Understanding Lories & Lorikeets

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Introduction

During the last few years, lories and lorikeets have experienced a well deserved increase in popularity among aviculturists. With their clown-like behavior and their brilliant colors, they are truly a feast for the eyes and excellent subjects for aviaries and (for some species) for large cages. In the past, fanciers regarded these birds with perhaps less enthusiasm than they might, due to their specialized diet and the fact that their droppings are watery and messy, which meant that cages had to be thoroughly cleaned on a daily basis. There is thus little positive information about them in the literature. As I have personally had opportunities to study these birds in their natural habitats as well as having had much experience with captive specimens, I hope, with this text, to modestly offer some facts which will lead to a better general understanding of these beautiful and extremely interesting psittacines.

Geographical Notes

The "heart" of "lory country" is Australasia, but especially New Guinea and its rich collection of tiny eastern islands which include the last "lory stongholds" of Henderson Island and the little Pitcairn Ducie Islands, where in 1907, the Stephen's Lory *(Vini stephensi)* was discovered. This bird is now rarely if ever seen in captivity though I once viewed a specimen owned by a Belgian fancier. I am not aware of any American or Canadian specimens. Travelling westwards from New Guinea, we come to the many islands of Indonesia all populated with lories as far as Bali and Lombok where the Mitchell's Lorikeet *(Trichoglossus haematodus mitchelli)* is found. This is a splendid bird with a light red breast which appears irregularly on the market.

Some of the lory species from the aforementioned areas (Henderson Island to Bali) have a surprisingly large range and several occur on two or more islands. The climate and availability of food may have some bearing on the distribution of various subspecies. In some genera there are subspecies that we can cautiously say are questionable. The well known German ornithologist, Dr. H.E. Wolters would recognize 56 species, though I would be doubtful about three of these; another one, the New Caledonian Lorikeet *(Hypocharmosyna diadema),* is probably extinct. Of the 134 subspecies recognized by Dr. Wolters, there are at least 15 which can be regarded as synonyms of the nominate forms or at least with doubtful status. Personally, I do not believe it is necessary to give subspecies status on account of small color differences; all lories and lorikeets (with a few exceptions) possess a varied color pattern which could easily lead to mistaken classifications. I am of the opinion that further studies based on morphological rather than color characteristics are necessary before we can make any hard and fast ornithological decisions regarding the classifications of this group of species. As we are here mainly concerned with the care and breeding of the avialable species, we will omit further taxonomical discussion.

Nutrition

The main diet of lories and lorikeets is the nectar of flowering trees, but much pollen also is devoured as well as sweet, soft fruits and berries; sometimes the soft, unripe seeds of grass

and other plants are also eaten. Insects and their larvae are eagerly taken at all times, but especially during the breeding season. All lories and lorikeets I have ever kept have been crazy about maggots, mealworms (which for safety's sake are first soaked for a few minutes in boiling water) and ant pupae. Flocks of wild lories can be a pest in orchards where they will damage much unripe fruit in search of their sweet and ripe favorites. In Indonesia I have seen apple and pear harvests totally destroyed by hundreds of these birds. I have also seen corn, sorghum, and wheat crops severely damaged by the birds. The local people try to keep the birds away with empty food cans suspended on strings so that they bang together in the breeze and create a frightful noise; if this doesn't work then, unfortunately, the guns come out!

In view of their preferred diet, and due to the fact that lories and lorikeets nest high up in hollow limbs and trunks of mainly eucalyptus trees, it seems fairly obvious that most of the birds inhabit fairly thickly wooded areas, even high into montane forest. Some species are quite nomadic and follow the flowering of the food trees; some of them frequently cover fair distances from island to island. Indeed, most lories and lorikeets are very adept fliers, recognized by their straight and fast flight. Many of them travel around in fairly large flocks so that they are protected against hawks and other predators which seem to prefer single birds as prey. Once, in the Celebes, I observed a flock of Ornate Lorikeets *(Trichoglossus ornatus)*. Suddenly a few birds, obviously in fear, separated from the main flock as they were pursued by a hawk. The hawk flew between the main flock and the separated birds and, with a swoop, took the most isolated bird in its talons before making off.

Lories are very cautious and will fly quickly, and with shrilling consistency over open tracts of land, becoming calmer when back among the trees but always remaining alert. Should a flock of lorikeets be pursued by a bird of prey —which does not happen very often — the birds will attempt to remain grouped and will make for the nearest stand of trees and seek refuge among the foliage. Few birds of prey will pursue their victims among foliage. Do not imagine that once the birds have taken refuge, they will sit still and remain silent. They will soon return to their lively, clown-like and quarrelsome foraging among the foliage in search of food as if nothing had happened, especially if they had been lucky enough to land amidst blossoming trees! It is indeed a wonderful sight to experience a flock of lories foraging among their food trees. Sometimes they are in company with several other nectar and pollen eating bird species; in general they tolerate each other and interspecific aggression is rarely observed.

If individual flocks should come together, one will really experience how lively and vocal these birds are; they never forgo their lively behavior, even in a roomy aviary.

Lories and lorikeets use all manner of actions to reach their food; twisting, squirming and hanging, often suspended by one foot in order to reach an elusive bloom. It is interesting to observe that a particular group of lor-

ies will accept a lost or stray member of their own species without problems but, in times of food shortages, they may attempt to drive off other species, though they do not always get the upper hand. In this connection, it is paradoxical that excited lories at a food source will actually attract other blossom feeding species with their constant chatter and thus have to share. Other groups of lories may also be attracted and, in such cases, there is seldom protest and the birds will feed together in harmony.

When a flock of lories or lorikeets discovers a suitable flowering tree, the birds first land in the upper foliage and look carefully around to ensure the coast is clear. If all is well, they then begin to forage. A second group of lories landing in the same tree will behave in exactly the same wary manner, even if the first group is already busy foraging. Should there be a sudden disturbance, the whole (or both) flock(s) will rise "as one man" and fly screechingly away. Should it be a false alarm, the birds will soon return to the tree and forage again, after making a couple of cautionary circuits around the area. If real danger should threaten then the flock will fly off to a more thickly wooded area where it will feel safer.

Of course, there are also dangers during the breeding period and, should danger threaten, the whole group will leave the nesting tree and return only when the coast is clear. The incubating or brooding hens return first to their nests. When there is no immediate danger the breeding cocks will feed the incubating hens three or four times a day. Even when there are young in the nest he will keep up a similar pattern, once in the morning, twice during the day and once more towards evening, feeding both his mate and the young.

Photos by Dale R. Thompson and George D. Dodge

Three young fledglings, at left—Edward's Lory (Trichoglossus haematodus capistratus), center and right—Blue Mountain (or Swainson's) Lory (Trichoglossus haematodus moluccanus).

Youngsters not yet in full adult plumage help themselves to a nutritious nectar drink. L to R: Rainbow Lory, Ornate Lory, Yellow-backed Chattering Lory, Black-capped Lory.

Tame lories enjoy a fresh fruit snack. Left—Red Lory (Eos bornea), right—Yellow Dusky Lory (Pseudeos fuscata).

Breeding Behavior

Wild lories and lorikeets breed in the hollow limbs and trunks of trees. The entrance hole may be enlarged and the interior of the nest is usually intensively modified by gnawing with the strong psittacine beak. This results in a soft layer of wood pulp in the base of the hollow, which is often supplemented by the birds with a few eucalyptus leaves to make a bed for the eggs. A few species, but especially

those in the genus *Vini,* may occasionally use the hollowed out interior of a rotten coconut in which to raise their offspring. With most species the hen lays two, but occasionally three or more white, round-oval eggs. The eggs are incubated by the hen without direct assistance from her mate but the cock frequently relieves her for a few minutes. It is unfortunately not clear if the cock actually sits on the eggs during these periods. I have had the opportunity of examining wild, breeding lories on several occasions and I have never found brooding patches on males. The cock also, usually, spends the night in the nest hollow with the hen, but I have been unable to ascertain if the cock is, or is not, actually involved with the incubation of the eggs.

The smaller species have an incubation period of 17 to 23 days, the medium sized species about 25 days, and the largest species up to 30 days. At hatching time, the youngsters are covered with a thick, white layer of down, which becomes gray after a few days. In just a few weeks they gain their feathers and when they leave the nest, they are so well feathered that they are difficult to distinguish from their parents. For the first weeks the youngsters continue to use their nest hollow at night but after two or three weeks they become more or less independent, leave their parents and join up with the general flock. If it is a good year and there is plenty of food available, a second brood may be started shortly after the first has fledged. In really good years even three broods may be reared.

Pairs of lorikeets become very aggressive during breeding and will not tolerate any interference. Birds which approach too close to the nest for comfort will be vigorously repelled and in serious cases blood may flow! They will also vigorously defend the nest against such egg or nestling predators as monkeys or tree martens; however, with felines, snakes, and other large reptiles, courage is lost and the birds will retire protestingly and noisily to a nearby tree. Some of the most serious predators are rats, which have been introduced to many islands by the activities of man. Isolated species with a small range of habitat are especially vulnerable to such predation. Two good examples are the genera *Vini* and *Phigys* from which many species are vulnerable or indeed endangered. The greatest danger of all, ironically perhaps, is man himself with his exploitation of the land. Clearing, draining, reclamation, deforestation, industry and agriculture have all contributed to the serious demise of many species. One serious problem is loss of nesting sites. It takes many years for eucalyptus trees (the main nesting trees of many species in Indonesia and Australia) to age sufficiently to have large enough hollow limbs for nesting. If all the old trees are cleared, there is a shortage of nesting sites. Cleared areas may be developed for many uses but, even if they were reforested with eucalyptus trees, it would be at least a hundred years before they were again suitable for hole nesters.

Water

During my observations on wild populations, it became obvious to me that lories and lorikeets do not readily leave their feeding or breeding tree (often one and the same tree), even to go drinking or bathing. If they should have a choice, they would rather drink

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from the early morning dew, or raindrops on the leaves of the tree (see under). To bathe they use the rain, or frolic among the dew soaked foliage, rather than leave their beloved tree. As they take mainly moist food, drinking water is relatively unimportant to lories and lorikeets when compared with seed eating birds, but they still must always have a fresh supply in cage or aviary. Some species, especially those in the genus *Trichoglossus,* occasionally fly to a stream or slow flowing river and more or less do a "belly flop" on the water surface with their wings spread before flying to a nearby perch to complete their toilet. Captive specimens also appreciate facilities for taking a bath and if you offer them a shallow dish of clean water they will most likely frolic in the water with obvious enjoyment.

Some Ornithological Facts

J. Forshaw (1973) recognizes 11 genera, 55 species and 88 subspecies in the subfamily Lorinae. J.L. Peters (1937) recognized 15 genera, while Dr. H.E. Wolters (1982) believes the figures to be 13 genera, 56 species and 134 subspecies (see also above). Whoever may be right here is immaterial; we must take a compromising view. What is more important is that we maintain our interest in the birds themselves. Enthusiasm for the group started already in London in 1774 when the first illustrations of these birds arrived from Australia. Soon the fantastic colors and patterns were the talk of the scientific world. Interestingly, the whole color spectrum may be found in the plumage of lories and lorikeets: melanin (black, gray, brown), carotenoid (especially yellow, orange and red), and the structure color blue (and violet). There are also uniformly colored species, the Black Lorikeet *(Chalopsitta atra)* for example, and various species in the genus *Charmosyna,* the so-called ornamental lories.

Most species have 12 tail feathers, but the Beautiful Mountain Lories *(Oreopsittacus)* have 14. The genera *Phigys* (Solitary Lories) and *Vini* (Virgin Lories) have extended neck feathers which they can puff out when excited or during courtship. The wings are relatively long, the tail short to medium, sometimes with a pair of extended middle tail feathers. The beak is somewhat narrow and elongated.

One of the most important lory characteristics is the brush-tipped tongue, which is quite long and narrow. At the tongue tip there are several rows of papillae arranged in a U-formation. During feeding, the papillae are erected so that pollen and nectar can be brushed from the food flowers. Once loaded with pollen, the tongue is withdrawn into the mouth and the brush scraped across a fold of skin on the palate so that the food is removed. The tongue papillae are of various lengths depending on the species and it can safely be said that the more dependant the species is on pollen and nectar, the longer the tongue papillae will be. This is particularly evident in the genera *Phigys, Vini, Charmosyna,* and *Hypochyarmosyna.* A colleague, Pagel, has observed, for example, that the Johnstone's Lorikeet *(Trichoglossus j. johnstoneiae)* from the island of Mindanao (Philippines) and the Iris Lory *(Trichoglossus* or *Glossopsitta i. iris)* from western Timor have relatively short papillae, which shows that seeds are a large part of the birds' diets; not hard, dry seeds as obtained on the market, but soft unripe seeds. The base of the tongue is not only a support for the relatively long tongue itself but also assists in the erection of the papillae. The papillae erect automatically as the tongue is extended.

With reference to the fold of skin on the palate mentioned above, it is interesting to note that many ornithologists use this as a major taxonomical characteristic in bird classification. For example the palate-fold in the Iris Lory mentioned above is situated much further back in the mouth than in the genera *Phigys, Vini, Charmosyna* and *Hypocharmosyna* where it is situated more in the middle of the palate. While on the subject, we should not forget that lories and lorikeets play a major role in the pollination of many flowering trees and other plants.

Most of the lories and lorikeets have poorly developed gizzards and thus find it difficult to satisfactorily process dry, hard seeds. However, it is interesting to see how a lory or lorikeet dehusks seeds with the edges of its mandibles. In the wild, half-ripe seed is also thus treated and the tongue is used to move the seed into the ideal positions. Seeds are not swallowed whole or merely crushed, but dehusked, a trait characteristic of all psit-

tacines. Large seeds are frequently held in one of the feet.

Fruits are first cautiously tested with the tip of the tongue before the point of the upper mandible bites into the flesh, while the edge of the lower mandible completes the biting process. A piece of fruit flesh is then manipulated with the tongue while the mandibles make a sort of chewing motion with the fruit being pressed against the horny palate. The juices which are pressed out are swallowed, while any unused debris such as pips or skin are thrown out with a shake of the head. It is therefore useful to have cages lined with plastic so that they can easily be wiped clean with a wet cloth.

Insects such as mealworms and maggots are held with the tips of the beak and the body juices are sucked out, the tongue-tip playing an important role in this. Larger insects may be held in the foot and torn apart. The chitinous shell is not eaten but discarded in the same way as uneaten pieces of fruit.

The tongue also has an important function in drinking. The head is held down at an angle and the beak is opened widely (so wide, in fact, that the upper mandible rarely touches the water surface!) and the tongue tip is placed in the water. The tongue papillae take up water which is withdrawn into the mouth and the process is continued until the thirst is quenched. Being tree-dwelling or arboreal birds, lories and lorikeets only occasionally descend to ground level to feed or drink. As far as drinking goes, they much prefer to lick dew or raindrops from foliage with their brush-tongue rather than descend to a body of water. The birds may perform some stunning acrobatics in their endeavors to reach water droplets.

Sleeping

Breeding pairs with eggs or young will normally sleep together in the nest; non-breeding birds have special "dormitory trees" where they congregate at night, much in the manner of our northern starlings. Such communal roosts are often quite close to the nesting hollows of the breeding birds. The nightly congregations are hardly peaceful affairs and there is much noisy squabbling among the birds as they vie for the best roosting spots, sometimes late into the night. On brighter nights, restless birds will frequently change trees in the quest for a more comfortable sleeping spot and renewed squabbles will be constantly breaking out. I have often observed communal roosts in the mangroves of lagoons and coastal islands, but sometimes also in orchards, parks and gardens. They show little fear of man and I have seen them nesting and roosting in trees in busy town parks! Eventually the birds will settle for the night, only to awake at the crack of dawn full of renewed enthusiasm for feeding and breeding.

Nomadic Behavior

Australian lories and lorikeets have a relatively nomadic lifestyle. This is due mainly to climatic factors, especially in the north where there is a long, dry season in which the vegetation becomes fairly dormant. There are thus few food sources for relatively long periods and the birds must forage over vast areas if they are to survive.●

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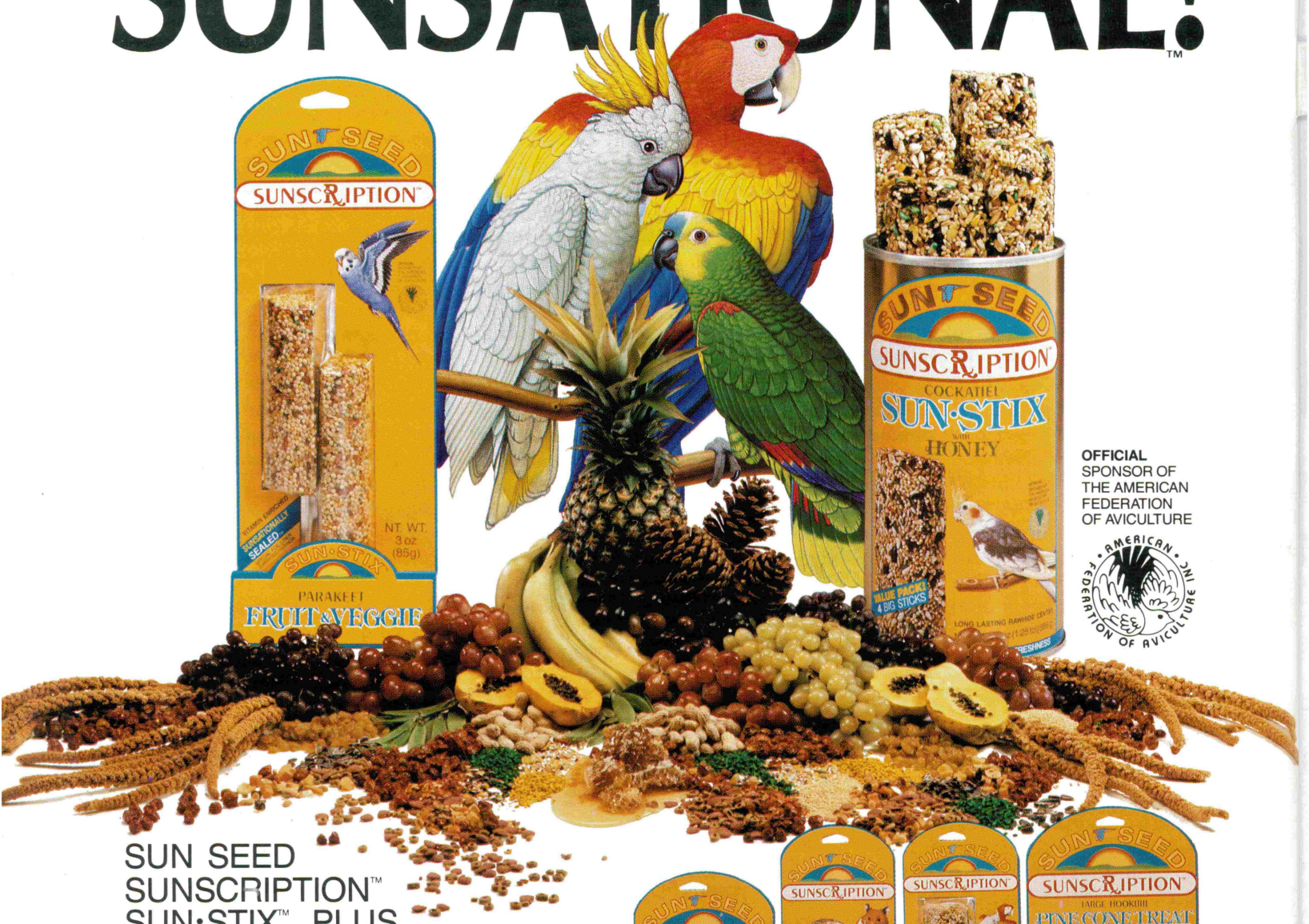

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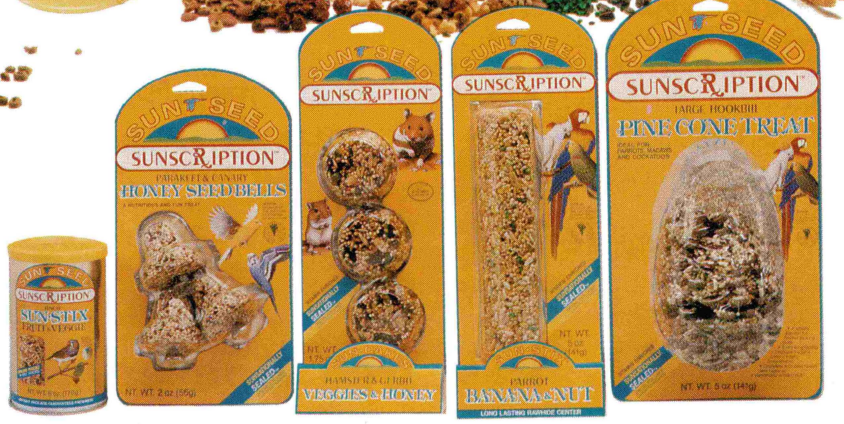

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