

Vini Lories and Breeding the Blue-crowned Lory (*Vini australis*)

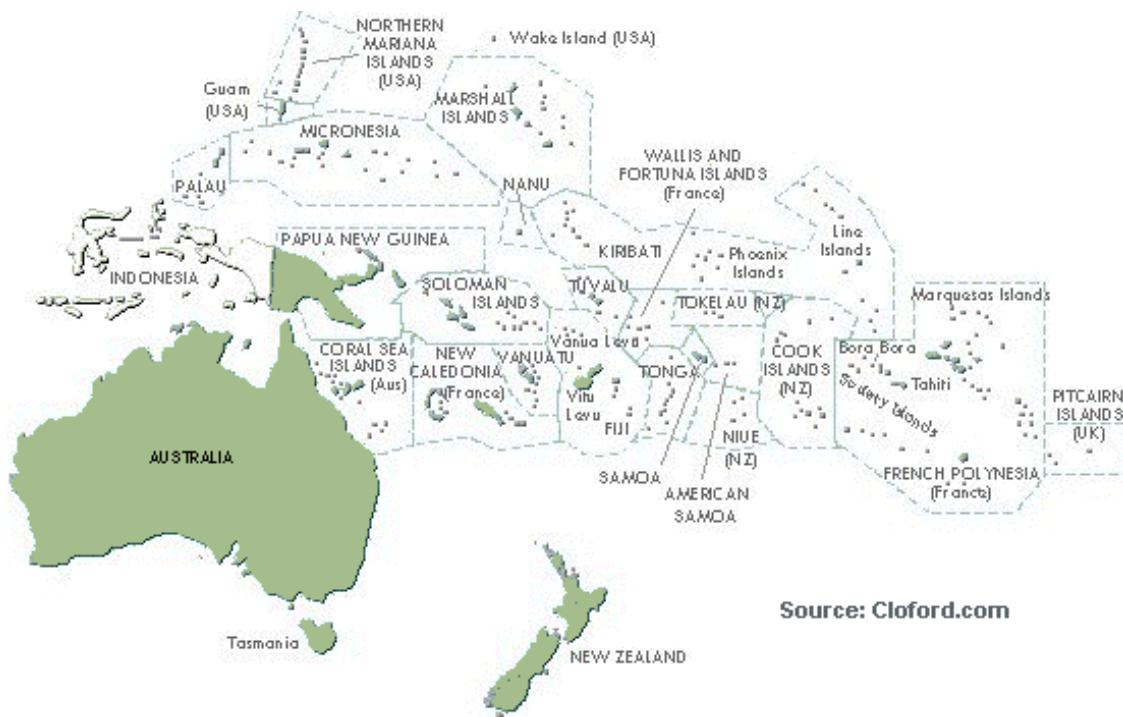
Matt Schmit, Houston Zoo Inc, Houston, Texas USA

Author's note: I have adopted the same taxonomy used by Rosemary Low in *Hancock House Encyclopedia of the Lories*, in which she does not recognize the genus *Phigys*, but instead includes the Collared Lory into the genus *Vini*.

Lories and lorikeets are a group of highly colorful parrots native to the islands of the South Pacific, including Indonesia, New Guinea and Australia. There are 53 species of lories belonging to 10 genera. Roughly twenty of the 53 species of lories exist in the United States in any real numbers. The majority of the twenty species and associated subspecies are fairly common and are well represented in the aviculture community. However some species, like those belonging to the *Vini* genus, are rarely seen outside zoo collections.

The introduction of rats onto the islands of the South Pacific has been the major cause of their decline and extinctions. Their remote ranges and habitats, coupled with the protection from their native governments have kept them, with a few exceptions, from American aviculture. The genus *Vini* contains six living and two extinct species.

In the following paper, I will introduce the six extant species that make up the *Vini* genus, including a discussion of the natural history and status in aviculture of each species. A greater emphasis will be placed on the husbandry and breeding of the Blue-crowned Lory (*Vini australis*), as it is the only species of *Vini* that is becoming readily available to zoos and private aviculturists throughout the U.S.



Source: Cloford.com

Collared Lory (*Vini solitarius*)

Found in the forested areas and plantations of the Fiji Islands, the Collared Lory is common in the wild and fairly abundant throughout most of its range. It is listed on CITES II and is considered a BirdLife International "restricted-range" species, which means that, while the species is abundant in numbers, the range of the species is limited and could be easily threatened.

The Collared Lory is a highly colorful bird with a purple crown that ends at bright green elongated nape feathers. The rest of the head, upper back and breast are bright red and the wings and tail are green. Its beak and feet are orange. It is slightly larger than the other extant *Vini* species, measuring 8 inches (19-20cm) and weighing 72-85 grams, with the males being heavier than the females.

In the wild, the Collared Lory feeds mainly on the blossoms of coconut palms and *Erythrina indica*, and occasionally on the fruits of cultivated plants such as mangos.

The Collared Lory is quite rare in the U.S. due to the protection they receive from their native countries. Exportation has rarely been allowed. In 1991, the San Diego Zoo (SDZ) and the Assiniboine Park Zoo in Winnipeg, Canada were granted permission from the governments of Fiji to collect 10 Collared Lories and export them to North America. As of 2002, all but two of the imported Collared Lories had produced chicks, with a total of 73 hatches (53 first generation and 20 second generation).

Kuhl's Lory (*Vini kuhlii*)

The Kuhl's Lory was once widespread in the southern Cook Islands, but now only inhabits Rimatara. A few introduced populations also inhabit the Kiritimati, Tabuaeran and Teraina Islands. The Kuhl's Lory seems to prefer the mixed horticultural areas on Rimatara. On Tabuaeran and Teraina, no native forests exist, and the birds are confined primarily to coconut plantations. On Kiritimati, the conditions are far from favorable for long term establishment, and only a few birds have survived from several small releases. It is listed on CITES II and is considered a BirdLife International "restricted-range" species.

Like all species of this genus, The Kuhl's Lory is very colorful. It is mostly green and red. The head, back and tail coverts are green, the nape is bright blue. Its crown feathers are elongated and extend past the nape. The face, neck, breast and belly are bright red. The tail is multicolored with green, purple and red markings. Its beak and feet are orange. The Kuhl's Lory measures 7 ½ inches (19 cm) and weighs around 55 grams.

The Kuhl's Lory has been known to feed on many plants, including coconuts, several species of hibiscus, *Casuarina* seeds and coffee plants.

The Kuhl's Lory is extremely rare in captivity with only a single male bird known to exist outside the South Pacific.

Stephen's Lory (*Vini stepheni*)

Found in the native forests of Henderson Island, the current population of Stephen's Lories is secure but considered vulnerable. Like the rest of the genus, it is a Birdlife International "restricted-range" species.

The Stephen's Lory is very similar to the Kuhl's in appearance but lacks the blue on the nape and has a wide band of green across the chest.

Stephen's Lories feed on a wide range of food items including nectar, pollen, insect larvae and fruit.

There are no known specimens of Stephen's Lories in captivity.

Tahiti Blue Lory (*Vini peruviana*)

Once common on more than twenty islands in the South Pacific, the Tahiti Blue Lory is now extinct throughout most of its range. The Tahiti Blue Lory is generally found near coconut palms and banana plantations near or on the coast. However, it will also inhabit any wooded areas that contain native and cultivated trees. It is listed on CITES II and considered a Birdlife International "restricted-range" species.

Hence the name, the Tahiti Blue Lory is almost entirely deep blue, appearing black in certain light. The face, throat and upper breast is white. The beak and feet are orange. The smallest of the *Vini* genus, the Tahiti Blue Lory measures 6 inches (15 cm) and weighs 30 to 35 grams.

The Tahiti Blue Lory feeds on the flowers, nectar and pollen of coconuts, banana, hibiscus and mango. The fruits of banana and the leaf shoots of mango are occasionally eaten as well.

This species is very rare in captivity and has only been kept in a few collections. A breeding program for the Tahiti Blue Lory began at the San Diego Zoo when in 1978 nine (4.4.1) confiscated wild caught birds were received from US customs. From 1978 to 1991, the SDZ saw 69 hatches; however, by 1991 only eight (5.3) birds were still alive. The five males, all hatched at SDZ, ranged in age from 11 to 14 years old. The three remaining females, one wild caught and two SDZ

hatches, were 14, 9 and 6 years old respectively. Also in 1991, the French Polynesian Ministry of the Environment donated six (1.5) Tahiti Blue Lories to the SDZ, making the total population of this species in the United States fourteen (6.8).

Unfortunately, over the next eight years, the SDZ did not experience the same success in breeding the Tahiti Blue Lory that it had before. Between 1991 and 1999, only seven hatches took place, with only four chicks surviving. In 1999, the population now stood at ten birds (2.8) ranging in age from 2 to 20 years old. In the year 2000, a five year old pair hatched one chick, which died soon afterwards. In 2001, another pair (21 year old male and 8 year old female) produced four eggs, which all proved to be infertile. The 21 year old male died later that year. Currently, there are only seven (1.6) birds remaining in the SDZ population. Because of the difficulties in breeding the Tahiti Blue Lory, the future of this species in the U.S. does not look promising.

Ultramarine Lory (*Vini ultramarina*)

Historically, the Ultramarine Lory occurred throughout the Marquesas Islands. It now only occurs on one island in its original range, the island of Ua Huka. There is a small population of introduced birds on the island of Fatu Hiva. The Ultramarine Lory can be found in any area where flowering trees occur, from native forests in the hills to coconut plantations near the coast. Listed on CITES I, it is considered highly endangered (only one other lory species has been listed on CITES I).

The Ultramarine Lory is a very interestingly colored bird. Its forehead is cobalt blue, turning to a purple-blue at the crown, with cobalt blue again at the nape. The remainder of the body is a pale turquoise blue, mottled with white and purple. The belly is purple and has extensive white flank patches. The beak and legs are both orange. It measures 7 ½ inches (18-19 cm) and is assumed to weigh roughly 40 grams.

The Ultramarine Lory feeds almost exclusively on nectar and pollen and insects, occasionally eating breadfruit (*Artocarpus altilis*) and mango.

It is extremely rare in captivity, as there are no known specimens outside its natural range except for a single bird in France. Currently, there is a program underway to safeguard the remaining populations of Ultramarine Lories as well as Stephen's and Kuhl's Lories. Its hope is that translocation of these species to rat-free islands will help with the survival of these birds. In 1991, the beginning of The Polynesian Lory Project was started. An expedition, funded by the Zoological Society of San Diego and the Environmental Delegation, French Polynesia, with additional biological staff from the Peregrine Fund, Inc. and the San Diego Natural History Museum set off to the Marquesas. At that time, 312 birds were counted. All the known birds were restricted to one island, Ua Huka.

After reviewing the results of the survey, an experimental translocation was planned. Between 1992 and 1994, 29 birds were translocated from Ua Huka to Fatu Hiva (7 birds in 1992, 7 in 1993 and 15 in 1994). In 1997 a survey of Fatu Hiva took place, in which 51 Ultramarine Lorries were counted, 10 of which were in sub adult plumage and one fledgling that was seen being fed by its parents. Obviously, the original translocated flock had grown and was nearly double the original number of released birds. It can only be presumed that the population was even larger since the field survey could only cover a very small portion of the island. Currently, Ua Huka is still rat-free and the population on that island seems to be doing well. Pest control measures are being taken to prevent rats from being introduced to the island. Unfortunately, rats have been recently introduced onto Fatu Hiva, but rat control measures are now in place to hopefully control and eliminate the rat population.

Blue-crowned Lory (*Vini australis*)

Found over a comparatively large geographic range, the Blue-crowned Lory inhabits any area where flowering trees can be found in Fiji, Samoa, Tonga and one of the Cook Islands, Niue. It is still fairly common throughout its range, but has gone extinct on several islands and is declining in Tonga (most likely due to rats). The Blue-crowned is listed on CITES II and is a Birdlife International "restricted-range species."

It is primarily a green bird with blue and red marking on the face and belly. The beak and feet are both orange. It measures 7 ½ inches (19 cm) and weighs 40 to 55 grams.

The feeding habits of the Blue-crowned Lory are the most diverse of the *Vini* genus. They feed on a wide variety of food items, such as nectar, pollen and soft fruit of coconut palms, thatching palms, mango, *Erythrina*, *Elaeocarpus angustifolius*, *Calophyllum inophyllum* and *Casuarina*.

Like the other *Vini* lorries, the Blue-crowned is still fairly rare in aviculture. In 1970 a group of five Blue-crowned Lorries were exhibited for the first time at SDZ. Eight chicks were hatched from one pair between 1973 and 1979. In 1991, SDZ and the Assiniboine Park Zoo in Winnipeg, Canada were granted permission from the Kingdom of Tonga to collect 8 (4.4) Blue-crowned Lorries and export them to North America. Two pair went to the Assiniboine Park Zoo and the remaining two went to the SDZ. As of 2002, 140 chicks have been raised at the SDZ, representing the original 8 wild-caught birds. Fifty-four of these are first generation and the remaining 86 are second generation. Over the years, the SDZ has transferred 79 offspring out of the collection and placed them with other zoos and private aviculturists in the US, Britain, Germany, South Africa and Fiji.

Blue-crowned Lories are far from picky about their enclosures and most pairs will breed in any reasonably sized cage or aviary. Originally, the two pairs at SDZ were housed in enclosures measuring roughly 11 feet x 4 feet x 7 feet high (3.7m x 1.2m x 2.4). Since then, birds have successfully bred in enclosures with a variety of size and styles ranging from small suspended cages to large planted exhibits. In Houston, we have successfully bred the Blue-crowned Lory on many occasions on public display, in a well planted glass fronted exhibit in our Tropical Bird House, which is heavily trafficked during most of the year.

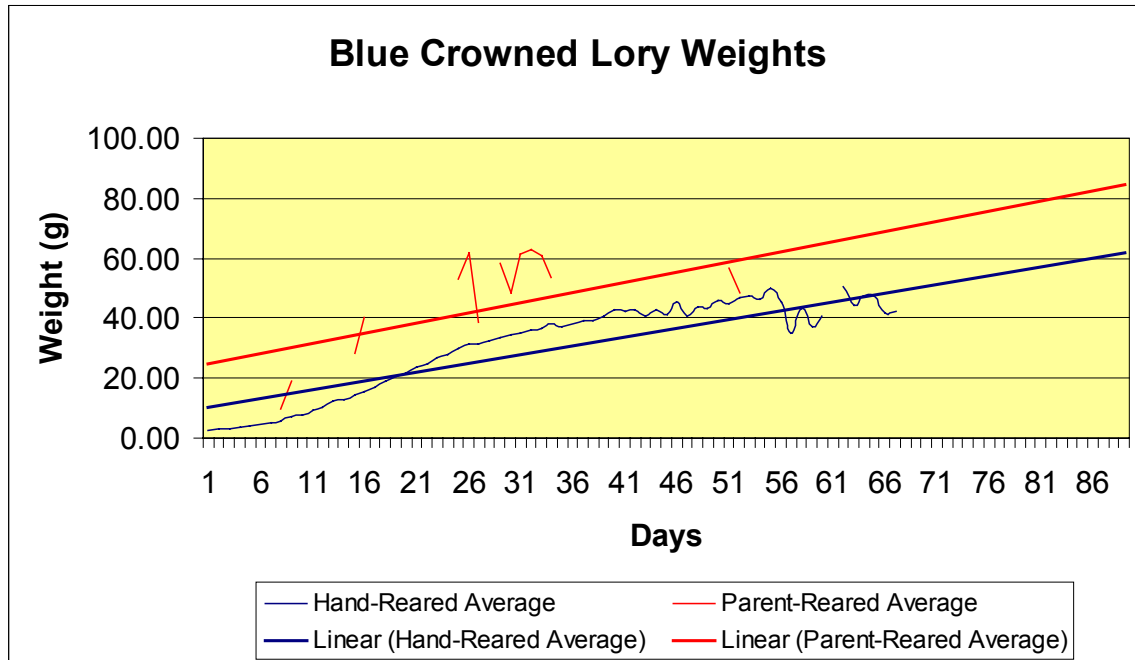
The diet that is offered to the Blue-crowned Lories varies from collection to collection. However, the basis of all successful Blue-crowned diets is a commercial lory nectar and fruit. In Houston, we feed a bowl of nectar along with a bowl of chopped produce twice daily. Additionally, large chunks of favored fruit, romaine lettuce and mealworms (*Tenebrio molitor*) are given for environmental enrichment. SDZ and several leading private aviculturists feed their Blue-crowned Lories nectar, a dry lory powder and fruit mixed with pellets.

As with the enclosures, Blue-crowned Lories are not finicky when it comes to nesting sites. They will utilize almost any suitable nest site, from small lovebird boxes to "L" shaped boxes to staghorn ferns (*Platycerium spp*) and palm logs, which they excavate themselves. Our pair has successfully parent-reared and fledged several chicks in a small lovebird box. Shavings or similar material is used for the nest substrate and is changed frequently during the time when chicks are in the nest.

Unlike the experiences with the Tahiti Blue Lory, establishing compatible breeding pairs of Blue-crowned Lories has been fairly easy. Courtship is similar to that of other lory species, which consists of head bobs, fluffing feathers and swaying from side to side. Copulation follows soon afterwards. Two eggs are laid at 2-3 day intervals. Although both sexes spend a considerable amount of time in the nest box, it is presumed that the female does the majority of the incubation during the 23-26 day incubation period (artificial incubation lasts 25 days). Chicks hatch with long white down feathers sparsely covering their body. Later, these are replaced with shorter grey down feathers. The eyes begin to open at 8 days and pin feathers emerge close to three weeks after hatching. Fledging dates have varied from collection to collection. Chicks from SDZ have generally fledged from 56 to 66 days. Houston chicks have fledged as early as 49 days.

Although many Blue-crowned lory chicks have been parent-reared, some have been hand-reared and cross-fostered under Goldie's Lorikeets (*Trichoglossus goldiei*) as well. Both hand-reared and cross-fostered Blue-crowned Lories have grown up to successfully breed and raise their own offspring. It is interesting to note that, while there is little difference between parent-reared and hand-reared birds at the age of maturity, there have been several differences noted during development. Most significant is the difference in chick weights between parent-

reared and hand-reared chicks. A comparison of the average weights between 4 hand-reared chicks and 6 parent-reared chicks from hatching to independence shows that on average, parent-reared chicks are heavier and maintain that difference through weaning.



Additionally, hand-reared chicks tend to wean at a much earlier age than their parent-reared counterparts. The average age of hand-reared chicks at weaning is 30.3 days, while the average age for a parent-reared chick is 64.3 days, 10 to 14 days after fledging.

Soon after the chicks fledge, the parents can become highly aggressive toward their offspring. This is usually the case when the adults want to begin nesting again. For their small size, Blue-crowned Lorries can be very aggressive and great care must be taken when allowing the chicks to remain with the parents after independence. Our pair routinely shows aggression to their offspring 20-21 day following fledging. It is also important to note that, while some species of lorries have been successfully bred in mixed species exhibits, such as Goldie's and Meyer's Lorikeets (*Trichoglossus flavoviridis meyeri*), a breeding pair of Blue-crowned Lorries is not to be trusted with other species of birds. We have had the unfortunate experience of our pair brutally killing a pair of much larger Green-winged Doves (*Chalcophaps indica*). While breeding adults should not be kept with other bird species, we have been able to successfully keep non-breeding youngsters in our large walk-through mixed species rainforest exhibit.

As shown in the preceding paragraphs, the *Vini* Lorries are not as readily available as the other species of Lorries. Since most aviculturists have never

seen *Vini* lorries, let alone had the opportunity to work with these birds, they are perhaps the least known of the lory species. Since many of the *Vini* species are in danger of extinction, the establishment of a healthy captive population of the available species in aviculture is very important to the long term management of those species.

References

Collar, N.J. (1997). Family Psittacidae (Parrots). Pp. 280-477 in: del Hoyo, J., Elliot, A. & Sargatal, J. eds. (1997). *Handbook of the Birds of the World. Vol 4. Sandgrouse to Cuckoos*. Lynx Edicions: Barcelona

Lewins, R (2002). *San Diego Zoo Lory Collection* PowerPoint presentation.

Low, R. (1998). *Hancock House Encyclopedia of the Lorries*. Hancock House: Blaine, WA

Rimlinger, D. & Lewins, R. (2002). A breeding history of the Collared lorikeet and Blue-crowned Lorikeet, *Phygis solitarius* and *Vini australis*, at San Diego Zoo and Assiniboine Park Zoo, Winnepeg, *International Zoo Yearbook* 37:58-61.