego County All Bird Breeders Association
San Diego County Canary Club
Santa Clara Valley Canary & Exotic Cage Bird Club
South Bay Bird Club
South Coast Finch Society
Southern California Roller Canary Club
Valley of Paradise Bird Club
West Valley Bird Society
Western Bird Breeders Society

COLORADO

Rocky Mountain Cage Bird Club, Inc.

CONNECTICUT

Connecticut Association for Aviculture

FLORIDA

Aviary & Cage Bird Society of South Florida
Gold Coast Exotic Cage Bird Club
Greater Jacksonville Avicultural Society
Gulf Coast Cage Bird Breeders Association
Sun Coast Finch Society

GEORGIA

Georgia Cage Bird Society

HAWAII

Honolulu Canary & Finch Club

ILLINOIS

Greater Chicago Cage Bird Club
Illinois Game & Pet Breeders Society
Piasa Cage Bird Club

IOWA/NEBRASKA

Mid-America Cage Bird Society

MARYLAND

Baltimore Bird Fanciers, Inc.
National Capitol Bird Club

MASSACHUSETTS

Western New England Cage Bird Society

MINNESOTA

Minnesota Cage Bird Association

MISSOURI

Missouri Cage Bird Association

NEBRASKA

Greater Omaha Cage Bird Society

NEVADA

Las Vegas Avicultural Society

NEW HAMPSHIRE

New Hampshire Cage Bird Association

NEW YORK

American Singers Club, Inc., Chapter I
Long Island Cage Bird Association

OHIO

Central Ohio Bird Fanciers, Inc.
Ohio National Color Breeders Club

OREGON

Columbia Canary Club
Exotic Bird Club of Oregon

PENNSYLVANIA

Greater Pittsburgh Cage Bird Society

TEXAS

Alamo Exhibition Budgie Club
Dallas Cage Bird Society
Fort Worth Bird Club

UTAH

Avicultural Society of Utah

VIRGINIA

Tidewater Cage Bird Fanciers of Virginia

WASHINGTON

Washington Budgerigar Society

WISCONSIN

Wisconsin Bird & Game Breeders Association
Wisconsin Cage Bird Club

WELCOME NEW CLUB MEMBERS

Exotic Bird Breeder's Association—California
San Diego County All Bird Breeders Association—California

common mistake is to overfeed a mixture of suitable and unsuitable foods. The bird may select only unsuitable food and obtain energy sufficient to maintain apparent condition, but lack ability to reproduce. Some equate fat birds with well-nourished birds — a fallacy. Birds fed in group exhibits or fed a variety of foods must be carefully observed to make certain they are eating properly.

Feeding a balanced commercial diet will provide essential nutrients if the bird will eat it. A common mistake to provide a commercial diet, while continuing to offer other items. Given a choice, the bird may select preferred foods, continuing to eat an unbalanced diet. If commercial diets cannot be used, a combination of food items should be provided along with properly selected supplements.

HYPOVITAMINOSIS A

Hypovitaminosis A is also known as vitamin A deficiency and nutritional roup. Nyctalopea (night blindness) and xerophthalmia (dry cornea) are frequently associated with vitamin A deficiency.

Vitamin A is necessary for the proper formation and continued function of, epithelial surfaces, particularly in the respiratory tract, mouth, upper gastrointestinal tract, eyes, sinuses, and feet. In a bird suffering from vitamin A deficiency, the epithelial linings of the various organs lose their integrity, and the epithelial surfaces serve as a barrier against the invasion of the body by numerous bacteria and microorganisms. The bird is continually in danger of contacting infectious diseases.

A bird is capable of storing vitamin A in the liver. A deficiency usually means a long term food depletion. Raptors and large psittacines are most likely to be affected, but many other species may be affected when gross errors are made in the diet.

Vitamin A deficiency may appear in the respiratory tract of one species of bird, and as a digestive tract disorder in another species. The most difficult systems to evaluate are reproductive and urinary tracts.

Signs

In parrots and other large psittacine birds the disease is characterized by an increased incidence of upper respiratory infections and sinusitis. Also seen are lesions appearing to be abscesses in the roof of the mouth, along the tongue or in the opening to the trachea. These have heretofore been thought to all be infectious, but recent findings indicate that they are part of the vitamin A deficiency picture.

In raptors an affected bird will begin to



1979 COMMITTEES

AVY AWARDS	
Roland Dubuc	(714) 727-1486
SPECIAL RESEARCH AWARDS	
Dr. Phillip J. Ryan	(612) 636-5133
BY-LAWS	
Charlotte LeDoux	(415) 494-0345
CONVENTION 1979	
Tom Ireland	(305) 968-4214
CONVENTION COORDINATOR	
Lee Horton	(714) 727-1486
EDUCATION/MEDIA SERVICES	
Sharon and Steve Clause	(714) 748-3847
EMERGENCY TASK FORCE	
Dr. Barry Adler	(201) 762-4941/283-2110
ETHICS	
Ruth Hanesian	(301) 926-2838
FINANCE	
Janice Pritchard	(714) 442-1164
HOME OFFICE	
Kathy Young	(714) 442-8276
Janice Pritchard	(714) 442-1164
INSURANCE	
Jerry Jennings	(213) 884-5476
LEGISLATION	
Clifton Witt	(301) 774-0303
SPECIAL LEGISLATION ADVISOR	
Dr. Richard E. Baer	(614) 836-5832
ENDANGERED SPECIES ACT	
Jerry Jennings	(213) 884-5476
MEMBERSHIP PROMOTION	
Tim Dahle	(301) 760-4626
MEMBERSHIP SERVICES	
Joe McLaughlin	(503) 538-6323
NOMINATING	
Peggy Cochran	(404) 977-9842
PATRONAGE SHOW AWARDS	
Nancy Reed	(203) 688-4069
PUBLIC RELATIONS	
Lee Horton	(714) 727-1486
PUBLIC RESPONSIBILITY	
Janet Galey Phipps	(301) 525-1311
RAFFLE	
Judy Hoffeman	(703) 323-0459
SHOW DISPLAY	
Peggy Cochran	(404) 977-4842
STATE COORDINATOR	
Dr. Richard E. Baer	(614) 836-5832
WATCHBIRD STAFF	
Sheldon Dingle / <i>Editor</i>	(714) 734-7448
Sue Reese / <i>Editorial Assistant</i>	(714) 734-7448
Jerry Jennings / <i>Associate Editor</i>	(213) 884-5476
M. Jean Hessler / <i>Art Dir.</i>	(714) 548-3133
Lee Horton / <i>Managing Editor</i>	(714) 727-1486
Janice Pritchard / <i>Finances</i>	(714) 442-1164
Jerry Jennings / <i>Ad Dir.</i>	(213) 884-5476
Dr. R.E. Baer / <i>Mid-West</i>	(614) 836-5832

refuse food. Weight loss follows, and the bird becomes sluggish and weak. Depending on the exact location of the lesion, the bird may exhibit swollen sinuses, conjunctivitis, changes in vocalization, or corns on the feet. Secondary respiratory infections may occur. Small to large, white to pinkish plaques may appear in the mouth, but they are most often located in the esophagus and proventriculus, where they are not seen without the use of special instruments.

Of even greater importance to the serious aviculturist is the fact that epithelial changes as a result of vitamin A deficiency may also affect the reproductive tract. A deficiency so mild that the general signs described are absent may produce subtle changes in the shell-forming gland of the female reproductive tract. Decreased egg productive, poor hatchability and increased chick mortality are signs of Hypovitaminosis A in chickens, and it is likely that cage birds are equally affected.

A basic treatment for vitamin A deficiency is supplementation of the diet with vitamin A or carotenes. Excellent sources of vitamin A for raptors include commercial raptor diets, fresh liver, and halibut liver oil. Green and yellow vegetables contain carotenes that are readily converted to vitamin A by birds. Other sources include alfalfa meal, red beets and liver meal.

It is possible to feed too much vitamin A, but only if concentrated sources are indiscriminately used. Budgerigar breeders may be aware of the possible implication of too much vitamin A in the increased incidence of French moult.

STARVATION

Starvation can be caused by a total lack of food or by a deficiency of energy or protein in the diet. Most people are calorie-conscious these days and can relate to the idea that a bird consumes either too many or too few calories.

Experienced aviculturists know approximately how much food a given species should eat, and usually provide a little extra for good measure. There are certain situations that preclude sufficient ingestion of food. An overview of the problems of starvation might help prevent problems. A bird suffering from either a protein or energy deficiency loses weight as evidence by decreased breast muscle. Weakness is apparent if the bird attempts to fly. Ultimately, the bird is unable to perch. The bird will be unable to keep warm if in a cool environment, so shivering and feather fluffing are common. In extreme cases the bird may experience a seizure caused by insufficient glucose in the blood. These are apparent signs easily recognized by

anyone. It is much more difficult to recognize the subclinical effects on birds consuming a marginal to deficient diet over a long period of time.

Protein deficiency causes retarded growth; healing of wounds is inhibited, bone development is delayed, basic enzymatic pathways are disrupted, and reproduction is impaired.

Fruit and nectar-eaters are most subject to protein depletion, as fruit is notoriously low in protein. In the wild, these birds must also consume insects or fruit and leaf buds which are good sources of protein. The aviculturist must likewise supply protein.

A diagnosis of either protein or energy deficiency can be made on the basis of signs, but it is of prime importance to assess the actual consumption of food. To assess a diet, the questions listed in Table 3 should be answered.

Good sources of protein include meat and meat by-products, cheese, eggs, soybean meal, alfalfa meal, insects, meal worms and oil seeds such as sunflower, safflower, and rape. The protein content of some bird feeds is listed in Table 4.

Energy is another prime requirement. The smaller the bird, the greater the amount of food consumed in proportion to the body weight, Table 5. The hummingbird is in a class by itself, requiring the daily consumption of 150% of its body weight in the form of syrup. A 50 gm budgerigar requires 16 calories/day. A 1 kg macaw is 20 times the size of a 50 gm budgerigar, yet the macaw requires only 9 times the number of calories needed by the budgie. Other comparisons are illustrated in Table 6.

Some health related conditions other than inadequate food intake may cause the bird to be emaciated. It is not simple to arrive at a definitive diagnosis, but it is essential to assure provision of necessary food items in adequate quantities.

HYPOTHIAMINOIS

Hypothiaminosis is also called thiamine or vitamin B₁ deficiency and Beriberi. Mammals and birds require a dietary source of thiamine or vitamin B₁. This vitamin is essential for normal functioning of the brain, nerves and other vital metabolic processes.

The two groups of captive birds that are usually affected by thiamine deficiency are raptors and fish eating birds. This results from one of two ways. (1) An absolute deficiency of the vitamin may occur when a total diet of straight muscle meat or eviscerated whole animals are fed (wild raptors get thiamine from grains in the intestines of prey). Day-old chicks lack grain in the intestine and are also deficient.

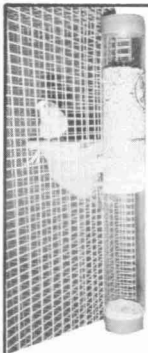
LOVEBIRDS

CARE AND BREEDING
by Jo Hall

The book with a new approach to the successful domestic breeding of lovebirds and advanced concepts in nutrition and management. Contains 26 chapters of practical, applicable information covering all aspects of the care and breeding of the nine recognized species of Agapornis. Includes beautiful, unique color photos, paintings and illustrations. A valuable addition to the library of the serious aviculturist.

\$10.95 (50c handling)

Order direct from: Jo Hall
Rt 1, Box 33, Thorndale, TX 76577



STOP THROWING SEED AWAY USE—Recycling Seed Dispensers

FIT ALL CAGES
patented *** improved
ONE YEAR GUARANTEE

Large Size (22" x 5") Holds 1½ lbs of seed
Small Size (12" x 5") Holds ¾ lb of seed

	Large	Small
Finch/Canary	\$10.95 ea	\$9.95 ea.
Budgie	\$10.95 ea	\$9.95 ea.
Lovebird/Cockatiel.	\$11.95 ea.	\$10.95 ea.

For C.O.D orders call (312) 697-0821
or send check or money order to:

NATURE-LIFE CO.

954 Cookane Ave., Elgin, IL 60120

Orders sent F.O.B. & C.O.D.
Illinois residents add 5% sales tax.



Ken McConnell

RT. 1, BOX 218M • RED BLUFF, CA 96080

(916) 527-6465

CABLE: SWANS

Swans are my only business.

●
PAIRS OR SINGLES

Accurately Sexed, Correctly Pinioned

Mute Swans • Australian Blacks
Black-Necked • Trumpeters

●
PAIRS START AT \$295.00

(2) Dietary thiamine may be destroyed by thiamine destroying enzymes in foods such as fish that have been improperly stored. Most fresh natural bird foods contain adequate thiamine. Seeds, in particular, are excellent sources for birds.

Signs:

Appetite diminishes early in the course of the disease. There may be some muscle quivering. The wings may flap in an uncoordinated manner and the bird may be unable to perch.

The most characteristic sign of thiamine deficiency is the pulling of the head back over the body or to one side. This is called opisthotonos. This is not the only disease in which opisthotonos occurs, but the dietary history of a bird exhibiting opisthotonos should be carefully examined. Thiamine should automatically be given to the bird as therapy. The condition should be corrected in less than 2 weeks if thiamine deficiency is the cause, although a few birds will not recover completely.

Thiamine deficiency in raptors can be prevented by feeding a commercial diet or intact whole animals. Quick freeze and store at 20-40 degrees F. rodents or fish that are to be fed.

THYROID DISORDERS

Budgerigars are uniquely susceptible to thyroid enlargement. Names for the disease include thyroid dysplasia, hypothyroidism, goiter and thyroid hyperplasia. A deficiency of iodine in the diet is the prime cause of the disorder in the budgie. Theoretically the ingestion of chemical goiterogens could be involved, but this is questionable in birds.

Signs:

An enlarged thyroid exerts pressure on vital structures. In the budgerigar, the thyroid is located within the chest wall, where swelling puts pressure on the trachea, esophagus, and major blood vessels. Clinical signs indicate abnormal function of those organs and include difficulty in breathing, or a click or squeak when breathing, difficulty in swallowing, a dilated crop, spitting up seeds and weight loss.

These are the overt manifestations of the syndrome. The thyroid gland produces hormones that have profound effects on growth, feathering and general metabolic rate. The effects of thyroid hormone deficiency are not always recognized clinically. Some clinicians, myself included, feel that thyroid deficiency may well be partially responsible for feathering problems of birds. Hormonal changes in metabolism may affect a bird's reproductive

capacity as well. Birds raised in an iodine deficient area, or more importantly, fed seeds from an iodine deficient area, should be given iodine periodically, which can be added to water or to vitamin supplements.

Summary:

1. Nutritional disease can kill or debilitate birds making them susceptible to infectious and parasitic diseases. Subclinical effects may cause reproductive failure.
2. Nutritional diseases can be prevented by providing a balanced diet and ensuring that the bird eats it.

A Selected Bibliography for Nutritional Diseases of Birds

- Altman, Robert B.: Palatine and Lingual Abscesses in Larger Psittacine Birds. Proceedings of the AAZV. St. Louis, Missouri, 1967:127-130.
- Blakemore, D.K.: Diseases of the Endocrine System. **IN** Petrak, M.L. (ed): Diseases of Cage and Aviary Birds. Philadelphia, Lea and Febiger, 1969:341-344.
- Capen, C.C., Belshaw, B.E. and Martin, S.L.: Endocrine Disorders. **IN** Ettinger, S. (ed) Textbook of Veterinary Internal Medicine, Vol. 2, Philadelphia, W.B. Saunders, 1975:1351-1392.
- Follis, R.H.: The Pathology of Nutritional Disease. Springfield, Ill., Charles C. Thomas 1948:92-95.
- Fowler, M.E.: Metabolic Bone Disease **IN** Fowler, M.E. (ed). Zoo and Wild Animal Medicine. Philadelphia, W.B. Saunders, 1978:53-76.
- Hinshaw, W.R.: Diseases of Turkeys **IN** Biester, H.E. and Schwarten, L.H. (eds): Diseases of Poultry (3rd) Ames, Iowa, Iowa State University Press, 1952:165 & 1097.
- King, A.S.: Aves Respiratory System, **IN** Getty, Robert: Sisson & Grossmans, The Anatomy of the Domestic Animal (5th ed). W.B. Saunders, Philadelphia, 1975:1883-1886.
- Kronfeld, D.S. & Medway, W.: Blood Chemistry **IN** Medway, W., Prier, J.E. and Wilkinson, J.S. (ed): Textbooks of Veterinary Clinical Pathology. Baltimore, Williams and Wilkins, 1969:35-40.
- Simeson, M.G.: Calcium, Inorganic Phosphorus and Magnesium in Health and Disease. **IN** Kaneko, J.J. and Cornelius, C.E. (ed): Clinical Biochemistry of Domestic Animals (2nd) Ed. Vol. 1, New York, Academic Press 1970:313-375.

Table 1
COMPOSITION OF PARAKEET FEED

	Protein %	Calcium %	Phosphorus %
Oat groats	16.7	.07	.43
Canary grass seed	13.7	.06	.30
Millet seed	12.2	.05	.28
Fruit (banana)	1.2	.008	.028
Greens (spinach)	3.2	.093	.051
Commercial diet	20.0	2.30	.80

Table 2
CALCIUM SUPPLEMENTS

	%Ca	%P
Calcium carbonate	40	0
Calcium gluconate	9	0
Calcium lactate	18	0
Monocalcium phosphate	17	26
Dicalcium phosphate	29	23
Bone meal	32	15
Neo-Cal glucon	23 mg/ml	0

Table 3
DIET ASSESSMENT

1. What is being fed?
2. What is being eaten?
3. How much is being eaten?
4. Are there unique nutrient requirements?
5. Is there a special physiological state?

Table 4
COMPARISON OF PROTEIN CONTENTS OF AVIAN FEEDS

Food Item	% Protein
Millet seed	20.0
Sunflower seeds (without hulls)	26.0
Lettuce	1.2
Alfalfa hay	15.0
Apple	0.3
Banana	1.2
Orange	0.9
Cheese	25.0
Egg	12.8
Lean beef	22.0
Meal worms	20.0

Table 5
BIRDS—FOOD CONSUMPTION

	Weight	% body weight
Hummingbird	2.5- 10 gm	32 (dry sugar)
		150 (sugar solution)
Canary	12- 29 gm	12-14
Budgerigar	30- 60 gm	11-13
Pigeon	260-350 gm	8-10
Mynah	180-240 gm	12-15
African grey parrot	300-380 gm	6- 8
Ostrich	120 kg	4- 6

Table 6
CALORIES REQUIRED

Weight grams	Calories Required/day	Calories required if needs based on weight only
50	1.6 oz.	16
100	3 oz.	26
500	1 lb.	84
1000	2 lb.	140
		320

THE WIDE WORLD OF BIRDS

GENERAL OFFICES
222 ISLAND AVENUE, WILMINGTON, CA. 90744

PARROTS	LORIES	MYNAHS
MACAWS	PARRAKEETS	TOUCANS
AMAZONS	ROSELLAS	WEAVERS
CONURES	FINCHES	TANANGERS
COCKATIELS	CANARIES	TOURACOS
LOVEBIRDS	DOVES	CARDINALS

WE MAKE ARRANGEMENTS TO
IMPORT SPECIALITIES BY REQUEST

(213)
549-4606

wholesale only

Send self addressed stamped envelope for list of birds currently available.

Two U.S.D.A. approved quarantine facilities.

Tues—Sat. 10 to 5:30
Sun: 1 to 5 pm

WE HAVE A USDA APPROVED QUARANTINE STATION

BUY • SELL • SHIP

BIRDS OF ALL KINDS

Specializing in Finches and Australian Hookbills

CALL (213) 341-1522 OR (213) 882-7130

20223 Saticoy St., Canoga Park, CA. 91306