

The Blue-crowned Motmot

(*Momotus momota*)

by Josef H. Lindholm, III
Founding & Life Member, International Softbill Society
Fallbrook, California

Photo by Ernesto Enkerlin/Dumac



The Blue-crowned Motmot has adapted remarkably well to habitat disturbance and breeds in plantations, second-growth, and even the outskirts of towns. It is the most common of the nine species of motmots. It is also the only species reproduced successfully in captivity. The motmots come from Central and South America.

My father (a dentist) does not now remember exactly why, but, when I was four or five, on two successive evenings, he read to me, by the light from a ten-gallon fish tank in an otherwise darkened room, the entire children's edition of *Birds of the World*, with Arthur Singer's wonderful pictures. I don't imagine he foresaw the professional results. At any rate, the most vivid of several graphic impressions from those two nights was my introduction to the motmot. One reason, of course, was the gloriously ridiculous name (which happens to mean "socks" in my mother's Cantonese). On the other hand, there was the Motmot's marvelous tail.

Racket-shaped feathers are one of those attributes that give tropical birds so exotic an aura. They are possessed by no birds in Europe or North America. The African Standard-winged Nightjar (*Macrodipteryx longipennis*) bears one on each wing. They sprout from the heads of the four Six-plumed Birds of Paradise of the genus *Parotia*. Otherwise, rackets adorn the tails of certain

birds; the Racket-tailed Parrots (*Prioniturus*), the Little King and Magnificent Birds of Paradise, various hummingbirds, Tyrant Flycatchers and Drongos, the Queen Whydah,

and six of the eight species of motmots.

The eight motmot species are classified in six genera, comprising the family *Momotidae*. That so many genera in so small a family are recognized by ornithologists should imply that this family is ancient, and the birds now living are the genetically isolated remnants of what was once a much larger group. A similar conclusion may be drawn from the order *Coraciiformes*, the "roller-like birds," to which this family belongs. This order's other families are wonderfully distinct from each other: the 91 kingfishers, found world-wide; the five tiny todies, confined to the Caribbean; the 25 bee-eaters and 16 rollers, two graceful Old World families; the peculiar Madagascar Cuckoo-roller; the beautiful crested Common Hoopoe, its various subspecies found in Eurasia, Africa and Madagascar; the seven crestless African Woodhoopoes; and the 51 grotesque hornbills of the Old World Tropics.

While the center of distribution and diversity of most tropical American families of birds is the South American continent, all eight motmot species occur in Central America and only four of these extend their ranges to South America. On the other hand, six can be found in Mexico (Peterson & Chalif, 1973).

The two smallest motmots, of the genera *Aspatha* and *Hylomanes*, have no rackets. The two central tail feathers of the other species initially look fairly normal, if somewhat



The motmot complex at Emerald Forest Bird Gardens, especially designed for tunnel-nesting birds.

Photo by Jerry Jennings

broadened at the tips. The barbs along a lower portion of the shaft, however, are only weakly attached, and are soon lost. Though this is usually stated in books to be the result of "normal preening," Alexander Skutch (1983), in all his extensive observations of five motmot species, never observed such behavior and thinks it just as likely a result of wear and tear, or the barbs falling off by themselves.


The Emerald Forest Bird Gardens received a Blue-crowned Motmot (*Momotus momota*) on May 2, 1991, which arrived with a damaged tail, due to shipping, both rackets having been broken off. I noticed, in the last week of July, that new central tail feathers had grown in. About three days later, one of the feathers had assumed its typical racket shape. I believe it is usual for one feather to assume its typical shape ahead of the other, briefly giving the tail an asymmetrical appearance.

The most wide-ranging of all the motmots is the Blue-crowned Motmot (*Momotus momota*). Its 20 subspecies are distributed from the states of Nuevo Leon and Tamaulipas, in the northeastern corner of Mexico, to northwestern Argentina (Peters, 1945). These subspecies exhibit a great deal of variation, some so pronounced that they were considered separate species (Delacour, 1926). This "splitting" is perpetuated by L. Irby Davis (1972), who, in his *Field Guide to the Birds of Mexico and Central America*, recognizes and provides illustrations of three of these "species." The obvious differences are in the coloration of the crown, throat and underparts.

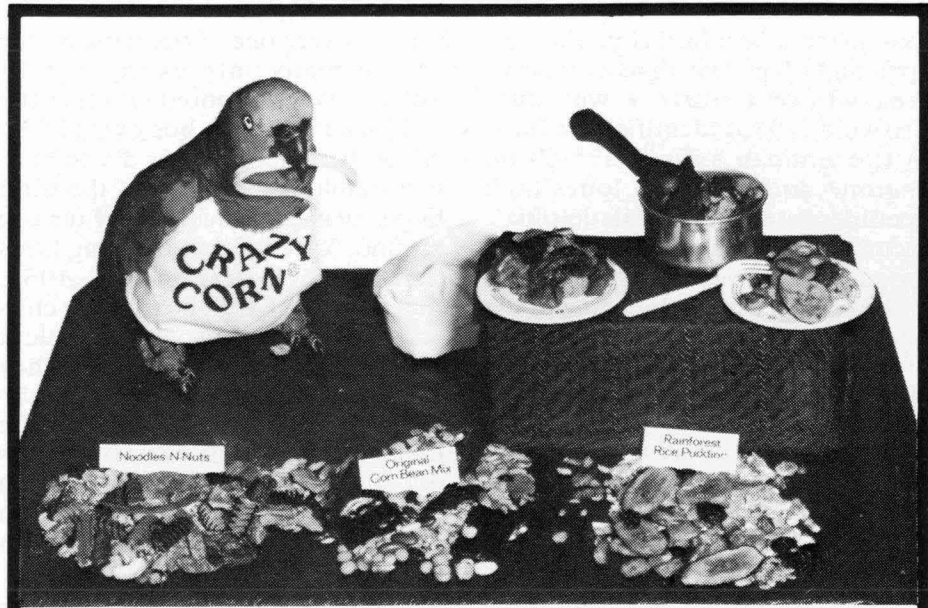
As one might expect, the Blue-crowned Motmot, with its enormous range, has been the most extensively kept member of its family in collections. I have not come across any record of this bird in captivity before 1900. The earliest record I know of was brought to my attention by Marvin Jones, registrar at the San Diego Zoo, and zoo historian *par excellence*. It was a specimen of the Central American subspecies (*M.m. lessoni*) exhibited at the Philadelphia Zoo in 1903. Jean Delacour (1926) had a Guyanese bird (*M.m. momota*) for four years when his aviaries at Villers-Bretonneux were destroyed in 1918, in the last days of World War I. Delacour (1926) also mentions that his late friend Hubert Astley had one escape from his British aviaries after

ABOUT BIRDS
 (815) 648-4078
 Roudybush Diets 
 Handfed & imported birds
 11508 Rt. 173 HEBRON, IL 60034

 Kathleen Szabo Harring
 domestic handraised babies
 (305) 258-2373
 LUV THEM BIRDS, INC.
 P.O. Box 0285, Goulds, FL 33170

 **Gamini Ratnavira**
 Wildlife Artist
 850 Hillcrest Place (studio)
 (619) 723-9256
 300 N. Brandon (gallery)
 Suite 7, Victorian Village
 (619) 723-9256
 Fallbrook, CA 92028

The Wright Roost
 Jeri Wright
 (206) 838-9802
 NOW HAND-FEEDING
 Hyacinths & other macaws, Cockatoos
 Conures & Amazons
 Domestic, Close-Banded
 Roudybush Distributor 



EASY CRAZY CORN®

They'll Practically Feed Themselves!

- Health food. Cook ahead monthly, freeze, microwaveable. Serve in seconds!
- Broadens diet. Birds love warm foods.
- Economical. 3 bulk bags make 12 gallons.

Ecstatic response — dozens of letters.

1 800 BIRD YUM

We wholesale to breeders.

ALL TAME BIRDS
 go **WILD** for



13330 Bessemer St.
 Van Nuys, CA 91401
 (818) 997-0598
 FAX: (818) 997-0566

being in captivity for ten years. By 1926, Delacour knew of three additional subspecies imported into Europe or England; the Central American *M.m. lessoni*, *M.m. subrufescens* from the Caribbean coast of South America, and *M.m. bahamensis* from the islands of Trinidad and Tobago, which Delacour had collected on an expedition to Trinidad.

Of the 205 species in the order *Coraciiformes*, the very first to be captive-bred in North America was the Blue-crowned Motmot – in July 1951 at the Philadelphia Zoo – the first motmot breeding in any collection (Griswold, 1956). This breeding took place in the Bird House's large open flight cage, which had a planted area where a burrow was dug. Griswold (1956) identifies the birds as the Andean subspecies (*M.m. aequatorialis*). Marvin Jones took detailed notes from Philadelphia's records, which indicated the breeding pair arrived there in 1942.

The second captive breeding of the Blue-crowned Motmot is the subject of the most extensively detailed article on motmot captive propagation I am aware of, by Roland Hawkins (1955), the first director of the Pittsburgh Conservatory-Aviary, where this achievement occurred in the famous free-flight hall (Hawkins, 1954), the site of many other important breedings. The parents appeared to have been of different subspecies, the male was "several inches larger" than the female, and "much darker." For two years prior to the introduction of the male, the female had lived with another bird of the same sex. On February 1, 1955, the male was placed in the exhibit and immediately both females alternately perched next to it, twitching their tails like pendulums. The male and female called continuously during these moments. The next day, one of the females had to be removed, being attacked by the other with "relentless savagery."

Courtship activities intensified with the attacked female's departure (Hawkins, 1955), the male continuously offering food, and an occasional leaf or twig to its prospective mate. When the birds were perched together, both swung their tails rhythmically, and called. Six days after the male's arrival, both motmots commenced tunneling into a dirt bank. As this site was intended for replanting, Mr. Hawkins dug two foot-deep holes in another location.

Three days later, the birds began enlarging them, both using only their beaks, the dirt tossed out between the feet at a "most remarkable rate." Digging was only observed in the morning. Work appeared to be completed March 2, and no further male courtship activities were noted. Not until April 17 was any copulation seen, but very shortly afterward, the female spent almost all its time in the burrow. The male regularly brought food but never, at this time, entered the burrow.

On May 3, both adults were seen carrying food to the tunnel, Hawkins (1955) noting that the male made ten trips to every one of the female. One of the many interesting details Roland Hawkins noted was that the male always left the burrow tail first, while the female always did so head first, resulting in the loss of the latter bird's rackets because of her turning around. When the two young birds first left their nest May 30, 1955, their tails already "showed the characteristic weakening of the barbule at the shaft." It was also noted they were "immaculately clean," a significant observation in light of the motmot's notoriety for filthy nests full of feces and food remains. Austin (1961) and Skutch (1983) both observed that motmots never clean out their nests.

Prior to 1970, only one further captive breeding appears to have taken place. Bates and Busenbark (1977) make passing reference to a breeding at the San Diego Zoo – an incident never published and not listed by the *International Zoo Yearbook*. I contacted K.C. Lint, Curator of Birds, Emeritus at San Diego, who informed me this breeding took place in the 1960s in the famous walk-through Rainforest Cage. One young bird left the nest burrow and was noted by Jean Delacour.

The first Blue-crowned Motmot breeding listed by the *International Zoo Yearbook* occurred in 1970 at the famous, but long-since-closed English bird park, the Winged World at Morcambe, and is described by that collection's then director Clive Roots (1970). A pair, which had been housed in various indoor exhibits at the Winged World since 1966, nested several times without success. That year, having by then been placed in a very large indoor aviary with many other birds, they commenced a burrow beneath a concrete pool. In this case, "the adults were extremely

secretive in their movements" prior to their eggs hatching, so an incubation period was not recorded. On April 13, both birds began carrying food to the tunnel frequently, and chick vocalizations were first heard on April 23. From that date to the emergence of the first of the two chicks was "exactly 28 days," the second appearing two days later.

Between the emergence of these birds, their parents were again observed copulating. The young, on leaving the nest, were the size of the adults. It was noted they lacked the "breast spot." From my observations of the four birds at Emerald Forest Bird Gardens, this "spot" is actually composed of two very small black feathers.

From the breeding records of the *International Zoo Yearbook*, I found five Blue-crowned Motmots were reared in 1970 (Clive Roots, 1970, noted that the parents had young in the nest a month after the first offspring had emerged). For reasons of its stockholders, the Winged World closed before 1980. From 1972 to 1976, however, 11 more chicks were reared, the most in one year being five, in 1975 (Zoological Society of London, 1972, 1974 and 1976-78).

The other zoos outside of the U.S. listed by the *International Zoo Yearbook* as having bred Blue-crowned Motmots are: Munster (Germany), with one each raised in 1977, 1978, and 1980; London, where two were raised in 1982, and one in 1983; Thetford, Britain, where two each were successfully raised in 1985 and 1986, and four in 1987 (the most recent year for *IZY* records); and Toronto, with three reared in 1987 (Zoological Society of London, 1979-80, 1982, 1984-85 and 1988-90).

From 1972 to 1987, the breeding records of the *International Zoo Yearbook* list 13 U.S. zoos that bred this species (Zoological Society of London, 1974-90), resulting in a total of 101 fully raised. Beginning in 1983, the *IZY* indicates second generation breedings, commencing with Denver. The Riverbanks Zoo in Columbia, South Carolina followed in 1984 and the National Aquarium in Baltimore in 1986. Toronto's 1987 chicks are also indicated as having at least one captive-bred parent (Zoological Society of London, 1974-90).

The U.S. zoo population of Blue-crowned Motmots appears to be fairly stable. On December 31, 1982,

Muller (1983) lists 15 American zoos holding the species, with a total of 37 specimens. I am indebted to Grenville Roles, who provided me with the December 31, 1990 abstract of the *International Species Inventory System* which lists 25 American public collections with these birds, holding a total of 62 specimens, 72% indicated as captive-hatched. *ISIS* lists only three of these institutions as having bred Blue-crowned Motmots in 1990; The Franklin Park Zoo in Boston, with three raised; Dallas Zoo with one; and Providence, Rhode Island, where two were raised, but where none were inventoried for the end of the year.

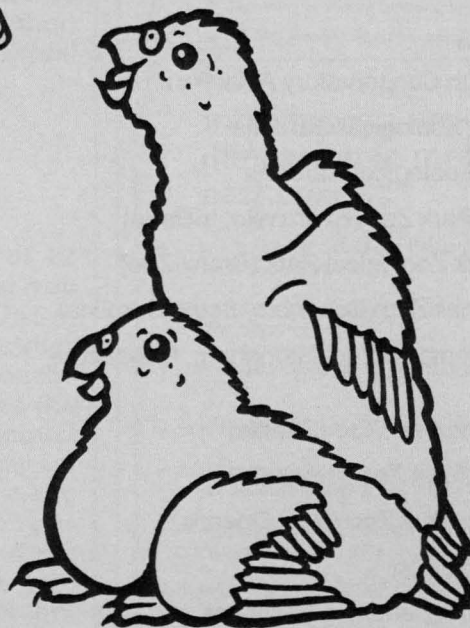
Unlike the Ross' Touraco, Violet Plantain-eater, Toco Toucan, Lilac-breasted Roller, and Fairy Bluebird, I do not know of any attempt to establish a studbook for this bird. Of all the zoos listed in the *IZY* breeding records, only the New York Zoological Park identified their subspecies; the Central American (*M.m. lessoni*). Gail Worth of Aves International told me the birds she imported about 1980 came from Ecuador. Peters (1945) lists three subspecies for that country. I am not aware of any importations to the U.S. after 1988.

So far as I know, there are presently very few Blue-crowned Motmots in private hands in this country, and I am aware of no private breeding. Before the 1972 Newcastle's Disease restrictions, and the export prohibitions of most Latin American countries, they appear to have been commercially imported with some regularity.

While plotting the sites of future enclosures at Emerald Forest Bird Gardens shortly after the transfer to Fallbrook in 1990 of the toucans and other birds from Woodland Hills, Jerry Jennings, the Garden's owner and director, noted an extensive dirt bank, an ideal location for an aviary for earth-tunneling birds. Following Mr. Jennings' initial design, Sid Milne, who has done much in-house construction here, planned and built a soaring, wood-framed aviary with a foundation of stout railroad ties, consisting of three compartments, each 12' wide by 18' tall and 24' long. This complex was completed in mid-April 1991, and at once received its first inhabitants, a pair of Blue-crowned Motmots of uncertain geographical origin, obtained from a commercial importer by Jerry Jennings in 1988, as well as a female Silver-eared Mesia

A N N O U N C I N G

New Hand Feeding Formula!



SCENIC BIRD FOOD HAND FEEDING FORMULA
is the easiest to use, just add water.

Then, wean your birds to SCENIC BIRD FOOD, the first ALL NATURAL FLAVOR extruded morsels made from real RED APPLE, CHEESE, and CORN.

Since 1987, our scientific research and testing have been presented to six prestigious Veterinarian and Nutrition Conferences and published in prestigious Nutrition Journals.

SCENIC BIRD FOODS are manufactured in an FDA APPROVED human food mill which guarantees cleanliness and safety for your birds. Our human grade ingredients and manufacturing make a food your birds (and you) will love to eat!

NORTHWEST
503-496-0733

OAKLAND
C.M. Volkman Co.
800-273-2473 (CA)
415-261-7780

LOS ANGELES/SAN DIEGO
Our Feathered Friends
619-280-5134

CANADA
800-363-9663

PENNSYLVANIA
Sybil's Aviary
717-442-4495

OHIO VALLEY
Van Duyn's Aviary
614-875-0888

ST. LOUIS
El-Mel, Inc.
800-243-5635

NORTHEAST
800-323-4267

MICHIGAN/WISCONSIN
Silvermoon Pet Supply
517-790-9202

MIDWEST
800-878-2473

TEXAS
Avian Kingdom Supply
800-256-4771

FLORIDA/ATLANTIC COAST
Avian Specialties
800-443-1441

VENTURA/SANTA BARBARA
Santa Barbara Bird Farm
805-969-1895

MARION ZOOLOGICAL INC. 113 N. FIRST P.O. BOX 212 MARION, KANSAS 66861

TABLE 1
Blue-crowned Motmots (*Momotus momota*) Hatched in U.S. Public Institutions, 1972 - 1987
 (Compiled from the breeding records of the *International Zoo Yearbook*)

Location	Years Bred	Number Hatched	Number Fully Reared
Pittsburgh Conservatory Aviary	1972 - 73 & 1985 - 87	18	16
Houston Zoological Gardens	1974	3	3
Denver Zoological Gardens	1975 - 79 & 1981 - 86	16	12
Mesker Park Zoo (Evansville, Indiana)	1975 & 1978	2	2
New York Zoological Park (Bronx Zoo)	1976 - 1978	3	2
Riverbanks Zoo (Columbia, South Carolina)	1980 - 82 & 1984	19	17
Stone Memorial Zoo (Stoneham, Massachusetts)	1982 - 84 & 1986	18	18
Woodland Park Zoo (Seattle)	1984 - 85	13	13
Franklin Park Zoo (Boston)	1985	5	4
Audubon Park Zoo (New Orleans)	1985 - 87	9	9
San Diego Zoo	1985	2	0
National Aquarium in Baltimore	1985	1	1
Burnet Park Zoo (Syracuse, New York)	1987	4	4

(*Leiothrix argentauris*) and a pair each of Silver-billed Tanagers (*Ramphocelus carbo*), and Peruvian (Pope) Cardinals (*Paroaria gularis*). A pair of Argentine (Red-crested) Cardinals (*P. coronata*) share the second compartment with a pair of Blue-crowned Motmots that both arrived May 2, 1991. The male, from Mickey Ollson's Wildlife World Zoo near Phoenix, Arizona, was hatched at Denver Zoo. The female, received from the Burnet Park Zoo, Syracuse, New York, was hatched at the Seattle Zoo in 1985. While the Denver bird has a distinctive rusty wash across its chest and underparts, the corresponding areas on the female are a noticeably clearer shade of green. The 1988 pair appears to be of a somewhat intermediate shade. As all four birds have green throats, and beautifully defined blue and black crowns, they otherwise basically conform to the subspecies found throughout most of Central America (*M.m. lessoni*).

The daily maintenance of these birds is simple: soaked, low-iron dog food; and chopped papaya and cantaloupe with halved grapes, replaced daily. They spend most of the day perched on the straight branch that runs across the upper front of each flight, though, with the recent addition of a Purple Orchid Tree (*Bauhinia variegata*) to one of the

aviaries, they frequently perch in that. The pair in the other cage does not spend time in the European Birch (*Betula pendula*) planted there. Most of the day, our motmots sit still and silently on their perches, a habit typical to the family, earning them the Latin American name "Bobo" — fool (Austin, 1961). This is, of course, an excellent strategy for suddenly catching large insects and other small passers-by. Every so often, our birds twitch their tails (another native name translates as "watch maker"), and utter a typical call, a repeated "woop-woop-woop" followed by a "chuck-chuck-chuck." The name "motmot" is, according to Austin (1961), "a crude English simulation" of this call. Of late, we have noticed pairs perched together, "wooping" in an excited fashion, and flicking their tails more rapidly. We hope this will shortly be followed by vigorous tunnel-digging.

Blue-crowned Motmots have adapted remarkably well to disturbed, second-growth and agricultural habitats in Central America (Skutch, 1983), and are thus somewhat less vulnerable to rain forest destruction than other Central American birds. The achievement of establishing a self-sustaining captive population of any bird stands on its own merits. It is to be hoped that the promising beginnings in Blue-

crowned Motmot propagation will result in the permanent establishment of this beautiful bird in American public and private aviculture.

References

- Austin, O.L., 1961. *Birds of the World*, Golden Press, New York.
- Bates, H.J. & R.L. Busenbark, 1977. Motmots *IN* Rutgers, A., K.A. Norris & C.H. Rogers, 1977, *Encyclopedia of Aviculture*, Vol. III, Blandford Press, Polles, Dorset.
- Davis, L.I., 1972. *A Field Guide to the Birds of Mexico and Central America*, University of Texas Press, Austin and London.
- Delacour, J.T., 1926. Motmots. *The Avicultural Magazine*, Series IV, Vol. IV, 33*.
- Griswold, J.A., 1956. Breeding of Motmots in Captivity (correspondence). *Ibid*, LXII, 42.
- Hawkins, R.W., 1954. A New Building for Bird and Plant Exhibition. *Ibid*, LX, 69-72.
- , 1955. First Breeding of the Common Motmot (*Momotus momota*) in Captivity. *Ibid*, LXI, 230-233.
- Muller, K.A., 1983. *Bird Breeding Programs, 1982*. Zoological Society of San Diego.
- Peters, J.L., 1945. *Checklist of Birds of the World*, Vol. V, Harvard University Press, Cambridge.
- Peterson, R.T. & E.L. Chalif, 1973. *A Field Guide to Mexican Birds*. Houghton Mifflin, Boston.
- Roots, C., 1970. Breeding the Blue-crowned Motmot at the Winged World (*Momotus momota*). *The Avicultural Magazine*. LXXVI, 188-189.
- Skutch, A.F., 1983. *Birds of Tropical America*. University of Texas Press, Austin.
- Zoological Society of London, 1972-1990. *International Zoo Yearbook*. XII-XXVIII.

* I am grateful to Steven P. Johnson, Librarian of the New York Zoological Society, for providing me with a copy of this article. ●