

THE FEEDING OF LIVE FOOD TO EXOTIC PETS: ISSUES OF WELFARE AND ETHICS

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Abstract

Live food items are often fed to exotic pet species whether they are birds, amphibians, reptiles, or mammals. This raises issues of welfare, both of the animals fed live prey items and the prey itself. Concerns over live food welfare are particularly marked in the feeding of vertebrate prey items and evidence presented here shows the prolonged time taken for rodents to die. However, the welfare of all exotic pets relies both on providing optimal nutrition to the predator and ensuring, as much as possible, that their natural behaviours can be expressed. Does that mean that predatory species must be fed live prey? This article discusses this problem and seeks potential solutions. Copyright 2014 Published by Elsevier Inc.

Key words: companion exotic animals; live foods; prey; welfare

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any of the “exotic” species that are maintained as pets (companion animals), for study, or are at a zoo or a rescue centre are exclusively or partly carnivorous and therefore require food of animal origin. Many omnivores also feed in part on live or dead animals, and some essentially herbivorous/graminivorous species (e.g., finches, Fringillidae) require invertebrate food when they are nestlings.

The emphasis of this article is on the provision of still-living food, but the feeding of dead animals is briefly mentioned. The discussion relates mainly to live food given to *captive* exotic animals, but it must be remembered that *free-living* individuals also kill and eat live prey.

THE USE OF LIVE FOOD

Food comprising live animals or their derivatives is widely considered to serve 2 main purposes. Firstly, from a nutritive perspective, it contains important, sometimes essential, amino acids, vitamins, and other nutrients. Secondly, from a behavioural viewpoint it provides captive animals with stimulation, especially when it is presented in an imaginative way, providing a very important form of environmental enrichment. The subject of “live feeding” of animals in zoos and private collections

has become a specialist topic, with numerous articles in the literature about how best such diets should be chosen and presented. These include precautions to minimise damage to the predator by attacks from the animals provided as live food.

The welfare benefits to the predator of feeding of live animal food are viewed by many as well substantiated; as noted earlier, it provides behavioural enrichment and represents a natural or near-natural method of providing essential nutrition. There is, however, another important consideration, which is sometimes forgotten or ignored. This is the question of the well-being of the live food that is being offered. After all, the food consists of living animals that, regardless of their taxonomic status, may be subjected to and affected by stressors, including pain during the period before and while being consumed by the predator.

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There are several stages at which the prey species may be subjected to stressors. The first of these is during production or collection. Live food is either bred in captivity or collected in the wild, and in many cases such breeding or collection may involve stress for the animals involved. When offered as food, before being devoured, the live food prey item is often in an unusual, "alien" environment. It may, for example, be exposed to abnormally high temperatures or bright lights, rendering the individual, by definition, vulnerable to attack/prehension by the animal to which it is being fed.

The key welfare issue for many animals provided as live food will be when they are being consumed. Some live food are killed almost instantaneously by the predator, using physical or chemical means from trauma to envenomation, both of these potentially rendering the prey immobile while losing consciousness. In such circumstances, there may be little risk of poor welfare. But often death takes much longer—for instance, a rodent constricted and thus killed by suffocation by a snake, or a cockroach dismembered while it is still alive. Some prey items may be swallowed whole and are therefore still alive—and presumably conscious—for some time until they die of asphyxia or the effect of the predator's gastric juices.

If not immediately consumed, uneaten prey may be taken and eaten at a later time, perhaps on another day, but in the meantime it has to survive in an alien environment, often without water, food or appropriate shelter. Occasionally the prey item is never eaten, either because the predator is no longer hungry or because the prey escapes. As a result, it may die of starvation, dehydration, hyperthermia or hypothermia in the predator's cage. It may, alternatively, establish itself in that cage or escape into the home/zoo environment (i.e., crickets, Gryllidae).

THE DEBATE

Vertebrate Food

Some decades ago, concern began to be voiced by individuals and certain institutions about the practice of feeding live vertebrates to captive mammals, birds and reptiles. The methods employed, of feeding live vertebrates, began to be subjected to greater scrutiny and criticism as a greater understanding of, and sensitivity to, issues of animal welfare evolved.

Approximately a hundred years ago, the London Zoo (with its academic wing, the Zoological Society

of London) introduced a ban on the feeding of living vertebrate food to its captive reptiles and instead opted to train the latter to take freshly killed prey or items (i.e., a freshly dead rabbit) that could be moved to simulate life or placed in an unusual environment, such as a hollow tube, to interest the hungry predator. At least in Britain, many other zoos and herpetologists followed suit, and by the late 1980s the use of dead, not living, prey was considered to be "good practice." During the 1970s, claims were regularly made by animal welfare groups that live feeding was "illegal" in the United Kingdom (UK), but these assertions were countered in lectures and articles.¹ The point was made that there was no specific legal ban on live feeding of prey species to animals but that such a practice might lead to a prosecution under the Protection of Animals Acts.² Herpetologists who still wanted to feed live food to the animals in their care were encouraged to take steps to minimise suffering in various ways, for example, by not leaving live food in the vivarium for long periods of time and by providing shelter and water for the prey species. Those recommendations in Britain were in a large part a modification and refinement of the approach taken by the senior author nearly a decade beforehand, when, in an attempt to encourage a more humane approach to live feeding of snakes in East Africa, a document was drawn up by the Kenya Society for the Prevention of Cruelty to Animals ([Appendix A](#)).

"Force-feeding" of nonliving food is also a possibility, particularly when used for "difficult" species, such as royal pythons (*Python regius*), but this method of feeding can also be stressful to the animal being fed. Another argument used on both sides of the Atlantic to dissuade reptile keepers from feeding live vertebrate food was that the latter could easily attack and damage the predator species. Thus, for instance, live rodents put in vivaria as food can cause severe skin lesions in snakes.³⁻⁵ Moreover, a casual glance through online video clips, as detailed later, shows that live vertebrate prey are still fed to reptiles by a number of keepers.

Invertebrate Food

Questioning the feeding of live invertebrates to captive animals is less common, even at this time. In the 1980s, an "animal rights" group based in Scotland lobbied for more awareness of the welfare needs of invertebrate animals and included in their concerns the use of crickets, mealworms and other species as food items for captive mammals, birds and reptiles. In the past 2 decades, interest amongst

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