

Breeding the Wompoo Fruit Dove at the Memphis Zoo

(*Ptilinopus magnificus*)

by Herb Roberts
Curator of Birds
Memphis, Tennessee

Ptilinopus magnificus, known as the Wompoo Fruit Dove or Magnificent Fruit Dove, is one of the larger species of fruit doves. From head to tail they average about 16 inches, although there is considerable difference in the size of individuals from opposite ends of their range. The fruit doves are all placed in the genus *Ptilinopus* within which there are 47 recognized species. Fruit doves are broadly distributed throughout the Australasian region and the Wompoo inhabits New Guinea, adjacent islands and eastern Australia (Goodwin, 1983).

Fruit doves, as a group, are colorful birds with green being the dominant color. The Wompoo is no exception to this rule. The back, wings and tail are primarily green with a band of yellow spots across the wing. The head and neck are gray, while the breast and belly are a rich maroon color. The underwings and ventral area are a bright yellow. The legs, feet and beak are greenish gray. The eyes are a reddish color.

The name Wompoo is derived from the courting call of the male, a deep two note call that carries for a considerable distance. As the second part of its name implies, these doves are primarily frugivores.

In the wild, fruits and berries, especially certain types of figs, make up their diet. In captivity, their dietary needs are easily accommodated (see appendix 1). At the Memphis Zoo, we have not found it necessary to alter or supplement the basic diet for any reason. Parents feeding a chick or

weaning juveniles do quite well on the same diet.

The Memphis Zoo acquired three pairs of wild-caught Wompoo Fruit Doves between November 15, 1989 through August 15, 1991. Since the sexes are not obviously dimorphic, surgical sexing and some trading was necessary.

A pair was placed in each of our two large mixed species planted aviaries, and one pair was set up in a breeding facility run. The breeding run cage consists of two, same size, connecting cages, each measuring seven feet high by six feet deep by three feet wide. One is outside the building and one is inside. Access between the cages is via a 12 inch by 12 inch door. The building is artificially lighted and heated in the winter. One of the planted aviaries is approximately 40 feet wide by 25 feet deep by 25 feet high. It contains at least three species of fruit doves. It is heavily planted and lighting is provided by skylights. The other aviary is approximately twice as large, and houses 22 species of birds.

No courtship behavior was observed until early in 1992. Courtship behavior in Wompoo is fairly typical of other Columbidae species. The male will swell out his neck and do a short bow, while uttering the two note "whom-poo" call. If the female is interested, she will approach the male and a brief bout of allo-preening will ensue. Copulation is brief and usually takes place on a tree branch or perch.

Nesting behavior is, again, fairly typical. When the female settles on a nest site, she will sit and arrange small

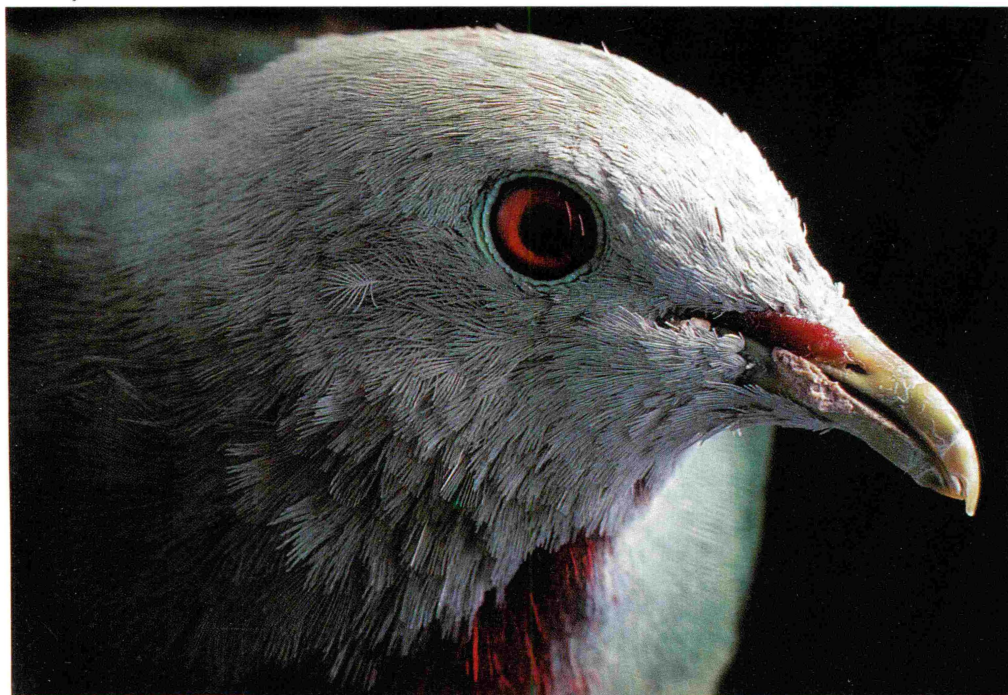
twigs brought to her by the male. The nest itself is the usual flimsy Columbidae nest, so we provide platforms for the doves to build on. In most cases they have sought out and used the platforms.

The single whitish egg is incubated, in turn, by both parents and hatches in 18 days. The pair we house in the breeding facility laid their first egg on April 1, 1992. Unfortunately, they abandoned the egg and we pulled it for artificial incubation and hand rearing. When the chick hatched on April 19, 1992, it was darker in color than other fruit dove species we've observed, and had very few down feathers. Although we were able to keep it alive for three days, it did not flourish and died on April 22, 1992. This story was repeated in early May with the chick surviving five days.

When the same pair laid their third egg and abandoned it, we decided to adopt a different strategy. An experienced pair of Jambu Fruit Doves housed in the large aviary had laid an egg about the same time as the Wompoo. When it was determined that their egg had been damaged and would not hatch, we decided to foster the Wompoo under the Jambu. After the Wompoo chick hatched, on May 20, 1992, it was substituted for the Jambu egg. The foster Jambu accepted the chick, and provided excellent care for the first month of development. At the age of four to five weeks, however, they began to refuse to feed the still dependent juvenile. The reason for this is not certain, but may have been connected to the comparatively large size of the Wompoo juvenile. At any rate, we were forced to pull the juvenile for hand-rearing. After the first two or three days, the young Wompoo ate readily from a small cup and seemed to be doing fairly well. In July, however, it took a downward turn and died on July 4, 1992. Postmortem necropsy failed to identify any definite cause of death.

During this period we hatched, and attempted to hand-rear, another abandoned chick from the same pair of Wompoo. This one survived for 11 days. Obviously, we were improving our methods, but were still ultimately failing. Basically, we were using techniques tried and proven on two other species of fruit doves.

When the pair of Wompoo housed in the smaller of the mixed species



*Adult Wompoo Fruit Dove,
detail of head.*

Adult Wompoo Fruit Dove

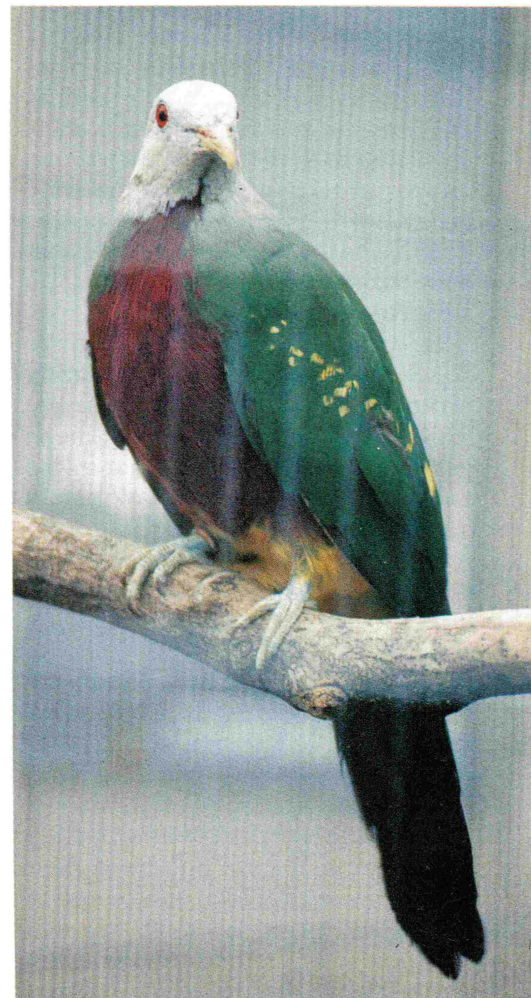


Photo by Herb Roberts



*Immature
Wompoo Fruit Dove*

Photo by Jack Kenner

*A view of the colorful
underside of the wing of a
Wompoo Fruit Dove.*

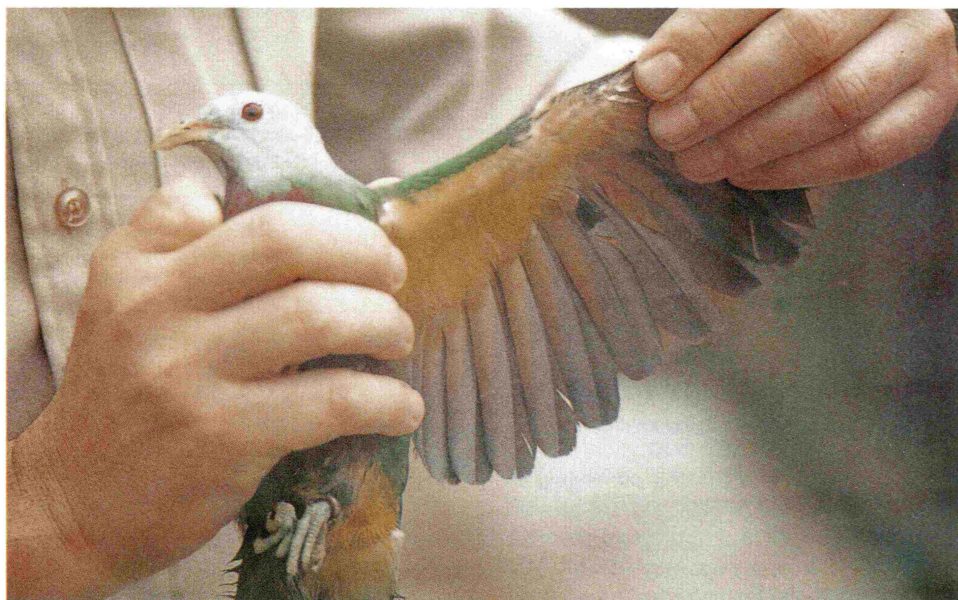


Photo by Herb Roberts

aviary laid and abandoned the egg, we pulled it and went back to the drawing board.

After a lengthy evaluation of our hand-rearing protocol and diet, we made some modifications (see appendix II and III) and were ready for the chick when it hatched on June 28, 1992. Although our earlier attempts had left us somewhat discouraged, as the days and weeks passed the chick continued to thrive. The rapidly growing youngster soon became the pride and joy of our hatchery. As of this writing, the juvenile is fully independent, almost full sized, and taking on adult coloration.

As mentioned earlier, we have developed a successful hand-rearing protocol and diet for fruit doves. However, successful does not mean perfect. We have noticed that in the early stages of feather development (one to three weeks of age), the wing primaries are of poor quality. This may be due to inadequate protein levels so we continue to investigate alternatives.

Ultimately, our true measure of success will be producing healthy parent-reared birds. To this end, we are keeping this first captive-hatched individual in the expectation of establishing a captive hatched pair. We hope they will be more secure and raise their own offspring. Until a stable captive population exists, however, we will continue in our efforts to save every viable egg of this truly magnificent fruit dove.

References

Goodwin, Derek, Pigeons and Doves of the World; Cornell University Press, Ithaca, NY 1983.

APPENDIX I

Complete adult fruit dove diet
at the Memphis Zoo and Aquarium

2 parts brown rice (cooked)
2 parts apple, diced 1/4" size
1-1/2 parts bananas, diced 1/4" size
1 part raisins, soaked in water overnight then drained
3-1/2 parts fresh seasonally available fruits (no citric fruits)

Coat above mix in a powder consisting of 2/3 ground pigeon pellets and 1/3 ground dog chow. Sprinkle vitamin and calcium supplement on top of prepared diet. We use Nekton S and Osteoform.

APPENDIX II

Hand-rearing techniques

There are any number of factors that can influence the health of a hand-raised chick. One obvious problem is an inadequate diet. MZA bird department has gone through an array of diets. We have found, through our experiences, that our current diet is adequate. We arrived at this diet by using a combination of several other diets. Although we find this diet to be effective in hand-raising, it is not without faults. The chicks have developed a condition we call "white wing." Although the cause is unknown, we suspect that the problem may be nutrient deficiency. The problem does rectify itself when chicks molt into their first adult plumage.

The most successful feeding technique is to allow the chick to drink out of a small cup or inverted nipple. Chicks are not held in the hands in order to minimize crop restriction. Never allow the chick to fill up past his crop area or aspiration could occur. This could also slow the digestion process.

Feed Schedule

Day 1 - 12

The first feeding should not occur until the yolk sac has decreased. Feed every 2 to 3 hours on a 12 to 15 hour schedule. Fast for 8 hours. Use appropriate stage formula. Temperature of formula: 105 to 110 degrees Fahrenheit. Use small cup to

present formula. Clean beak and face after feeding.

Day 12 - 35

Feed appropriate formula every 2.6 to 4 hours on an 11 hour schedule. Same as above, except graduate to a larger feeding container. During the last week of this stage, place a small pan of fruit cocktail slurry in brooder with chick. Remove pan at night.

Day 35 - 56

Feed appropriate formula 3 times daily, cutting back gradually after self feeding starts. Juvenile may be stimulated to eat adult diet by pinching food between fingers and presenting it to the chick.

If possible, put hand-reared juvenile with older self-feeding juvenile. The younger bird will learn to eat by example.

Day 56 - 84

Monitor weight of juvenile. Supplement with hand feeding only if weight loss occurs.

General Notes

1. Monitor weight daily.
2. Follow routine cleanliness procedure; disinfect incubators and brooders between use, keep feeding utensils in a disinfecting solution, etc. The Memphis Zoo uses Wavicide solution as the primary disinfectant.
3. Make fresh formula every 48 hours.

APPENDIX III

Complete hand-rearing diet for fruit doves at the Memphis Zoo.

Day	Formula	
1 - 4	50/50 Isomil-Pedialyte	
5 - 7	1 1/2 oz. Pedialyte 1 1/2 oz. Isomil 1/2 oz. fresh papaya	2 oz. Gerber Hi-Pro Cereal 1/2 oz. Gerber strained vogs.
8 - 10	1 1/2 oz. Pedialyte 1 1/2 oz. Isomil 1/2 oz. papaya	2 1/4 oz. cereal 1/2 oz. vegetables
11 - 16	1 1/2 oz. Pedialyte 1 1/2 oz. Isomil 1/2 oz. monkey chow	1 3/4 oz. cereal 1/2 oz. vegetables 1/2 oz. papaya
17 - 24	1 1/2 oz. Pedialyte 1 1/2 oz. Isomil 1 oz. monkey chow	1 1/4 oz. cereal 1/2 oz. vegetables 1/2 oz. papaya
25+	1 1/2 oz. Pedialyte 1 1/2 oz. Isomil 1 1/2 oz. monkey chow	1 1/4 oz. cereal 1/2 oz. vegetables

NOTE: Use concentrated Isomil. Sprinkle Osteoform and Nekton Bio into each feeding. Thin with 50/50 mix if needed.

Avian Trade Shows & Seminars

**Birds Exotic Spring '94 Bird Mart
Extravaganza & Sale
March 5 & 6, 1994**
Hillsboro, Oregon
For more info, contact:
Ron Marks, manager
19235 SW Pilkington Road,
Lake Oswego, OR 97035
(503) 684-3799

**Seventh National Avicultural Convention
of Australia
March 11, 12, 13, 14, 1994**
Ringwood Performing Arts & Convention Centre,
Melbourne, Australia
For more info, contact:
John Hince, publicity officer
7th National Avicultural Convention,
Donnybrook, Pipers Creek Rd., Kyneton,
Victoria 3444, Australia

**Pomona Bird Mart
March 13, 1994**
L.A. County Fairplex Bldg. #4
Pomona, California
9:30 a.m. to 4:00 p.m.
Admission \$4, youths 5-15 \$1, Parking \$3
For information call: (805) 269-0424

**Carolina Ornamental Bird Society
Bird Swap, Sale and Raffle
April 9, 1994**
from 7:00 a.m. until 1:00 p.m.
Craven County Fairgrounds
Hwy. 70 east of New Bern, NC
For information call:
Ken Bradley (910) 842-9245

**Bird Clubs of Virginia
sponsor the
10th Virginia Bird Convention & Bird Mart
April 9-10, 1994**
National speakers, bird care mini seminars, huge
bird mart, bird sale room, giant raffle.
Omni International Hotel at Waterside
777 Waterside Dr., Norfolk, VA
Call (804) 622-6664
For info call Dick Ivy, (804) 898-5090

**Greater Dayton Bird Expo and Auction
April 10, 1994**
Montgomery County Fairgrounds
Dayton, Ohio
For information contact:
Paula or Pete DiSalvo (513) 848-4819
15 W. Franklin St., Bellbrook, OH 45305

**Buffalo Hookbill Association
3rd Annual Exotic Bird Show
April 17, 1994**
10:00 a.m. to 6:00 p.m.
in the Grange Bldg.
Erie County Fairgrounds, Hamburg, NY
For info. call: (716) 496-6046

**5th Annual America's Family Pet Show
at the Fairplex - Pomona, California
Los Angeles County Fairgrounds
April 22-24, 1994**
Birds, dogs, cats, fish, reptiles, pigs, llamas, etc.
For info. contact Tom H. McLaughlin,
Western World Pet Supply Assn.
406 South First Ave., Arcadia, CA 91006-3829
Phone (818) 447-2222 • Fax (818) 447-8350

**Madison Area Cagebird Association of Wisconsin
(M.A.C.A.W.)
presents its
7th Annual Bird Fair
May 1, 1994**
Dane County Forum Exposition Center
Madison, Wisconsin
Vendors, hourly raffles, morning seminar.
For info. call:
Rita Shimniok (608) 798-4877
For table rental call:
Jennifer Dobson (608) 241-2635

**Tennessee Valley Exotic Bird Club
presents its
6th Annual Spring Exotic Bird Fair
May 6 & 7, 1994**
Knoxville Convention Center
World's Fair Park
For information call:
Barb Kimmitt (615) 693-7841 or
Sandi Brennan (615) 753-9841
or write to TVEBC, P.O. Box 51425
Knoxville, TN 37950-1425
The TVEBC is the host club for the
AFA '94 August 4-6 Convention.
Prepare yourself for a good time!

**Greater Chicago Cage Bird Club
Spring Bird Fair
May 7, 1994**
Hattendorf Center
10:30 a.m. - 5:30 p.m.
225 E. Elk Grove Blvd., Elk Grove Village, IL
Half mile east of Arlington Heights Road
For information call: (708) 705-6260

**Northwest Exotic Bird Society
sponsors the
Washington Exotic Bird Fair
May 7, 1994**
Puyallup Fairgrounds
Puyallup, Washington
10:00 a.m. to 7:00 p.m.
For information call:
Susan Hoyer (206) 441-0360

**Portland's Rose City Exotic Bird Club's
Spring '94 Bird Expo and Sale
May 14 and 15, 1994**
Washington County Fairgrounds
Hillsboro, Oregon
For information contact:
Louise Dube, P.O. Box 1016, St. Helens, OR 97051
or phone (503) 366-0161

**West Pasco Exotic Bird Club's
Fifth Annual Bird Fair
May 15, 1994**
from 9:00 a.m. to 4:00 p.m.
at the Hudson Community Club
Hudson, Florida
For information call:
Jackie (813) 863-7217 or Cindy (813) 868-0521

**Central New York Caged Bird Club
Spring Sale and Exhibition
May 21, 1994**
Great Northern Mall
Route 31, Clay, NY
For information contact:
Dave Dixon (?) 598-5927
or Debbie Johnson (?) 598-5024

**3rd Annual Upper Midwest Bird Mart
May 21, 1994**
Minnesota State Fairgrounds
Empire Commons Building
St. Paul, Minnesota
9:00 a.m. to 4:00 p.m.
Admission \$3, and under 12 \$2
For information contact:
P.O. Box 20601, Bloomington, MN 55420
Call Nellie (612) 854-6439
or Dallas (612) 427-1046

**Central Pennsylvania Cage Bird Club
Bird Mart & Pet Bird Show
May 22, 1994**
Holiday Inn, Grantville, PA
located at the Hershey-Harrisburg Exit #28,
off I-81 at Route 743
For information call:
Janet Landvater, bird mart mgr.
RD #1, Box 135-K, Hershey, PA 17033
Phone (717) 533-4251

**Middle Tennessee Cage Bird Club
presents its
Bird Fair
May 28, 29, 1994**
at the Middle Tennessee State University Campus
Agriculture Pavilion-Livestock Center
Murfreesboro, TN
Contact Fair Chairman: Larry Crawford
1447 Twin Oak Dr., Murfreesboro, TN 37130
Phone (615) 890-6906

**Greater Rochester Hookbill Association
Sale and Auction
June 4, 1994**
10:00 a.m. until 4:00 p.m.
Admission free
Genesee Conservation League
1570 Penfield Rd., Penfield, NY 14526
For information write:
GRHA, P.O. Box 427, Penfield, NY 14526-0427
or phone: Gloria Giraulo (716) 342-9529 or
Linda Matteson (315) 597-4836

**Central Alabama Avicultural Society
presents its
Annual Show & Fair
September 3 - 4, 1994**
Howard Johnson Governors House Hotel
2705 E. South Blvd., Montgomery, AL
Hotel reservations: 1-800-334-8459
For information call:
(205) 857,3817, (205) 892-2204, or (205) 279-6829

**Connecticut Association for Aviculture
presents its
18th Annual Exotic Bird Show
October 22, 1994**
"Tails-U-Win" Hall
175 Adams Street, Manchester, CT 06040
For information call:
Show Secretary Chris Voronovitch
at (203) 649-8220