

# Lead and Zinc Toxicities

by Linda Pesek, Westbury, NY

**L**ead intoxication or plumbism is one of the most common poisonings of companion and wild birds. Birds are very inquisitive and frequently investigate objects in their environment. Parrots especially have a tendency to chew on almost anything in their reach.

Lead may be found in numerous places in the home. Common sources of lead include curtain weights, fishing and boating accessories, batteries, solder, certain ceramic glazes, costume jewelry, foils on wine and champagne bottles, lead paint and drying agents, antique or imported cages, Tiffany lamps and stained glass. Certain toys for

small birds such as rolling penguins contain lead weights. If a larger bird breaks these open, it is able to ingest the lead.

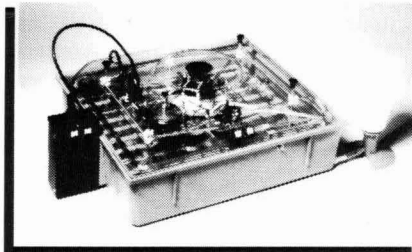
Lead damages the nervous system, bone marrow, liver, gastrointestinal tract and kidneys. Clinical signs of lead intoxication depend upon the species of bird, the amount of lead ingested, the period of exposure, and the material present in the gizzard.

Lead poisoning may be acute with the ingestion of a large amount of lead at one time or chronic with accumulation over weeks to months. Ingested lead is degraded by the stomach acids and absorbed into the bloodstream.

Some lead is retained in the soft tissues and bone marrow. Excretion occurs by the kidneys over months.

A variety of signs may occur depending upon the species and whether exposure is acute or chronic. Acutely exposed birds may die suddenly with little to no signs of toxicity or they may develop regurgitation, appetite loss, depression, weakness and abnormal droppings. Neurological signs including head tremors, twitching, balance difficulties, circling, wing droop, leg paresis and convulsions may occur. Amazons and African Greys may pass loose bloody droppings.

Birds suffering from chronic lead



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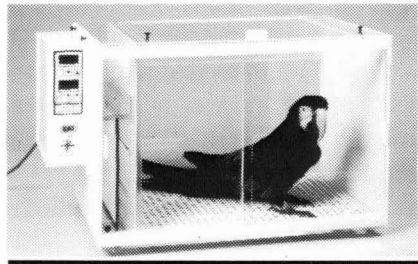
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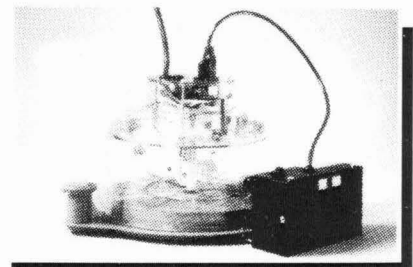
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poisoning often regurgitate, and lose weight. Paresis, paralysis and blindness may be present. Diagnosis is based upon clinical signs, radiographs, and blood lead levels. Lead should be considered as part of the differential diagnosis of any ill bird, especially if it is allowed to roam freely in the home. Radiographs may reveal the presence of metallic densities in the digestive tract. Not all metal densities are lead and not seeing metallic densities does not rule out lead poisoning. Some lead-containing objects such as paint chips are not radio-dense. Clinical signs can occur when lead previously sequestered in bone marrow moves into the blood. Blood lead levels may be determined. Anytime a suspicion of lead toxicity occurs, treatment should be initiated.

After the bird is stabilized, chelating agents such as CaEDTA are administered to remove lead circulating in the blood. A dramatic improvement often occurs within a short period of time in birds suffering from acute lead poisoning. Small metal fragments present in the gizzard may pass with oral administration of lubricating agents such as cellulose or peanut butter. Epsom salt combined with activated charcoal acts as a cathartic and will prevent further absorption of lead from the gastrointestinal tract. Large metallic pieces may require removal by endoscope or gastric lavage.

Seizures are controlled with valium and the bird is supported with fluids, tube feeding, and heat. Blood levels are monitored over several weeks and radiographs are taken periodically to ensure that the lead is removed.

In addition to lead, zinc intoxication is becoming increasingly more common in caged birds. Sources of zinc include galvanized wire, hardware cloth, certain washers, nuts, and snap-on fasteners, and some pennies. Signs are very similar to those in lead poisoning and fortunately the diagnosis and treatment are similar.

Chronic exposure may occur with birds exposed to fine zinc powder on the surfaces of their cages if the cages are treated with zinc coating. This powder is not radiographically visible.

The best way to prevent lead and zinc toxicity is to "birdproof" your bird's environment.



# Brown-hooded Kingfisher

*Halcyon albiventris*

by Glen Holland, New Zealand

Usually found in pairs inhabiting riverine vegetation, but also some distance away from water in open woodland and in gardens. Their calls consist of a melodious "choo, choo, choo, choo, choo" often in the form of a duet and accompanied by the birds flitting their wings. The call is repeated rapidly when disturbed. The pair also make soft twittering calls to each other when the mate is not in sight. Males are brighter in colour than females.

Their aviary should be landscaped for an open woodland situation including a pool of water into which they can dive to bath. A few dead branches and upright tree stumps will provide ideal hunting perches. As they naturally occur in warm climates, in countries where temperatures remain below 12° C (54° F.) for extended periods, particularly if cold and wet, adequate shelter must be available. In temperatures near freezing, an additional source of heat should be provided. Brown-hooded are a woodland species and are not fishers. They will sit motionless on an exposed branch for long periods, interrupted only by the occasional bob of the head as they watch for prey below. The prey is caught in a straight glide from the perch.

They are extremely aggressive when breeding and I have had a Bee-eater knocked off my hand and killed instantly by this species. I have, however, kept them with Pied Kingfishers with no problems. This was due in part to the different food sources used by the two species, and because the Pied were too young to compete for nest sites. Brown-hooded and all

woodland kingfishers are best housed with birds of the same or a larger size than themselves for example *Tockus* hornbills, shrikes, starlings, and weavers.

## Diet

They should be fed on a diet of 40% ox heart strips and 30% chicken strips with a multi-vitamin powder added to both of these once per day, and the remaining 30% of the diet consisting of live food such as mealworms, waxmoth larvae, winged termites, grasshoppers, locusts, praying mantis, millipedes, crickets, and pinkie mice. If a small fish is stuck in very shallow water they will take it and will also take small dead fish fed by hand, but they do not dive into deep water after fish. Out of the breeding season they are fed once per day but this should be increased to twice per day in the pre-breeding season period and three times per day while breeding. They will always take the livefood first and when renewing food a small quantity of substitute meat should always be left from the previous feed. All livefood (even if dead), and very often the meat strips as well, will be bashed against a branch to "kill" and pulverize them.

## Breeding

A Brown-hooded pair will excavate their own nest into a sandbank. A sandbank is easily constructed by building a vertical face of boards and then piling the sand mixture up behind these. Plant the top of the bank with a shallow rooted creeping plant which will assist to hold the sand in place. Water lightly on a regular basis and after eight weeks the wooden face can