# The Crowned Pigeons

*(Goura cristata, Goura scheepmakeri, Goura victoria)*


*by Dave Wetzel*
*Curator of Birds*
*Kansas City Zoological Gardens*


Found on the island of New Guinea (in both Papua New Guinea and Irian Jaya) and a few small adjoining islands, the three species of Crowned Pigeons of the genus *Goura* are the largest members of the pigeon family. These magnificent birds are popular both as zoo exhibits and in private breeding facilities.

Taxonomists have long debated the status of these birds. Currently, three distinct species are recognized. Recent DNA mapping (Bohmke & Patton 1987) seems to support this. The apparently extinct *Microgoura meeki* of the Solomon Island chain may have been their closest relative. *Trugon terrestris* may be their closest living relative with *M. meeki* having been the link between the two living genera.

Crowned Pigeons are currently on Appendix II of the CITES convention. Individuals in Rotterdam are developing a petition to have these birds placed on Appendix I, further restricting trade in wild-caught birds (Nijboer, 1991). The reasoning for this is clear. Little data currently exists on their status in the wild. What little is known is that they have been locally extirpated wherever man has established settlements (Collar & Andrew 1988; Coates 1985; Beehler 1985; Bell, 1982, 1970, 1969; Pearson 1974). Despite laws prohibiting the taking of these birds by shotgun or nets, shooting and collecting continue. While there is little trade in wild-caught birds within the U.S., there appears to be a significant trade in eastern Europe and southeast Asia. Reportedly one dealer based in Singapore took some 900 *G. cristata* from waterholes in Irian Jaya in 1987 (Nijboer 1991). This same dealer was holding approximately 300 individuals at two locations in southeast Asia in 1990 (King 1991).

Crowned Pigeons have been maintained and bred in captivity since the late 1800's. These birds do well on a variety of diets, we feed Purina Pigeon Chow Checkers with supplements of fruit and monkey biscuits. Our pair often takes Purina Monkey Chow and soaks the biscuits until they are soft enough to eat.

These birds readily hybridize with each other and the resulting offspring appear to be fertile. Wild hybrids between *G. cristata* and *G. victoria* have been reported in the Siriwio River area. Some hybrids are still produced in captivity in the U.S. and England. As there is little if anything to be gained by such hybridizations, it is hoped that this practice will not continue.

In zoos, most of these birds are displayed as single pairs in large, mixed species, walk-through aviaries. Here for the most part they are benign inhabitants peacefully coexisting with other ground dwelling species. Occasionally a pair or an individual will attack and may kill other birds. Pairs have also, on occasion, attacked visitors. In the wild, these birds are normally encountered in small parties with larger congregations occurring at waterholes and feeding areas.

The nest in the wild has been reported as proportionately larger and more compact than other pigeons (Goodwin 1983). In captivity, it is often flimsy and may consist of just a few twigs. These birds will often utilize an artificial nest structure. A single white egg is laid by all three species and both birds incubate. Hatching occurs in 28 to 29 days. The altricial chick is fed "pigeon's milk" and remains in the nest for approximately 30 days. As the chick grows, the adults add increasing amounts of grain and fruit to the "pigeon's milk". The adults may continue to care for the chick for several

weeks after it leaves the nest. Egg laying, at least in captivity, may occur at any time of the year and the pair may recycle within 12 days of losing an egg.

One perplexing problem with these birds is their propensity to lose eggs. Pairs will often hatch two or three eggs in a row and then go for a year or more laying numerous eggs without hatching another. Eggs are either infertile or the pair abandons them at some stage of development. In the mixed species environment of most zoos, an abandoned egg rarely lasts long. This problem has been reported by numerous institutions as well as by individuals. Currently there is no obvious common factor which can account for this behavior. If the egg hatches, the pair usually rears the chick. Only rarely has it been reported that a pair has deserted a chick.

Hand-rearing has been accomplished by a number of institutions and individual breeders. Many of these chicks are smaller than those reared by the adults and as yet only a few have successfully reproduced. The diets used for hand-rearing vary. One institution tube fed their bird on monkey chow. The chick we most recently reared in Kansas City was fed on soaked pigeon pellets and finely diced fruit. Others have fed diets which have included baby cereals, yogurt, peanut butter, Isomil and Esbilac. The leading cause of death in hand-reared chicks has been bacterial infections. The second most prevelant cause of mortality is mechanical injury during feeding.

***Goura cristata*** (Pallas 1764)

The Common or Blue Crowned Pigeon is currently the most abundant species in captivity. The most recent N.A. regional studbook lists 39.30.8 (male.female.unknown) in 32 participating facilities (Wetzel 1991). The European Regional studbook lists 24.24.24 in 24 facilities (Nijboer 1991).

Adults of this species range from 60 to 70 cm in length. Overall body coloration is shades of blue grey. Back and most upper wing coverts maroon. Tail tipped with lighter grey-blue. Wing speculum white. Iris and legs are red. Two subspecies are currently recognized based largely on size, identification to this level may only be accurately accomplished if the location of capture of the bird or its parents is know.

These birds are found in lowland forests, both wet and dry, from sea level to elevations up to 110 meters.

*Goura cristata cristata* (Pallas) is found in northwestern New Guinea east in south to Etna Bay and east in north to the Siriwo River. This subspecies is slightly larger than the following (Rand 1967).

*Goura cristata minor* (Schlegel) is found on the western Papuan Islands of Misol, Salawati, Batanta and Waigeu (Rand 1967).

***Goura scheepmakeri***
(Finsch 1876)

Scheepmaker's Crowned Pigeon has the smallest population in captivity. The N.A. studbook records only 4.8.1 in 6 institutions most being descended from one pair (Wetzel 1991). The European population is only slightly larger with 12.9.2 in nine institutions (Nijboer 1991).

The largest of the Crowned Pigeons these birds range from 70 to 77 cm in length. As with the preceding species, two subspecies are currently recognized. These are easily recognizable due to their substantial color differences.

Found mainly in lowland forests but locally to 500 meters.

*Goura scheepmakeri scheepma-*

*keri* (Finsch) southeastern New Guinea from Hall Sound to Orangerie Bay (Rand 1967). Ventral sides of neck, upper breast and upper wing coverts maroon. Wing speculum ivory-white. Remaining body grey-blue. Tail tipped in lighter blue-grey. Iris and legs of both are red. Crest long and lacy.

*Goura sheepmakeri sclateri* (Salvadori) southern New Guinea from Mimika to Fly River (Rand 1967). Similar to above, no maroon on wings and maroon extends further down on breast. Wing speculum pale grey.

***Goura victoria*** (Fraser 1844)

This is the second most common species to be exhibited and arguably the loveliest. In the N.A. studbook, 34.30.7 are registered in 27 institutions (Wetzel 1991) while in Europe 29.28.13 are recorded from 22 institutions (Nijboer 199l). Adults similar in size to *G. cristata.*

Crest feathers are tipped in white. Ventral portion of neck and breast maroon. Wing speculum grey-blue. Tail tipped with grey-blue. Body overall blue-grey in color. Iris and legs red. As with the preceding species, two subspecies are recognized. Wing speculum and tail light grey-blue. Like *G. cristata* these are based predominately on size and identification is difficult at best.

Inhabits wet and dry lowland forest but locally reaches elevations up to 600 meters.

*Goura victoria victoria* (Fraser) islands of Geelvink Bay (Japen and Biak (Introduced?)) (Rand 1967).

*Goura victoria beccarii* (Salvadori) north New Guinea between head of Geelvink Bay (at Siriwo River) and Astrolabe Bay, also southeastern New Guinea in Collingwood Bay region (between Holnicote Bay and Mt. Maneao) (Rand 1967).

### Experiences at the Kansas City Zoo

The Kansas City Zoo currently maintains a single pair of Victoria Crowned Pigeons which are housed in a tropical free flight aviary with 40 additional species of birds. The male was hatched here in 1978 while the female hatched at the Rio Grande Zoo in 1985.

This hen has laid 26 eggs in a four year period. Of these, five have hatched with four chicks being reared. Most of the eggs were found broken and fertility could not be

Photo by Dave Wetzel

*Victoria Crowned Pigeon; hand-rearing technique for chick approximately one week old.*

Photo by Dave Wetzel

*Victoria Crowned Pigeon three weeks old (being hand reared)*

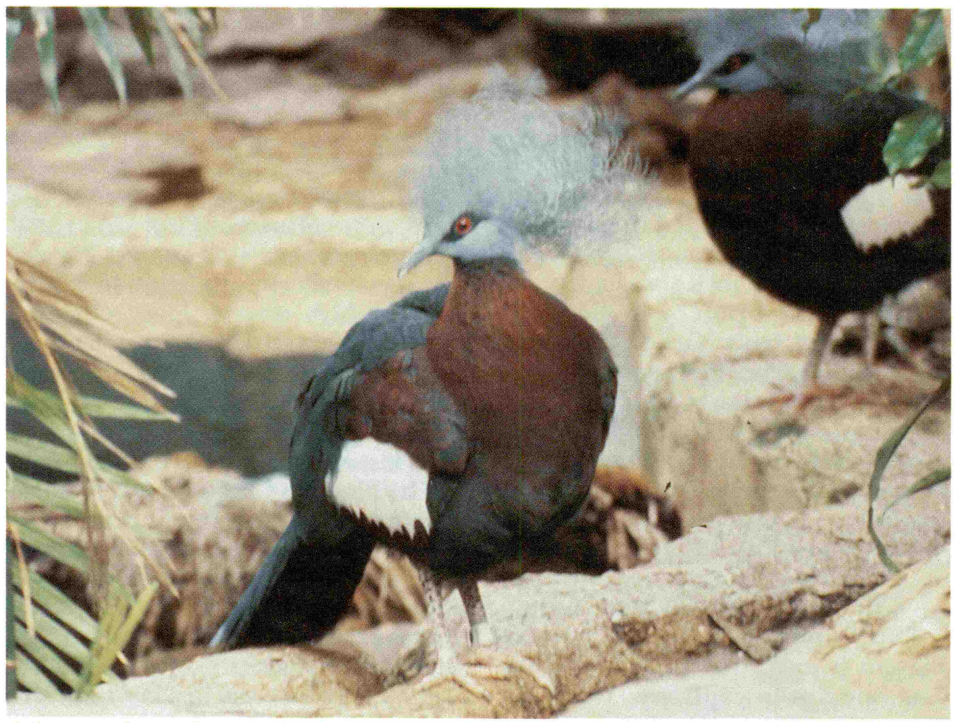

Photo by Herb Roberts

*Scheepmaker's Crowned Pigeon (G.s. sclateri) — Memphis Zoological Garden and Aquarium*

determined. One chick was hand-reared in 1990 after the adults had abandoned seven previous eggs. Chicks were hatched and successfully parent reared in 1988, 1989 and 1991.

The male normally selects the nest site, either a basket located on a horizontal branch approximately 10 feet above ground or on a wire ledge approximately 8 feet above the ground. After selecting the site, the male gives his booming call until the hen joins him. He will then leave the nest site and return shortly with a branch or dracena leaf. Presenting this to the hen, he goes in search of more nesting material allowing her to arrange it in the nest. After the nest site has been selected and nest-building is underway, either bird may bring nesting material to the other. Nest building may last for several weeks or take only a few days.

After laying, the pair takes turns incubating the egg. Each nesting has

Photo by Dave Wetzel

*Blue Crowned Pigeon — Topeka Zoological Park*

Photo by Dave Wetzel

*Victoria Crowned Pigeon — Kansas City Zoological Gardens*

shown a different nest relief pattern. Both birds do seem to share equally in the incubation process. Both birds begin booming loudly if relief is late in coming. Often the relief bird brings a new piece of nesting material and presents it to the sitting bird before switching off. The non-sitting bird normally stays well away from the nest site.

The naked chick is closely brooded for the first several days. We usually are first aware of the successful hatch when we observe feeding behavior. As the chick developes, it often sits with its head out from under the breast of the brooding adult. The chick grows rapidly and in 28 to 33 days leaves the nest. Once the chick leaves the nest, the adults continue to care and feed it for up to 30 days. The chicks begin picking at food items shortly after leaving the nest.

Once the chick is on the ground, the adults usually remain close by. Each of the chicks here have shown a great deal of variation in their development. Some are relatively bold and confiding while the most recent chick clearly avoids the staff. Chicks are normally removed from the exhibit within 30 days of leaving the nest.

On four occasions we have hand-reared chicks. Three of these have been successful. We have used three separate diets (refer to table 2), and have been ''successful''with all three. Our hand-reared chicks have not grown as rapidly as those parent reared and should we attempt hand-rearing again we will alter the diet to increase growth rate.

The first attempt occurred in 1984. At this time we utilized a diet based on information obtained by Mr. Bruce Bohmke (our Curator of Birds at the time), from the Riverbanks Zoo and Mr. John Moore. We encountered several problems with curdling in the crop and switched from Esbilac to a soy-based milk substitute, Isomil, on subsequent trys. during our most recent attempt we fed freshly soaked Purina Pigeon Chow Checkers and chopped fruit. Initially each chick gained weight very slowly (see graph 1) and only after the 2nd week did growth rate begin to pick up. Each chick also first feathered out in a very dark plumage rather than the blue-grey color of parent reared birds.

The technique we use for feeding the chicks consists of gently inserting the bill into a baby bottle nipple and allowing the chick to suck the food up out of the nipple. As the baby grows, we place the food into a larger receptacle. Our first chick took nearly four months to begin eating on its own; while our second took about three and the last chick two. Recently I was notified that the second bird we hand-reared had hatched an egg and was rearing a chick so hopefully these birds will be able to reproduce normally.

I have published a regional studbook for the North American population including Canada, Mexico and the United States for the past five years. Joeke Nijboer of the Royal Rotterdam Zoo maintains a European regional studbook and is the EEP coordinator for this genus. Recently I was approved to develop an international studbook for these birds. In addition to the North American and European populations, Crowned Pigeons are housed at numerous institutions throughout the world. Reportedly over 200 Crowned Pigeons, mainly *G. cristata,* were held in ten institutions in South East Asia (Yaacob 1990; King 1991).

While the North American studbook accurately reflects the numbers of birds held in zoos, only a few private breeders are currently participating. There is evidence that the numbers of *G. cristata* and *G. victoria* in North America are at least half again as large as those reported in the studbook, while only a few *G. scheepmakeri* are not recorded. If you would like to register your birds, please contact me at the Kansas City Zoo, 6700 Zoo Drive, Kansas City, Missouri 64132.

The Crowned Pigeons, like all popular aviary birds, must be managed properly if we are to assure their continued existence in our collections. As can be seen in table 1, this past year all three species showed a net gain, however small, in population. In the case of *G. cristata*, this slight gain was the result of bringing five adult birds into the registered population. Four of these were acquired from a foreign source and potentially represent new blood lines.

Both *G. cristata* and *G. victoria* have a good genetic base to work from. Through proper management, both species could have stable populations in a short time. *G. scheepmakeri*, in sharp contrast, is genetically un-sound. Currently there are only two reproductive pairs recorded in the N.A. population with seven of the remaining birds being descended from them. The two males of these pairs are siblings. Two birds of unknown origin have yet to reproduce. If this species is to be maintained in North American facilities, we will need to obtain new blood lines.

The Crowned Pigeons are one of the most striking members of the pigeon family. Their large size, coloration and demeanor combine to make them prized inhabitants of our collections. These same attributes, along with their desirability as a food source and continued habitat alteration in their native land will continue to cause the wild population to decline. Many individuals and institutions have bred these birds, and now must work together to assure their long term survival in captivity.

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