

The complete color pattern including coral beak, legs and feet is visible in this photo of an adult male Renault's ground cuckoo. Another name for the species is red-billed ground cuckoo.

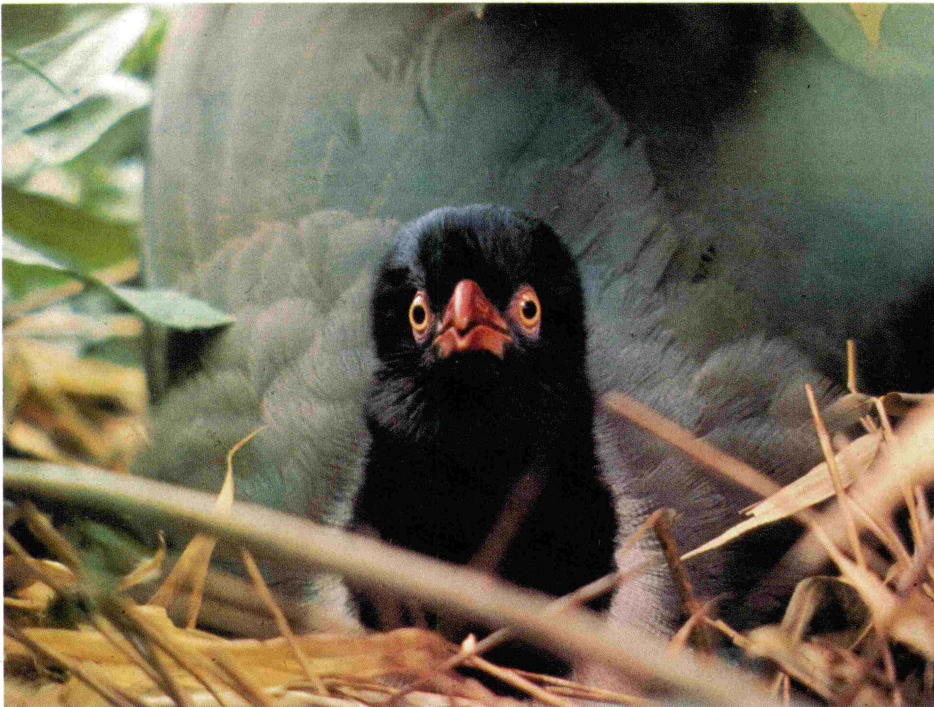


# the Red-billed Ground Cuckoo

*Carpococcyx renauldi*

by  
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Photo by Ralph Horn



Incubating female cuckoo on nest engages in threat display as she is photographed.

Photo by Ralph Horn



A 14-day-old cuckoo chick also gives threat display. The younger nestling is 10 days old.

The jungles of Malaysia and southeast Asia contain many species of cuckoos, two of which form the genus *Carpococcyx*. One of these, *Carpococcyx renauldi*, the red-billed or Renault's Ground Cuckoo, is found primarily in Thailand and Vietnam and has been of ornithological interest since its discovery in 1895. At that time Father R. D. Renauld, a missionary of Quangtri Province in central Vietnam, sent three skins to the museum in Paris. Oustalet described the species, aptly named Renault's Cuckoo, from those skins in 1896 and published his findings in the *Bulletin of the Paris Museum of Natural History*, Volume 2, Page 314. Little more was heard about the species until 1915, when M. E. G. Herbert obtained two specimens in eastern Thailand and M. Williamson collected one in southern Thailand. These skins brought the number of specimens in museum collections to six: three in Paris, two in London and one in Thailand.

When Jean Delacour and M. P. Jabouille, the civil officer and traveling commissioner of Vietnam, undertook an ornithological exploration of French Indo-China in 1923, one of their goals was to investigate the status and habits of this somewhat mysterious and secretive species. On April 1, 1924; they obtained

their first two specimens which were collected by the residents of Phugia Province in central Vietnam. One of the specimens was sent to the Paris Museum, and the other was offered to Lord Rothschild.

In 1925 M. A. Neveu, director of the Saigon Zoological Garden, notified Delacour that the Zoo had received a specimen of Renault's Cuckoo and that it had adapted extremely well to captive conditions. Shortly thereafter an Indian settler named Gauthier, who resided in north Vietnam, provided the expedition with two live specimens in perfect condition. He apparently collected them from nests on an annual basis and, ignoring their rarity, raised them for food. Mr. Cahulet, administrator of the forestry department in Vietnam, was also instrumental in obtaining both live and dead specimens for the expedition.

It wasn't until the spring of 1926 that live specimens reached Europe, when two were imported into France by Delacour for his estate at Cleres. Both birds reportedly arrived in excellent condition although with somewhat ruffled plumage. Unfortunately one of these received a broken leg through an accident and had to be euthanized. The remaining

bird was transferred to the aviaries of M. A. Ezra at Foxwarren in England when Delacour left to return to Indo-China in the fall of 1926. In the spring of 1927, this specimen was joined by three others, also sent by Delacour.

By that time the exploration team had gained insight into the life of Renault's Cuckoo. They found it to be a shy inhabitant of the thick jungle undergrowth of often inaccessible terrain; one that took cover at the slightest disturbance, usually escaping on foot; and one that defied easy observation and, therefore, a species perhaps not as rare as previously thought. They determined its diet to consist mainly of worms, grubs, insects and small vertebrates. They compared its vocalizations to that of the Argus or Rheinhardt's pheasant, the male delivering his song while perched on a shrub or low-lying limb. They reported that during this display, the male would often open and close his wings many times while nodding his head up and down.

The first specimens, maintained by Delacour and subsequently by Ezra, were fed a diet of minced meat, mealworms, earth worms, mice, various insects and even bread and boiled maize. The fact that they were tolerant of other avian forms, both large and small, that occupied the same aviary was astonishing; however, it was noted that they were quite quarrelsome with each other when first introduced to the aviary as a small group. These specimens were kept outside from June to October and were tolerant of the often chilly nights. Moulting occurred in July.

Because there is no sexual dimorphism in the species, it was extremely difficult to select pairs. Thus, Ezra kept all four birds together. On July 3, 1927, the first egg was laid at Foxwarren in a nest composed of twigs and leaves and located beneath a small tree. Unfortunately, the egg disappeared within an hour. It was believed to have been eaten by other occupants of the aviary (babblers, rollers, rails and starlings) which, consequently, were removed, leaving the cuckoos by themselves. A second egg was laid July 4. It was sent to Lord Rothschild since it was the first to be described for the species. The egg was fairly round and white in color, with a somewhat rough shell. A third egg, laid on July 6, was incubated by at least three of the cuckoos for a period of ten days before it, too, disappeared. More eggs were produced over the next few years, with some fertility but without hatching success. Eventually all the cuckoos died, there being no opportunity for replacement.

At least one other collection, other

than those previously noted, was documented as having specimens of Renault's Cuckoo prior to 1970. In 1971 (approximate) this species began appearing in both zoos and private collections as a few shipments originating in Thailand, no doubt, began arriving in the United States and Europe.

Several collections soon had birds that produced eggs, but it wasn't until 1975 that avicultural success was finally achieved in Europe at the Walsrode Bird Park. During 1977 both the Metro-Toronto and Philadelphia Zoos were also successful in propagating this species.

In 1972 the Philadelphia Zoo had obtained two specimens from different dealers, and both birds produced eggs in the years that followed. In December 1975 a third bird was obtained on breeding loan from the Bronx Zoo. As events would later prove, this bird was not only a male, but a viable one.

In the spring of 1977 an unknown egg was discovered on the ground in the large planted exhibit (30' long, 12' deep, 9' high) where the new bird and one of the females were housed. Placed in an incubator, the white egg (43.9 mm x 32.5 mm., weighing 23 g.) hatched on April 4. Although the nestling did not survive, it was identified as a young ground cuckoo. Weighing 21 g., the young bird had slate-colored skin with sparse black hair-like down and a dark red mouth interior when it gaped.

The same pair built a nest in June in a dense shrub at about 5' above ground. Poorly constructed of twigs and leaves, the nest had a low profile and measured approximately 15'' in diameter. By June 28, six eggs were in the nest and the onset of incubation was believed to have been June 26.

Only three of the eggs proved to be fertile; two eggs hatched on July 14 and the third the following day. Both parents had shared incubation duties, the female probably sitting 75% of the time. They were also quite defensive on the nest, threatening keepers with open mouths and cocked wings. The parents fed the young ground cuckoos horsemeat and pinkies. Before feeding the chicks, they would rub the horsemeat into the soil substrate thoroughly coating it with earth. As the chicks grew, the parents would also tear apart and feed adult mice.

Quite large upon hatching, the chicks were fast growers. They were partially feathered on the wings and tail and had fully opened eyes by the tenth day. The young birds began venturing onto the limbs surrounding the nest on the 24th day and were seen on the ground on the 30th. At this time the young were fully

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feathered, the head and tail being dark brown and the body plumage being greyish brown to light grey below. At 45 days of age their plumage was intermediate between this and that of the adults. When the young were three months old, they were indistinguishable from the parents.

Since the first successful propagation of three birds in 1977, the Philadelphia Zoo has successfully reared 15 other Renault's ground cuckoos, nine from the original pair and six from second generation pairs. At the time of the writing, the Philadelphia Zoo is maintaining 10 birds on the premises.

The first F<sub>2</sub> (third generation) chick was produced by yearling parents (in fact, the female was only 11 months of age) in 1980. Unfortunately this bird was killed by a southern lapwing in the same exhibit after it had fledged. The same F<sub>1</sub> male with another F<sub>1</sub> mate (his original mate dying from aspergillosis late in 1980) produced successful nests of three and two in 1981.

The Philadelphia Zoo's experience with this species has shown that clutch sizes range from two to six. Never were all of the eggs fertile in the clutches of five or six. In the one instance where four eggs hatched, the parents threw one of the chicks from the nest at two days of age. Nest heights have ranged from 3' to 15' above ground and have been constructed in both natural branch crotches and wire baskets. Although the nest structure is basically flimsy, if refurbished over the years it may in time resemble that of an osprey's. Subsequent hatchings show the incubation period to be 18 days as was estimated for the first hatching in 1977. As noted above, sexual maturity in captivity can occur at 11 months.

In handrearing one chick, the Philadelphia Zoo fed pieces of pinkies sprinkled with Vionate for the first few days. As the birds grew, this diet was changed to 75% whole pinkies and 25% soaked Gaines Meal. Twigs were always used as a substrate in its nest basket; these were increased in size as the bird grew to prevent foot problems.

As this species is mainly terrestrial, a loamy or leafy substrate in its aviary is also important for the health of the adult's feet. Sand, in addition to being an irritant to the feet, may present another problem. At the National Zoo in 1980, the adults, as is their habit, rubbed horsemeat in the sand substrate and fed it to their young; the chicks died from impaction of the sand.

In the hopes of establishing the Renault's ground cuckoo in captivity, the Philadelphia Zoo has sent captive-bred

specimens to the Bronx and San Diego Zoos and soon will send a pair to the St. Louis Zoo and exchange birds with the National Zoo, whose stock is of Toronto origin. Since the species is not bothered by constant zoo traffic near its nest and requires a minimum of special food for rearing its young, its establishment in captivity should become a reality. (In addition to horsemeat and pinkies, the Philadelphia Zoo now also feeds crickets as a rearing food for the first week after hatching.) As a further note to its suitability to captivity, the Philadelphia Zoo found that F<sub>1</sub> birds sitting on the nest would allow themselves to be lifted for inspection of eggs or young! They were totally nonplussed by such inspections.

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