

Waxbills and Their Allies

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Part III

There are two different types of dietary requirements for waxbills – a daily existence or staple diet and a richer, breeding diet. The staple diet should generally consist of the basic seeds (usually mixed millets and canary seed), a little greenfood and the occasional livefood. However, it is essential to realize that some species require more regular daily amounts of livefood (see notes on individual species). The breeding diet must consist of the basic seeds plus an increase in greenfood, a considerable increase in livefood and the daily addition of wild seeds and eggfood.

Ordinarily these two different diets would always be seasonal for the wild bird, being dependent on the rains, but in captivity there is a tendency to artificially prolong the breeding period in order to propagate as many birds as possible. However, while such propagation is undoubtedly appealing to the aviculturist, what about the birds themselves? Our aim should be to keep and breed only healthy stock and not have them perpetuating to such an extent that our reward for their domestic affability is to allow them to die from exhaustion!

When it comes to feeding, waxbills are generally very easy to cater for, but the food has to be of the highest quality. I always order my seed in bulk from John E. Haith Ltd., a specialist supplier based in Cleethorpes, Lincolnshire, who then has it delivered straight to my door. I never buy seed from a pet store as I have often found it to be of an inferior quality and very dusty. My basic seed mixture is Haith's foreign finch mixture but without the inclusion of red



A colony of Black-rumped Waxbills bred and photographed by Ian Hinze.

millet, which my birds won't touch. The company has been very helpful in this regard so that the mixture I receive consists mainly of white and yellow millet, panicum, a little Japanese millet and canary seed.

Besides the above, I also offer British Finch mixture. This has come about because, a few years ago, I kept a mixed collection of waxbills and some goldfinches together in a free-flying birdroom and put separate dishes down containing seeds for both types of birds. Within a short time I noticed the waxbills taking seeds from the goldfinches' dishes – basically canary seed, rape, niger, linseed, gold of pleasure, and small amounts of hemp and teazle – and vice-versa. Ever since, I have provided the British Finch mixture as a daily accompaniment to the



Two juvenile Dybowski's Twinspots. Note the whitish cape remnant which is absent in the mature bird.



A mixed collection of waxbills from the collection of Ian Hinze.

regular mixture. Occasionally, I also provide millet on the spray, which elicits great excitement and is relished by all the birds in my collection, as is eggfood. Soaked seed, while seeming to be of use to other breeders' birds, has never once proved popular with my own. Try as I might, I could never tempt any species to touch it. In any case, it is completely superfluous to my stock during the breeding season as I am able to supply them with large quantities of wild meadow-grass seeds on the stalk (see below).

Greenfood

Newcomers to waxbill-keeping will often read articles that contain a reference to soaked seed, but without any information as to what it actually is. Soaked seed is merely the, usually, staple seeds having been left to soak in water in order for them to germinate or sprout shoots (roots, actually). Seeds which have germinated provide our birds with tiny amounts of greenfood, although many species won't touch it.

My method is to place half a cupful of yellow and white millet and canary seed in a bowl and to cover it with tepid water that contains about 10 mls of bleach. The bleach kills off any harmful bacteria without affecting the seed or one's birds. Place a lid on the bowl (this can be a plate or saucer) and leave it in a warm place, preferably at a temperature of 26-29°C (80-85°F), for 12 hours. At the end of this period empty the seed into a sieve and rinse thoroughly with cold water. Replace the damp seed in the bowl, cover it again, and put it back into the warm place for a further 12 hours.

When the time is up, remove the lid and allow the excess water to evaporate. Germination will already have started and the seed should be left uncovered for 24 hours – but make sure that it doesn't dry out completely. It is now ready to be offered to your birds.

It is not necessary for the seed to have sprouted but it should have a nice, nutty aroma about it. If it has an unpleasant smell it must be discarded as it will have gone off. If all is well but you find that you have soaked too much seed, put the surplus in the refrigerator. The cooling effect stops

the germination process without killing the seed.

Another easy method of soaking seed, devised by Mr. John Shanks, is to use a plastic soft drink bottle. Cut the bottle in half and, using the bottom half, soak the seed for the same period of time given above and also add the 10 mls of bleach. Drill two small holes in the cap of the bottle, screw it back on the spout, and, after soaking, transfer the seed from the bottom half of the bottle into upturned the top half. Now place the upturned top half of the bottle into the bottom half and allow the dirty water to drain into it, whereafter it should be emptied. Fresh water can then be poured over the seed and the bottom half of the bottle emptied as often as is needed until the water runs clean. If sprouted seed is required just leave it until it germinates, giving the occasional rinse so that it doesn't dry out.

Vegetables, while often ignored completely by many species, are, nevertheless, an important addition to the diet. I found that by pushing the likes of Brussels sprouts, cabbage, and carrots through a hand-grater, which forces the food out into tiny, easily

managed particles, these were particularly enjoyed by my Cordon-bleus and Purple Grenadiers. With broccoli I just snap two or three stems high up and offer the heads (florets), whereupon the birds love to pick over them.

Seeding Grasses and Plants

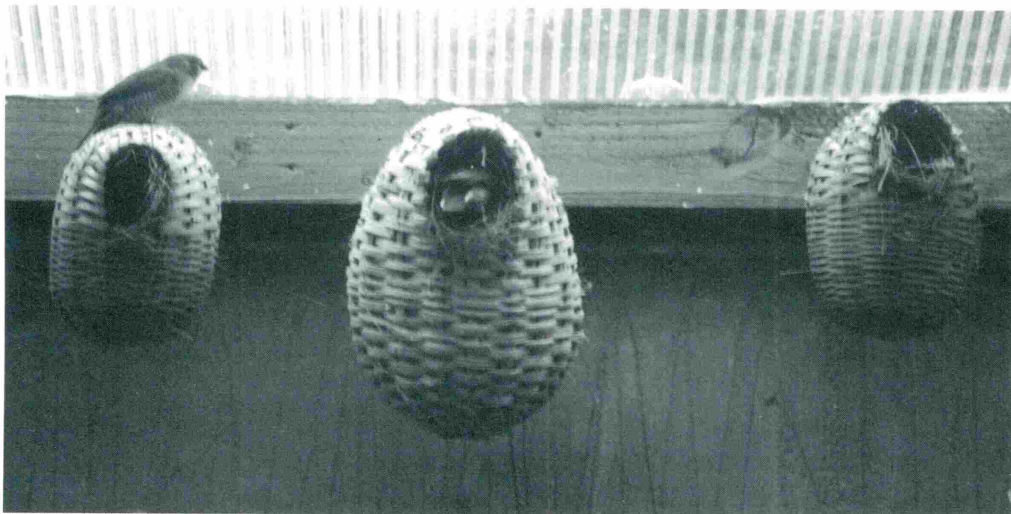
During the late spring and summer months, nature offers up an abundance of vitamin-rich unprocessed seeds that cry out for harvesting. A field or overgrown piece of wasteland is always worth inspecting if one is absolutely sure it hasn't been sprayed with insecticide. I regularly visit such places and when I come across what I'm looking for I unfold a couple of carrier bags from my pockets and take out a pair of sharp scissors. Grasping hold of a bunch of stalks containing ripe or half-ripe seeding grass heads I snip away low down and place the whole lot in the bags. Fresh seed-heads are collected every day and a good field can supply one's needs for weeks on end.

The following is a list of grasses and plants one is likely to find beneficial and I include the best places to find them. The list is by no means



Photo by Ian Hinze

Nest of the Red-cheeked Cordon Bleu consisting of 1,399 pieces of coconut fiber.



Nesting baskets being used in Ian Hinze's birdroom.

complete but is merely an indication as to the variety of native seeds that are available in abundance during the warmer months of the year and with which I am in no doubt have helped give me so many breeding successes over the years.

- Top of my list has got to be annual meadow grass *Poa annua*. It is a native annual commonly found throughout Britain on wasteland, roadsides, fields, gardens and even cracks in pavements. It is also found in lawns where it continually re-seeds itself. It reaches up to 30 cm in height and flowers all year round.

- Rough meadow grass *P. trivialis* is a native perennial with creeping stolons. It is also common throughout Britain, but primarily in meadows and pastures as well as wasteland. It is easily distinguished from other meadow grasses by its rough leaf sheaths and long pointed ligules. Its height is from 20-100 cm and it flowers in June and July.

- Narrow-leaved meadow grass *P. angustifolia*, another native perennial, spreads by rhizomes and is found on hill grassland; particularly on chalk, limestone or sandy soils. It resembles smooth meadow grass but is smaller and has narrower leaves. Growing as high as 60 cm, it flowers from April to June and is most common in the south of England.

- Smooth meadow grass *P. pratensis* has creeping rhizomes. It is a native perennial and can be located throughout Britain on pasture, arable land, wasteland, roadsides and walls. It is used for hay, grazing and on park and sports ground lawns. Its height is from 10-90 cm and it flowers from May to early July.

- Perennial rye grass *Lolium perenne* has long been sown as a fodder crop for hay or for grazing. It is a native perennial and is common throughout Britain on wasteland, meadows, fields and roadsides. It can reach 90 cm in height and flowers between May and August.

- In spite of its name, common knotgrass *Polygonum aviculare*, which is very common throughout Britain, is not a grass but a wild flower. It is an excellent food for waxbills and needs to be included in the list. It is a native

annual of waste places, sea shores, arable land and roadsides. Trailing stems may be as long as 1.5 m and it flowers from July-October.

- Chickweed *Stellaria media* is a very common annual weed and can be collected from roadsides, wasteland and in gardens. The leaves and shoots are generally offered to birds, but the seeds, too, are extremely popular with waxbills. It flowers all year but mainly in the spring and autumn.

- Dandelion *Taraxacum officinale* is a native perennial that is very common throughout Britain. It is found in waysides, fields and as a weed of lawns. It flowers from March to September. The entire plant can be dug up, roots and all, and put through a hand-grater or mincer. When the seeds are ripe, the white fluffy heads can be cut off and the seeds used for feeding.

- Groundsel *Senecio vulgaris* is an abundant annual weed of gardens and wasteland and is found all over Britain. It should be treated as for the dandelion. It flowers all year round.

- Shepherd's Purse *Capsella bursa-pastoris* is a very common annual weed of gardens and waste places and it flowers all year. It is found throughout the British Isles and grows up to a height of 35 cm. It gets its name from its purse-shaped fruits. Wait till the seed pods are fully formed, then pull the plant up and allow the birds to pick over it.

- Hoary Plantain *Plantago media* is a native perennial, but most common in southern England on grassland,

waste places, roadsides and as a garden weed. It reaches 25 cm in height. Provide the seeds and fruiting flower spikes by cutting the heads from off the stalks.

- Ribwort *Plantago lanceolata* is a native perennial, very common on roadsides, meadows and as a lawn weed. It reaches 50 cm in height. Provide the seeds and fruiting flower spikes by cutting the heads from off the stalks.

Not only will the seeds of the above grasses and plants be found to be popular with one's birds, but so also their heads and stems – for nest-building! One grass in particular I have found especially useful at breeding time and much favored by Estrilda species is Yorkshire fog *Holcus lanatus*, which is used as a nest lining. In spite of its name, it is a native perennial common throughout Britain on pastures, roadsides, wasteland and woodland on all types of soil. It is covered with soft hairs which give it a soft velvety feel. Often flushed with pink or purple, it may also be found to be almost white and grows to a height of about 100 cm. It flowers from May to August. Only when the seeds are really ripe will they be eaten, but for me this is secondary.

Eggfood (softfood)

There are various commercial eggfoods on the market and many keepers have their own particular favorite. I use the once Dutch, now Belgian, product Cé-Dé. All that is

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required is to put enough of the Cé-Dé into a bowl to last, at the very least, a full morning and to gently pour in a small amount of previously boiled water from the kettle but which has been allowed to go tepid. Mix the eggfood and water together until the eggfood absorbs the water and becomes of a nice crumbly-moist consistency. Getting this consistency just right takes practice. It is important not to give one's birds the mixture too dry or too wet as it will be of absolutely no use to the poor nestlings. Once the correct consistency is attained, scoop the eggfood out into shallow dishes and give it to your birds straight away. A fresh amount will have to be made in the afternoon otherwise it will become too dry or may even sour.

Once young birds are independent, that is being able to fend for themselves, it is vital to continue augmenting the staple diet with a little livefood, wild seeds, and greenfood.

Grit

Mineralized grit is completely unnecessary for waxbills and can be extremely dangerous. It is a complete fallacy that all birds need grit to grind down seeds in their gizzards as the majority of seedeaters dehusk the seed before swallowing it. Once the seed passes down the oesophagus it enters a glandular stomach known as the proventriculus, which produces digestive juices. The food then begins to swell as it takes on moisture and digestive enzymes, before it goes into the gizzard to be broken down into smaller particles and then passed into the intestines for absorption. Any grit swallowed can build up in the ventriculus and waxbills, possessing a high metabolism, cannot pass it fast enough. It takes less than three hours for a waxbill to have its intestines emptied, but a build-up of grit prevents this and more essential food cannot be swallowed. The bird, in effect, starves to death!

For many years now I have offered only crushed baked poultry eggshells, oystershell, limestone, and cuttlefish bone all mixed together to assist my birds' digestion. These items are absorbed without injury and are extremely beneficial. If grit were nec-

essary my birds would have shown signs of ill-health and most definitely wouldn't have bred. The fact that they breed regularly each year and are extremely robust speaks for itself.

Livefood

The majority of waxbills encountered in captivity can subsist on a daily diet of seeds and a little greenfood and eggfood, but the more delicate species will also require daily amounts of livefood. When it comes to breeding, however, it must be realized that *all* waxbills require livefood, for without it, with very few exceptions, not a solitary nestling will survive. The "exceptions" are individuals, generally captive-bred, that dedicated breeders have skillfully and patiently managed to persuade to take only inanimate food, particularly eggfood. These individuals have gone on to rear their own offspring without any livefood, at which point one could say they are truly domesticated.

Species that have been successfully reared without livefood include the Goldbreast, *Amandava subflava*, Red Avadavat, *Amandava amandava*, Red-billed Firefinch, *Lagonosticta senegala*, Red-cheeked, *Uraeginthus bengalus*, and Blue-headed, *U. cyanocephala*, Cordon-bleus and the Black-rumped Waxbill, *Estrilda troglodytes*. Wild, imported birds, however, are not so easily enticed onto eggfood alone and so, for these, livefood should never be withheld.

Soft, white-skinned mini-mealworms, waxworms, whiteworms, and fruit-flies and their larvae are all so easy to procure from specialist suppliers these days but, if one has a mind to, and particularly when one is concerned over costs, they are extremely easy to propagate oneself.

Mealworms

The aviculturist's great favorite, the mealworm, *Tenebrio molitor*, (its larvae, actually) can often play a most valuable part in waxbill breeding. To breed this insect, get some plastic trays, about 3-4 inches in depth, and place equal amounts of larvae into each tray and cover with an inch of chicken meal - not bran! Mealworms



Live bloodworms purchased in a sealed bag.

reared in bran will be deficient in calcium as it contains phytic acid. Phytic acid handicaps the absorption of calcium and, as mealworms are already low in this essential element, chicken meal, which is a balanced diet in itself, is far preferable.

Allow the mealworms to pupate and turn into beetles. These will lay eggs at the bottom of the trays and, after six weeks, the beetles should be discarded as their sexual life will have come to an end.

After about six weeks the eggs will hatch and once the larvae reach about 1 cm in length start to supply small amounts of sliced carrot every three days or so. Mealworm beetles and their larvae (but not pupae) require carrot for essential moisture. The tiny larvae will grow through a series of successive molts and it is the whitish-skinned mealworms, i.e., those that have just gone through a molt, that are the ones we should feed to our birds. If the carrot slices are lifted up one will find masses wriggling underneath. Preferably, these shouldn't be much more than half an inch long.

Mealworms that possess hard, unmolted skins should never be used as they can be indigestible and potentially dangerous to nestlings. In time, one will be able to work out a rotation system with the trays, whereby some will contain larvae at different stages of growth and others beetles and pupae.

Fruitflies

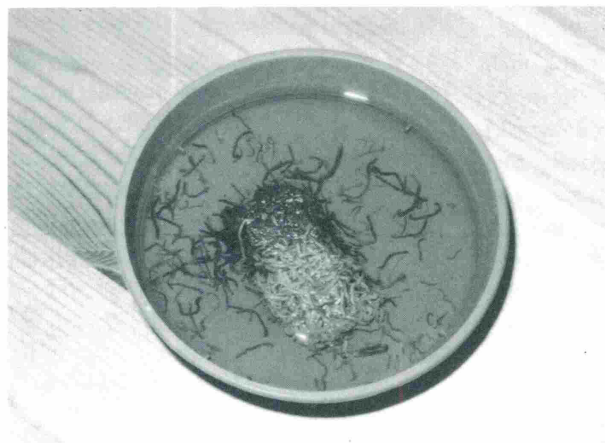
Fruit-flies (*Drosophila*), and particularly their larvae, are the best type of



Pressing frozen Bloodworms out of foil wrap.



Pouring tepid water onto a frozen cube of Bloodworms.



A cube of Bloodworms melting in tepid water.

early livefood for the nestlings of most waxbill species and can be propagated in old ice-cream tubs. The tubs should be half-filled with tightly folded newspaper and on top of this one should place layer upon layer of chopped banana until it almost falls over the sides of the tubs (the skins have no value and can be discarded). Put the tubs of bananas in the birdroom, but out of reach of the birds, and don't allow the temperature to fall below 18°C (65°F). Place a container of fruit-flies (available from specialist suppliers) near the tubs and remove the lid.

Within two weeks the bananas will have become mushy and swimming with larvae. These will eventually pupate up the sides of the tubs and it is at this point that fresh tubs of bananas should be placed alongside the old tubs to enable the hatched-out fruit-flies to lay their eggs. In a very short time one will be able to offer tubs full of flies and/or their larvae to the birds. The flies will likely be "hawked," i.e., taken on the wing, while the larvae will be eagerly picked out of the mush.

Whiteworms

Whiteworms, *Enchytraeae*, are another excellent food source for breeding waxbills and can be propagated in large plastic ice-cream tubs or old washing-up bowls. Fill the containers with bulb fibre that has been mixed with water to a crumbly consistency and scoop out hollows in it with the aid of a large spoon. Into each hollow place a dollop of rather wet milk-sop (bread and milk) and a spoonful of the whiteworms (available from specialist suppliers) and cover over with the bulb fibre.

Place the containers in a fairly cool (not cold) place and make sure that the bulb fibre is kept moist, such as by using a mist spray, which can be purchased from a garden centre. If after a week or so the milk-sop has largely disappeared, then add some more. Once one has enough whiteworms to make a second culture it is time to do so and feed the rest to the birds. Handfuls of bulb fibre and worms can be spread out in small receptacles and placed on the cage floor, allowing the

birds pick over the substrate to take their fill. Supply only enough of the worms to last them during the day, and then up the amount once any young hatch out.

Alternatively, place about a 2.4 cm (1 in) layer of bulb fibre or loam in a medium to large plastic ice-cream container and add a layer of powdered mashed potato that has been mixed to a thin paste with cold water. On top of this put a levelled layer of whiteworms and cover with 4.8 cm (2 in) of the bulb fibre or loam, and then spray the surface lightly until it is just damp. Drill some tiny holes in the ice-cream tub lid, snap the lid onto the container, and then place it in a warm place of around 18°C (65°F). Check the food regularly and if any has been consumed add more by placing it in a shallow hole of about 2.5 cm (1 in) deep in the centre of the container and cover it with the substrate. Also continue to make sure that the substrate never dries out but is always just damp. When it is evident that enough whiteworms have been produced to start a second culture, take some out and repeat the basic procedure. The whiteworms remaining from the first culture can now be fed to the birds.

Although some birds may at first shy away from the whiteworms, persevere, as once they get used to them they take them avidly.

Woodlice

A free and easy livefood that everyone will have come across is the woodlouse (*Oniscus asellus* and *Porcellio scaber*), the only crustacean to live exclusively on land. These greyish, oval isopods can be found lurking under stones, rocks and pieces of wood. They have to live in damp places or their gills, which are in the form of thick-skinned appendages on the legs, cannot function. If woodlice are kept in a dry room they become desiccated and die within only six hours.

In captivity woodlice can live from 4-6 years. To keep and breed them, one will need merely a square, shallow plastic ice-cream tub containing soil or compost to a depth of 1.5 cm. On top of the soil/compost place a lump of wood and around this place a

few pieces of fruit and vegetables, such as apple and mushrooms, as well as some dead leaves. Collect a few woodlice and then release them into the container, whereupon they will eventually hide under the wood.

To prevent the woodlice from escaping, pierce some holes in the lid of the ice-cream tub with a darning needle and then place the lid onto the container. It is vital that the woodlice home is kept damp and this can be achieved by spraying the soil with a mist spray. Do not over-water the container as this is as dangerous for the occupants as letting it go dry.

The woodlice will live on the fruit and vegetables and it won't be long before they start to reproduce. The female carries her eggs around in a special brood pouch underneath her body. The eggs hatch out between 32-45 days and the youngsters are at first also cared for in the brood pouch. Once the young are independent, their mother ceases to look after them. Usually two broods are produced per year and they are best harvested while they are young and soft, as these are ideal size and texture for nestlings. Larger woodlice may be taken by adult waxbills, but they will most likely be completely ignored.

Bloodworms

A healthy bird's psyche tells it that livefood is essential if its youngsters are to be reared. Our knowing this means that getting it to expunge such thoughts in favor of an inanimate diet is not easy, but at least we can simplify matters. Bloodworms (*Tubifex*), which derive their name from their blood-red coloration, are small aquatic worms, around 1π cm (2/5 in) long, that have long been used by fish keepers. Because they are aquatic, many bird-keepers are reluctant to use them, or are unaware that their stock would find them palatable. Unfortunately, live bloodworms can be difficult to get hold of these days due to aquarists fearing that it may carry water-borne infections that could possibly be passed on to the fish. Instead, bloodworms tend to be specially treated before being frozen and then sealed in foil packaging.

If possible, for our experiment, it is best to purchase both live and frozen bloodworms. For now, keep the latter in the freezer and pour the live bloodworms into shallow dishes. I find small brown plastic plant-pot holders ideal and I place about a third of the bloodworms in each of three dishes (which is about all a culture will supply). The water in the dishes should be shallow but also just deep enough to allow the bloodworms to wriggle about in. The worms' wriggling is usually enough to elicit immediate attention by the birds.

As with whiteworms, some birds will partake of the bloodworms quite quickly while others are more reticent, but eventually all should eat it with relish – my Dybowski's twinspots consume theirs within a morning. Once the live bloodworms are proving popular it is time to start introducing the frozen kind.

Take the foil-wrapped bloodworms out of the freezer and press out a cube, rather as one would press out a pain killer, such as aspirin, from a foil strip, and drop it into a jug of shallow boiled water that has been allowed to go tepid. It won't be long before the bloodworms are completely defrosted and can be mixed, 50-50, with the live bloodworms and offered the birds as usual.

The live bloodworms encourage the birds to eat the dead ones as well, although some birds will take to the dead ones without there being any need to mix them. First of all, however, it is as well to mix the worms to be sure of their all being eaten. Once all are being consumed, reduce the amount of live ones daily until the birds are eating solely dead ones.

Gradually, using such techniques, it should be possible to change our birds' psyche to gladly accept only inanimate food.

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