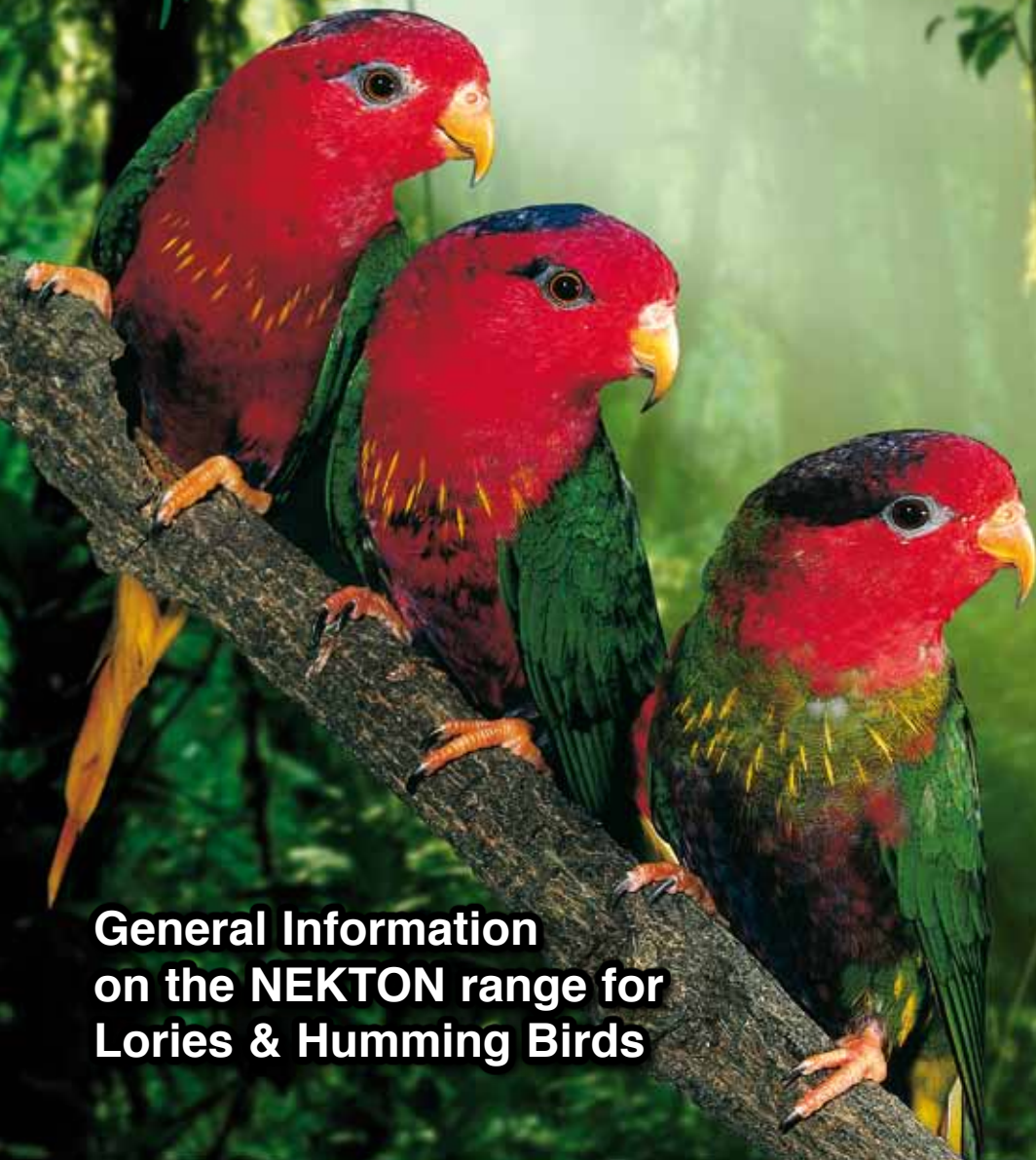




NEKTON

PRODUCTS

Successful as nature itself!



**General Information
on the NEKTON range for
Lories & Humming Birds**

LORIES - LORIIDAE

„The Brush-Tongued Parrots“

Lories are perhaps the most beautiful of all the psittacines. Their dazzling and varied colours certainly rank them as something special in the parrot world.

This group of parrots covers more than 55 species and about 125 subspecies and is distributed entirely in the Pacific region in and around Australia. All sizes from small and dainty to medium (30cm) are represented in the Loriidae family.

Not all the species are to be found in the tropical rain forests and lowlands as one might imagine. Many of them live in cultivated areas, mangrove swamps and the wide timberlands of Australia. Some of the species of New Guinea such as the Musschenbroek's or Goldie's Lorikeet live in the mountain regions there up to 2000m above sea level where the temperature regularly drops to zero and below at night. Even the Rainbow Lories in the subtropical areas of Australia occasionally meet with Jack Frost at night, whereas other species, particularly those of the oceanic islands, are true children of the tropics.

At certain times of the year lories congregate in huge flocks, either where or in search of wherever trees and bushes are flowering to give them their particular food. This "invasion" is often made up of several different species of lories that nevertheless live in harmony, sharing the food "reserves" and moving off together to another area once they have consumed all the available pollen, nectar and even the blossoms. Often the ground below is carpeted with pieces of torn flowers. This does not indicate a destructive nature, however, but is all part of their natural feeding habits. This is the best way for the birds to reach the staple part of their diet – pollen. The whole alimentary canal of the lory from the narrow beak and brush-like tongue to the elementary stomach and short intestine is designed to deal with an energy-rich diet poor in bulk.

Characteristics

Just as lories and lorikeets come in a rainbow of colours and a variety of sizes, they can differ tremendously in behaviour. Some are tame, affectionate and learn to talk easily, others are aggressive, nervous and easily excited. All are extremely active and most of them are very playful and entertaining. They love to take a bath or lie on their backs with their feet up in the air playing with a toy or a piece of food. This supine position is also taken in defence, and the lory uses its strong beak and sharp claws to repulse attacks. As a group they are lively, intelligent and good talkers but they have strong personalities and are great individualists.

Unfortunately the „Lori-speak“ of loud screams and harsh voices is not to everyone's taste, and the strong smell of some species often detracts from the pleasure of keeping a lory or lorikeet as a companion bird as well.

Accommodation and Care

Because of the messy droppings (the main deterrent) and their love of splashing around in water these birds are not really suited to an indoor life. They are best kept in a large well-planted aviary with a heated shelter for the winter. The aviary should also be equipped with a roosting and a nest-box with different sized openings and a large flat dish of water for bathing.

Lories need 12 hours of daylight a day and a drop in temperature at night to reconstruct their equatorial origins.

Keep their entire living, playing and nesting area clean, dry and germ-free and lories will reward you with good health and playful companionship.

The birds should also be examined regularly for mites and other skin parasites.

Breeding

If not already known, it will be difficult to determine a true pair yourself for breeding as both sexes are very similar in appearance.

In some cases display may be an indication of sex, but generally the display of male and female is nearly identical. There may be an increase in affection and preening between the sexes ready for breeding.

Parrots differ widely in attaining sexual maturity. In general it can be said that large parrots are ready for breeding at between 3 and 4 years old and small birds earlier at 1 or 2 years. On an average lorries are sexually mature at two years old.

Copulation usually follows swiftly after display, and display and mating, where the male stands with both feet on the female's back, occur frequently.

Most lorry species lay two white eggs within a two to three-day period, although some members of the genus *Glossopsitta* are known to lay three or four.

After a few days the eggs may show thin grey stripes as in the case of the Stella and Fairy Lorikeets. The hen begins incubating as soon as the first egg has been laid and rarely leaves the nest except for feeding and to defecate. Male lorries take over the job of feeding the female and often participate in the incubation process. The parent birds usually have an even greater love of bathing during the incubation period. Chicks hatch 25 to 28 days after laying. Growth is slow, and chicks will remain in the nest for anything from seven to eleven weeks. By this time

the bird will have thrown off its immature feathers and moulted into a full adult plumage. As a rule young birds will start feeding themselves about two weeks after leaving the nest.

Nestlings are particularly susceptible to disease and should be kept in dry and clean conditions as far as possible.

Naturally it is very difficult to keep rats away from lorries housed outdoors, but every effort should be made to keep them out of the cages and away from nesting and roosting areas. The vermin rats carry as well as their penchant for eating eggs and nestlings has led to the extinction of many a lorry species on the Pacific islands.

In their natural habitat young birds tend to live together in more or less large groups until they have reached sexual maturity and formed true pairs.

Diet

Lories are among the most specialised of all the parrots in their feeding habits as is seen by their brush tongues and digestive systems. The distinctive features all members jointly possess are the narrow beak devoid of



sawing notches and the tongue resembling a brush, which gave the birds their nickname "Brush-tongued Parrots". This tongue tipped with elongated papillae is an anatomical modification for collecting the bird's dietary staples of pollen, nectar and the juices of flowers, tree sap and the flesh of soft over-ripe fruit. Nectar and pollen are the main parts of the lorries' special energy-rich and low-bulk diet. This organ with its wet brush has surely developed from the lorry's need to cover its calorie requirements. Pollen, made up of masses of microspores, is the male reproductive germ cell of flowering plants and a natural source of all the biological elements necessary for transferring and forming new life. As a source of nutrition it supplies the living cells with the substances they need for optimum functioning and is of vital importance to a digestive system designed to cope with high energy requirements.

As with other nectar-feeding birds such as hummers, animal protein in the form of small

insects also plays a part in a lorry's natural diet. Insects are always found in nectar and automatically ingested along with the nectar thus enriching the nutritional menu.

Calorie requirements vary from species to species, however, due to the differences in origins, size and activity. An Arfak lorikeet, for example, has a high demand in carbohydrates, whereas the Iris lorikeet although generally larger gets by very well on a diet of nectar, fruits and seeds and is practically the only seed-eating lorry. Just how much lorries need in carbohydrates in their diet depends on their size, lebensraum and how active they are.

All these factors must be taken into account when looking for a substitute diet for lorries in captivity. Breeding successes in the past few years, particularly with species known to be difficult to breed, have shown that the nutrition must be as close to the natural sources as possible.



Feeding

In view of the rapid energy turnover and the specialised digestive system the diet must be rich in protein. To enable the protein to be fully utilised in spite of fast metabolism it should already be in its basic constituents – amino acids. Vitamins and provitamins are essential for good health, and all the dietary ingredients from the nutritive carbohydrates, proteins and fats to the active substances vitamins, macro and micro mineral elements must be in a well-balanced ratio to complement each other.

NEKTON-LORI

We at the NEKTON manufacturing company have been specialising in species-specific nutrition for birds for many years. Our experience in caring for, feeding, breeding and hand-rearing lorries and lorikeets has all been put into our complete diet NEKTON-LORI, a dry powder to cover all the needs of that type of parrot whose basic diet is mainly in the form of nectar, plant juices and pollen. It has therefore not only proved valuable in feeding lorries but is also the perfect diet for hanging parakeets.

NEKTON-LORI is as close a copy of the natural diet as possible. As with all our species-specific diets, the formula is based on today's scientific findings on avian nutrition, field studies, and our own experience as well as that of renowned breeders. The chosen ingredients are of the highest grade available and in powder form for longer life and easy assimilation. Because of the assurance that this powder contains everything a lorry needs for health and condition and is so easy to prepare and feed, NEKTON-LORI is firmly established as a lorry diet in the homes of private lorry owners and breeders as well as in renowned bird parks and zoos the world over.

In addition, this diet has two tremendous advantages over other feeding methods: There is no food matter left sticking to the beak to foster fungus growth.

All the ingredients are fully assimilated by the body so that the faeces consist of little more than water, meaning no smell or messy droppings to dirty the cage or aviary.

The type, amount and form of ingredients have all been chosen to strictly adhere Nature's requirements. NEKTON-LORI contains over 100 individual ingredients but details of the most important nutrients are given below.

Protein/Amino Acids

The greater part of the protein is already in its basic constituents, amino acids. NEKTON-LORI contains 18 of the 21 known indispensable amino acids, which means it provides the species-specific kind of protein. These 18 amino acids in L form are not only exactly what the bird needs to build its own body protein but also mean that the ingested nutrients are immediately available to the body without having to be broken down in the metabolic process first.

Carbohydrates

The glucose, fructose and sucrose in NEKTON-LORI substitute the natural nectar in a lorry's diet and supply the carbohydrates for energy.

Vitamins

The vitamins in NEKTON-LORI are identical to those in pollen and in part provide the catalytic and regulatory nutrients the body's machinery needs.

Fats, Macro and Trace Elements

No substitute diet can be complete without fatty acids and the inorganic elements essential to the structure and/or the operation of that metabolic machine the body. The NEKTON-LORI formula has therefore been rounded off with these substances to provide complete nutrition for health maintenance.

Use

In the past mixing and blending the right ingredients, monitoring the feeding and controlling the hygiene was a full-time job for the lorry owner. As we have tried to show above,

NEKTON-LORI contains all the life-giving and health-maintaining nutrients and active substances a lory needs and in human-grade quality. This complete diet in powder form means more stability for the ingredients and does away with tediously mixing and blending to find the right formula.

Stir 20ml (20 marks on the enclosed measuring beaker) = 10g NEKTON-LORI powder into 100ml water – do not use a foodmixer or whisk.

The water used should be good quality tap water and have a temperature of around 30°C (86°F). The temperature is particularly important when using the formula for hand-rearing and should not exceed 37°C (approx. 98°F).

Please offer fresh drinking water every day.

Please keep to the stated amount of NEKTON-LORI to 100 ml water. Do not make "The More the Merrier" your motto. An increased dose can lead to damage to your pet's health.

The same applies to adding any supplement to the food; this could upset the existing balance of nutrients and effective substances and do more harm than good.

The NEKTON-LORI formula is protein-rich and this together with relatively high ambient temperatures encourages the food to turn sour in the course of the day, especially if the mixing and feeding utensils are not completely clean and germ-free. Sour food harbouring germs and bacteria is naturally detrimental to a bird's health.

Changing the food twice a day may reduce the danger of it turning sour, but does not eliminate the necessity of taking precautions that anything the nectar solution comes in contact with is scrupulously clean and as germ-free as possible.

Hygiene is one of the prerequisites for healthy, happy animals, which is the reason Günter Enderle, the manufacturer of NEKTON products, developed the disinfectant DESI-PLUS. The label and the instructions with the product will tell you how



DESI-PLUS works, but the principle is the same as the cold sterilisation method used in hospitals and for babies' bottles. Thoroughly clean playthings, baths, feeding bowls and the utensils for preparing the food and put them in the diluted DESI-PLUS solution overnight. Next morning drain everything, no rinsing or drying, and fill the fresh NEKTON-LORI concentrate into the feeding bowl. Nectar feeding tubes or bowls should be strong and heavy with a smooth surface and few corners to harbour germs. Nectar dishes should never be placed on the ground but on a feeding shelf or as a cup firmly hooked to the side of the cage or aviary.

DESI-PLUS has proved so effective in reducing germs and preventing bacteria from forming that the NEKTON-LORI nectar concentrate can safely be given once a day.

Together NEKTON-LORI and DESI-PLUS provide the ideal means of keeping these charming and beautiful birds healthy and fit with a minimum of effort and hassle.

Summary

NEKTON-LORI and DESI-PLUS are the result of our endeavours to find just the right substitute diet, maintain health by providing a hygienic environment and still make life easier for the lory or hanging parakeet owner. The species-specific NEKTON-LORI formula as powder makes it a simple and sure way of giving your birds the right nutrition. Used correctly experts consider it a complete and safe diet. Pieces of fruit or vegetables can be offered in addition to make sure the bird's natural passion for gnawing and activity are kept occupied but NEKTON-LORI itself fulfils all nutritional requirements in an easily assimilated form.

Lorikeets and in particular the sensitive types such as the Whiskered Lorikeet that feed only on nectar should be given NEKTAR-PLUS, a highly valuable and complete diet especially formulated for nectar-taking birds. Let NEKTON products help you enjoy your birds better and give them the best living conditions in captivity.



Nectar-Taking Birds

NEKTAR-PLUS is a complete diet in powder form especially formulated for nectar-taking birds. It is an extremely valuable bird food whose ingredients and blend meet the requirements of even the most sensitive members of the humming bird family. This formula makes it an ideal diet for ALL species of nectar-taking birds, but in this booklet we want to concentrate on two groups in this category - the humming bird family and the sunbird family. On the following pages we will go into detail on the life, care and feeding of these birds. Here in the introduction we would like to at least mention the other species of birds that would thrive on NEKTAR-PLUS in captivity.

First of all there is the genus of Honeycreepers (Cyanerpes), or Honey-suckers as some people call them and which more recent literature classifies as related to the Tanagers, and the sub-genus the Bananaquit. These species are all to be found in Central and South America and feed mainly on the nectar of various flowers. They have become very popular among bird lovers, many of whom have discovered how valuable and convenient NEKTAR-PLUS is as a food for these birds in captivity. We ourselves kept bananaquits successfully for over two years on our station, solely on NEKTAR-PLUS. They were in excellent health and first-class condition throughout.

It has also been proved that even the Flowerpiercer (Diglossa family), once regarded as a „problem child“ with regard to feeding, can be kept on NEKTAR-PLUS without any trouble whatsoever.

We have learned from numerous breeders that they have been very satisfied with the improved health and appearance of their White-Eyes (Zosteropidae) fed on NEKTAR-PLUS, although these birds come from such different parts of the world as Ethiopia, Japan and Australasia. There are even owners of

exotic finches who insist on feeding their birds on NEKTAR-PLUS during breeding or shortly before shows and swear by its positive effect on the condition.

In addition we have found that NEKTAR-PLUS can also be used as an excellent and complete diet for small lorikeets. For some time now we have been rearing and keeping such lorikeets as the Whiskered and Red-flanked Lorikeet on a sole diet of NEKTAR-PLUS without any loss whatsoever. In fact results have been even better than feeding them on NEKTON-LORI, our nectar-concentrate for lories.

NEKTAR-PLUS, therefore, with its well-balanced composition can be given to practically all types of birds feeding on nectar, not forgetting the Flower Peckers (dicaeidae) and the Honey-eaters (Meliphagidae).

Further NEKTON products with a high protein content are NEKTON-LORI, a complete diet for all lories and hanging parrots; the NEKTON-TONICS, K for seed-eaters, I for insect-eaters, F for fruit-eaters and R for insect-taking reptiles. Details of these and all other NEKTON products will be gladly given on request.

HUMMING BIRDS

How and Where They Live

Humming birds belong entirely to the New World, being distributed throughout both American continents. The over 300 different types of hummers form the second largest family of birds to be found in the neo-tropical area. The greatest variety of species is centred around the Equator, with the largest concentration of varieties in Ecuador, Colombia and Venezuela. Their distribution, however, covers both American continents from the southern tip of South America to the cold wilds of South Alaska in the North. It is this huge variety and the vast area of distribution that prove how wrong popular belief can be. Clearly the common idea of jungle vegetation, high humidity and temperatures as the typical ambience for humming birds

cannot apply to all members of the family. In fact there are species of hummingbirds that can be observed feeding at temperatures around freezing-point, 5000 metres above sea level in the Andes. To put it in a nutshell, hummingbirds can be found anywhere in the Americas where their staple diet of nectar and various insects is in sufficient supply.

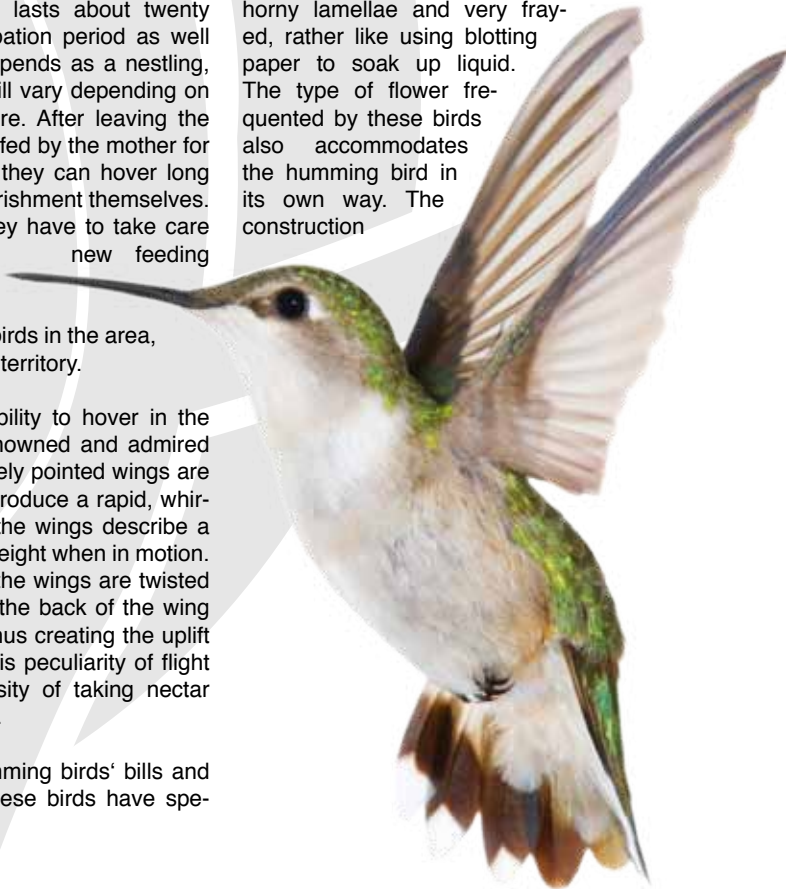
This dependence on nectar as a giver of energy is also the reason for the aggressiveness of almost all the species in this family, and why they are forced to drive out every other hummingbird in their territory if they want to survive. This has also led to the female, and the female alone, being responsible for making the nest, hatching the eggs and raising the young. She only meets the male for a short time on the joint boundary of their feeding grounds in order to mate. The incubation period for the usual two, white, cylindrical eggs lasts about twenty days. The actual incubation period as well as the time the baby spends as a nestling, usually three weeks, will vary depending on the ambient temperature. After leaving the nest, the fledglings are fed by the mother for a few more days until they can hover long enough to get their nourishment themselves. After that, however, they have to take care of themselves and find new feeding grounds or they meet the same fate as all other „alien“ hummingbirds in the area, and are driven off „her“ territory.

The hummingbirds' ability to hover in the air has made them renowned and admired everywhere. Their acutely pointed wings are especially adapted to produce a rapid, whirling flight. The tips of the wings describe a flat, horizontal figure of eight when in motion. During this movement the wings are twisted to such an extent that the back of the wing is facing downwards, thus creating the uplift necessary to hover. This peculiarity of flight arose from the necessity of taking nectar from isolated blossoms.

The form of some hummingbirds' bills and tongues shows how these birds have spe-

cialised in one main source of food - nectar. Among the 300 types of hummingbirds, there are some quite amazingly shaped bills; the Sword Bill (*Ensifer ensifera*) with its 10-centimeter-long bill, almost as long as the bird itself (13 cm), for example, or, in contrast, the Purple-backed Thornbill (*Ramphomicron microrhynchum*), whose bill is all of 0.5 cm in length. The bill of the Buff-Tailed Sickle Bill (*Eutoxeres aquila*) curves in a semi-circle downwards while the tip of the Fiery-Tailed Awl-Bill's 2-cm-long bill turns upwards (*Avocettula recurvirostris*). But no matter how extreme the shape, the hummingbird's bill always serves as a track for its extensile tongue. Using its beak as a guide and support, the hummer is able to glide its tongue well out.

It then sucks out the nectar with the forked tip of its tongue, which is made up of horny lamellae and very frayed, rather like using blotting paper to soak up liquid. The type of flower frequented by these birds also accommodates the hummingbird in its own way. The construction



of the stamen enables the hummer to pollinate the blossom by transporting the pollen, clearly showing the interdependence of bird and flower.

A further peculiarity of humming birds is their ability to lower their body temperature in emergencies, slowing down the rate of metabolism and thus drastically saving energy.

Last but by no means least, we must not forget to mention the brilliant, iridescent colours of most humming bird varieties - the feathers glittering or dulling as the light moves over them. No wonder these birds are sometimes called „Jewels in Flight“.

Their glittering plumage, whirring flight and fascinating life and behaviour have made humming birds one of the most interesting members of the bird kingdom.

Basic Rules for Keeping Humming Birds

Years ago keeping humming birds caused considerable difficulties. In the early stages not enough was known about the living and feeding habits of these birds, so that false ideas of what was involved often prevented aviculturists

from realising this dream. Today, however, any serious bird fancier can fulfil this wish if he is prepared to take a little care in the requirements of these attractive birds in captivity.

The most frequent questions asked by prospective humming bird owners are where to keep them and how to feed them. The following answers and further tips plus expert advice should smooth the way to making ownership of these birds a real joy and constant source of pleasure.

Unlike many other bird families, they do not live in groups so that keeping different species together in one aviary presents certain problems. In view of the aggressiveness typical of almost all humming bird species, placing each single bird in a cage of its own is not a „make-do“ solution but a true necessity. A so-called crate cage L80 x B50 x H60 cm with two thin twigs, either with a smooth bark or bark removed, a bird bath (e.g. coaster for a plant pot, approx. 20 cm diam.) half-way up the side of the cage make an ideal home. Place the feeder tube at a height where the bird can reach it easily from a sitting position, too. The NEKTON feeders are especially designed for feeding nectar-taking birds and obtainable in any good pet store or department. Made of brown plexiglass, the feeder cuts off ultraviolet rays, meaning the important vitamins and the protein-rich food mixture keep longer. Cover the floor of the cage with absorbent, dust-free material such as newspapers or cat litter and change weekly.

In order to keep different humming birds together in one aviary it is necessary to know something about the behaviour of the species. In any case, they should only be kept together in aviaries with thick foliage to provide them with hiding place. There should always be more feeders than birds. The same species or birds similar in appearance should not be put together.



Beginners should start their collection with a single Sparkling Violetear (*Colibri coruscans*), a Green Violetear (*Colibri thalassinus*) or a Rufous-Tail Humming Bird (*Amazilia tzacatl*) or any other of the *Amazilia* genus, as they are not only comparatively hardy but also belong to the more attractive breeds.

SUNBIRDS

How and Where they Live
(and how they differ to humming birds)

Sunbirds are very like humming birds in habits and appearance, but this often leads to the wrong ideas about the relationship. Among the nectar-taking birds of the world they have the same ecological place in the Old World as the hummers in the New World.

The world distribution of sunbirds is extensive. This quite uniform bird family is divided up into five genera covering 106 species with a distribution area spread over Africa, on to Southeast Asia and as far as Australia. Most of the species are to be found in Africa, however, and Australia has only one species of sunbird.

Like humming birds, it can be said that a sunbird can be seen anywhere at any time within its area of distribution as long as there is some source of nectar and insects close at hand. It has perfected using the slightest form of biotope to a fine art, and can consequently be found in wide-open spaces; grassy plains; along the coast; in dense, humid forests; high plateaux and semi-arid places.

In spite of the superficial similarities between sunbirds and humming birds, they are not related in any way. Both families may possess extensible tongues for probing nectar and both hover before flowers, although the sunbird's „hovering“ is clumsy in comparison. In both cases the males have the most brilliant plumage but sunbirds and humming birds do not even belong to the same group of birds. Sunbirds are members of the Passiformes i.e., perching birds, whereas hummers fall under the Apodiformes, like those aerial feeders the swifts.

Humming birds have never come into contact with any of the sunbirds. Their area of distribution is purely New World while sunbirds have a east-to-west spread of distribution across the Old World. But not only the uninitiated are often confused by the fact that nectar forms the base diet in both cases and both types of birds share a plumage in bright and glossy colours.

The size of sunbirds ranges from small to very small, the tiniest being 9cm long and the largest reaching a length of 25cm. Their bills are slight and slender, sharply pointed and mostly curving downwards. Like humming birds the sunbird's tongue can be extended and the tip is tubular in shape with horny cuticle attached to the fleshy portion.

Almost all of the males in the sunbird species possess a mature dress of brilliant and metallic hues, but off-season moult to the same drab colours of their females (eclipse plumage). In full colour, however, some males even outshine the most attractive humming birds, and the metallic sheen of the reds and yellows shimmers and shines on the dullest day.

Unlike the hummers, whose wings are acutely pointed, the sunbird's wing is rounded with the third to fifth primaries the longest. Twelve rectrices form the sunbird's tail, compared with ten in the hummer's. Another difference between the tails is their shape; a sunbird's tail is never forked like a hummer's but rounded, tapered or blunt-ended, and in some males the centre tail feathers are extremely elongated.

These two members of the nectar-taking families differ mostly in their feeding techniques. The hummer „stands“ in the air, hovering in front of the blossom, whereas the sunbird grasps the stem or the flower itself with its sturdy legs and probes the blossom. As already mentioned the sunbird can also hover in the air, but it is a fast, flattering movement which can be held for only a few seconds.

The two families differ in their reproduction behaviour as well. The female sunbird is again the nest-builder at all stages, even if records do show that the male occasionally makes a slight contribution in collecting material for the elongated, purse-shaped nest with its side entrance.

Incubation is the sole province of the female. The male maintains a vigil nearby while the female is incubating the two elongated, light-coloured eggs with the dark flecks near the poles. Chicks take about 13 - 20 days to hatch depending on the ambient temperature. After hatching, the male becomes a truly active partner and helps the female to feed the young during the 2 - 3-week nestling period. The male sunbird may not be the most perfect husband and father, but compared to the humming bird he is a faithful and true partner.

These lively little birds are winning the hearts of more and more bird lovers and due to the simplified care available today will surely continue to grow in popularity.

Basic Rules for Keeping Sunbirds

The number of aviculturists who have taken up keeping this brilliantly coloured and lively group of birds has grown considerably in the past few years. This can be explained by the fact that we now know more about the habits and requirements of sunbirds, and, what is more, have distinctly improved means of feeding these birds at our disposal today.

As sunbirds are rather more robust and less complicated in their care than humming birds, many bird lovers prefer to try their hand at collecting them first. It should not be forgotten, however, that all they have in common is their basic diet - nectar, pollen and insects.

Although sunbirds cannot be included in the gregarious types of bird families they are by far less quarrelsome and incompatible among themselves than humming birds, and different species can be kept together in one

aviary or a species in pairs in cages, provided they are large enough. Sunbirds are very active birds, always on the move examining all the crevices and corners of their territory, so they need plenty of space to keep them happy. The cage should not be smaller than L150 x B50 x H80cm. Decorate the inside of the cage with twigs, not forgetting of course to leave enough room for the birds to spread their wings. NEKTON drinking tubes, obtainable in any reputed pet store, should be used to administer the nectar solution. Place the feeders in locations easily reached by the sitting birds. Bath bowls can be installed either at higher levels, as for humming birds, or on the floor of the aviary or cage. Again cat litter has proved the most suitable floor covering.

The African members of the sunbird family can best be recommended for people just starting to keep these bright birds with their jaunty ways. These species are comparatively easy to obtain, and the following types are not only more robust but also interesting and attractive: the Yellow-Bellied Sunbird (*Nectarinia venusta*), the Scarlet-chested Sunbird (*Nectarinia senegalensis*), the Marico Sunbird (*Nectarinia mariquensis*) and the Beautiful Sunbird (*Nectarinia pulchella*).

Feeding Humming Birds and Sunbirds

(basically applicable to all other nectar-feeding birds)

Aviculturists are often reluctant to try keeping nectar-feeding birds and in particular hummers or sunbirds, because they think feeding them is too great a problem. In the past many bird lovers, particularly those out at work all day, found it an almost insurmountable problem to mix up the individual ingredients, and that twice a day. Our team of products - NEKTAR-PLUS, DESI-PLUS and NEKTON feeders - now reduces this problem to sensible proportions and makes these worries melt away. Properly used, these three products ensure correct and healthy feeding.

NEKTAR-PLUS

SAVES TIME: Pre-mixed diet in powder form; just add water.

COMPLETE DIET: Much more important than the time-saving factor of NEKTAR-PLUS is the fact that this powder contains all the substances that make up a nectar-feeding bird's natural diet. The form of these substances, their balance and blend have been chosen to meet the sophisticated requirements of humming birds, so that this powder covers all the needs, including insects, of other families feeding on nectar. A balanced selection of carbohydrates, protein, fat, vitamins, minerals and trace elements makes NEKTAR-PLUS the perfect dietary answer to the anatomical structure of nectar-taking birds, especially as the source of protein comes from the free amino acids.

Amino acids form the basic constituents of

proteins, whose value depends on the assortment and proportion of these amino acids. Of the 20-odd known amino acids there are 10 that must be included in any diet if serious and irreversible damage to the bird's health is to be avoided. The organism of these birds is unable to produce these essential amino acids itself, meaning they must form part of the diet regularly. By means of acids and ferments in the digestive system, the protein intake is broken down into its components i.e., amino acids, and then absorbed by the cells to help the body form its own protein. As the 18 different amino acids, including the 10 vital ones, contained in NEKTAR-PLUS are already in free form, that is as individual protein components, the digestive system need no longer degrade the protein. This is of considerable importance to birds whose basic nourishment consists of flower nectar, because of the form of their stomachs. The inlet and outlet to the stomachs of humming birds and sunbirds are comparatively close together, meaning that when the stomach



is full, a large amount of liquid nourishment enters the pylorus (the outlet) shortly after entering the stomach and before the protein can be broken down into its components. In addition, the staple diet of nectar-feeding birds in their natural surroundings is nectar and various small insects, the protein providers. The captured insects end up in the bird's stomach where the protein is first split up into amino acids, whereas the nectar by-passes the stomach when it is full and provides an immediate source of energy. It is impossible for a bird owner to provide his hummer or sunbird with the 500 small insects required daily so that any commercial diet for these birds must contain the necessary protein in free form.

NEKTAR-PLUS fulfils this requirement by means of its 18 different amino acids in free form and which have been especially selected and blended with all nectar-taking birds in mind. This means an additional time-saving factor for owners. They no longer need to worry about breeding a regular supply of fruit flies needed to feed humming birds and almost all species of sunbirds, but can still be sure that their

pets are receiving the vital and health-giving substances.

The carbohydrates needed for the honey-sucker's basal metabolism are contained in NEKTAR-PLUS in the form of glucose, fructose and sucrose, thus corresponding to the natural flower nectar.

Fats have been kept to a minimum in NEKTAR-PLUS as these birds are able to produce it themselves from the carbohydrates in the diet. In order to avoid any possible deficiency of these sub-

stances, the fats in NEKTAR-PLUS consist of unsaturated fatty acids in the main.

Our vitamin supplement NEKTON-S, already known to true bird lovers, has been used to vitaminize the diet and adjusted to the nectar-feeding bird's needs. That is to say, the amount of vitamin A and the vitamin B block have been increased, as the demand for vitamin B1 rises in relation to the higher amount of carbohydrates; vitamin B6 is needed for the metabolism of amino acids, and

vitamin B12 is responsible for the growth and density of the plumage. There are 13 different vitamins as well as provitamins in NEKTAR-PLUS.

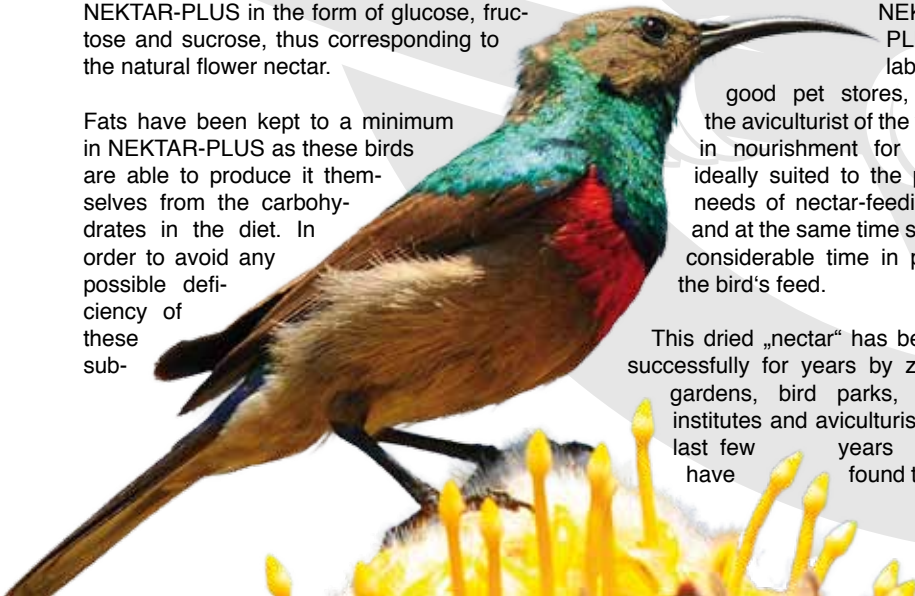
Great care has also been taken to get just the right combination of minerals and trace elements in NEKTAR-PLUS, as these are the substances with a decisive influence on all the important metabolic processes in the nectar-taking bird's body. These essential elements must form part of the daily dietary intake.

The amount and number of nutrients and effective substances in NEKTAR-PLUS have been chosen to complement each other. In fact, in some cases, the presence of one is the key factor to the functioning of another.

NEKTAR-PLUS, available in all

good pet stores, ensures the aviculturist of the very best in nourishment for his bird, ideally suited to the particular needs of nectar-feeding birds, and at the same time saves him considerable time in preparing the bird's feed.

This dried „nectar“ has been used successfully for years by zoological gardens, bird parks, scientific institutes and aviculturists. In the last few years catchers have found that there



is no problem whatsoever in weaning freshly caught birds onto NEKTAR-PLUS, resulting in a big drop in losses both before and during shipment.

NEKTON Feeders

NEKTAR-PLUS provides our nectar-feeding birds with a complete and healthy diet, but we must ensure they get ALL of this solution. The correct blend of substances would be wasted, if the birds did not get the full benefit down to the last drop. We at NEKTON found ourselves forced to design a drinking tube whose construction corresponded to the feeding habits of nectar-taking birds. This tube in brown plexiglass is impervious to ultra-violet rays, which destroy certain vitamins, and plexiglass has the advantage of having a longer service life than ordinary glass. The floor of the tube is sloped so that the tongue can reach the very last drop of solution and the nozzle is red-rimmed to attract the bird to the source. A loop for hanging up is already attached to the tube.

DESI-PLUS

Now we have the correct diet and the correct means of feeding our feathered friends, but under normal circumstances we would still have to prepare the daily ration twice a day. NEKTAR-PLUS, like any other liquid diet rich in protein, turns sour in the course of the day if no preventative measures are taken. DESI-PLUS, however, makes feeding once a day possible, a boon for working bird owners and the answer to the danger of infection.

The disinfectant DESI-PLUS guarantees a germ-free and sterile nectar feeder, which means the nectar solution keeps longer, and the risk of gastric infections or thrush and such fungus diseases is reduced.

DESI-PLUS is a concentrate which becomes a highly effective disinfectant when mixed with water. Clean all parts of the feeder (tube, rubber stopper, cap etc.) as usual and place in the DESI-PLUS solution overnight. Take them out next morning and leave to drip dry before filling with the NEKTAR-PLUS soluti-

on- do NOT rinse or wipe dry.

Apart from the benefit of trouble-free feeding once a day, this method means very little wastage, as any nectar solution left over has to be thrown away only once a day. The true value of the combination of NEKTAR-PLUS and DESI-PLUS can best be recognised by people who already possess a nectar-feeding bird. What could be better than being able to go out for the day without a guilty conscience or leave your pet with friends or neighbours without them moaning about the time and trouble involved?

Not only private bird owners appreciate this easy method of feeding. Zoological gardens, bird parks and other large bird collectors have long since recognised the advantages of the NEKTON combination. These three products make keeping nectar-feeding birds almost child's play. Now the owner has more time to watch and enjoy his pets, and at the same time recognise problems as soon as they arise, take measures faster - and so his birds live longer. We can only recommend prospective owners of humming or sun birds to make their dream come true by joining the ranks of satisfied aviculturists using the NEKTON answer to feeding nectar-taking birds.

Instructions For Use are enclosed with all products.

This brochure has only been able to give you some basic information about these fascinating birds. Any questions or requests for further details on this subject are welcome.



NEKTON®

PRODUCTS



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