

CAPTIVE CARE OF ANOLES

(*Anolis spp.*)

Species

The green anole (*Anolis carolinensis*) is the only anole native to the U.S.; to 9" snout-tail length (stl). Other species commonly available in the pet trade or found in the wild:

- A. equestris* (Cuban, or Knight, anole; to 20" stl)
- A. garmani* (Jamaican Giant (or crested) anole; to 11" stl)
- A. sagrei* (Brown anole; to 9" stl)
- A. cybotes* (Bighead anole; to 8" stl)
- A. disticus* (Bark anole; to 5" stl)
- A. cristatellus* (Puerto Rican crested anole; to 7" stl)

Anoles are sometimes called "chameleons." This is due to their color-changing ability of the green anoles, especially, who when severely stressed or ill will turn dark brown. They are not true chameleons, species of lizards who look very different than anoles and come from different parts of the world. If your green anole is always brown, it is a sign of stress.

Origin, Habitat And Habits

Found in Southeastern USA, Cuba, Jamaica, and other Caribbean islands. Only the green anole is native to the U.S.; all others are released or escaped pets, many of which have survived and bred in the U.S.; the other six species are native to the Caribbean islands. The vast majority of green anoles sold in the pet trade are wild caught in the Southeastern U.S. There are over 36 species of non-native anoles breeding in the wilds in Florida (out of an estimated total of 250 anole species in the world), and there has been considerable interbreeding so markings may be considerably altered from the true wild types.

Habitat:

Found in bushes, trees (not above 15'), in and on rock walls, woods, around houses.

Habits:

Primarily terrestrial, these diurnal lizards inhabit low bushes and the ground underneath. Often found sunning on exposed walls and branches.

Diet:

Wild diet includes grubs, crickets, cockroaches, spiders, moths, any arthropod which will fit in their mouths. In captivity, avoid 'sowbugs' (aka potato bugs, pill bugs) and beetles. Even though anoles will go for bigger prey, the size fed to them should be no bigger than 1/2 the size of the anoles head.

Captive Housing

Anoles are best kept singly or in groups. Generally, males should be kept singly or in the company of two or more females.

Minimum tank size for a group of two adult anoles would be a tall 10-gallon tank. Three or four (one male and up to three females) anoles may be kept in a 20-gallon tall aquarium (48" x 13" x 20"). The more lizards there are, the more hiding places and basking areas needed, so tanks must get correspondingly larger.

Minimum Requirements:

Despite their relatively inexpensive price tag, anoles are not "cheap" lizards. The basic captive environment requires:

- 1 Vitalite (or other UVB-producing fluorescent) - 12-14 hours a day
- 1 basking light
- 1 nocturnal heat light, as needed to maintain night time temperatures
- 1 undertank heating pad (human heating pads are appropriate)
- 2 thermometers (cool end and warm end; ideally, a third should be placed in the basking)
- Sterile peat moss potting soil over 1 inch of pea gravel, OR 1-2 inches of potting soil covered with bark mulch
- Several 2 inch potted plants - helps maintain humidity and provide cover and shade from the UV and basking lights (*Sansevierias* are good, as are bromeliads, philodendrons, ivys, orchids and vines and groundcovers)
- Logs or branches for basking (essential for arboreal lizards!)

Not appropriate for anoles:

- hot rocks
- heat tapes
- heated caves
- sand or gravel substrates

Temperatures

Basking area: 85-90 F available in daytime only

Overall thermal gradient: 75-80 F days, 65-75 F night

Humidity and Water

The ambient enclosure humidity should be maintained around 60-70%...humid but not wet rainforest conditions. Spray plants with purified water (tap water causes hard water spots on plants and glass) a couple times a day, or set up a dripper or mister system.

In the wild, anoles lap off leaves. In captivity, you cannot assume that they will figure out what a water bowl is, so you will need to spray the leaves for them. Some anoles do learn to drink from bowls: you can aid this learning process by setting up a dripper bottle to drip water into a shallow bowl. It is the sight and sound of dripping, splashing water, which attracts their attention.

Diet

The anole's captive diet should be as close to their wild diet as possible. Most people feed small crickets and mealworms (the latter of which most anoles will not take). As with many reptiles, anoles may be scared of prey that is too large for them to handle.

Wild-caught bugs may be accepted eagerly. Make sure the insects are collected from pesticide free area and areas not heavily impregnated with auto exhaust particulates. Stay away from bugs you are not certain of, or ones known to be toxic, such as fireflies.

Feed anoles daily, letting them have as much as they will eat. If crickets are left uneaten in the enclosure, be sure to provide them with proper cricket food and moisture - otherwise, they will eat whatever is handy: your anoles!

Prey insects need to be cared for properly to provide the most nutrition for your lizards. If you cannot find the right size for your lizard, you can order them through the mail from one of the many companies that breed and supply these food items..

Gut-loaded freshly molted crickets and mealworms, every other day - usually 2-3 appropriately sized food items per feeding is fine. If any food is left in the tank, food for the prey **MUST** be provided. Gut-load 24-48 hours on tropical fish flakes, high protein dry baby cereal, reptile vitamins and fruit.

Foods appropriate for gut-loading include tropical fish flakes; high protein baby cereal mixed with reptile vitamins; ground monkey chow mixed with calcium supplement. Provide moisture by placing pieces of carrots, apple, orange, etc., in the cricket enclosure. Dehydration is the biggest cause of cannibalism in insects.

Temperament

Some anoles may become comfortable with being gently handled. On the whole, however, handling is very stressful to them, and stress will cause them to become ill. Initially, however, all anoles will try to run from you when you go to pick them up and may bite...and they have quite strong bites for being such small, delicate creatures! Biting, as much as it may hurt you, may be more dangerous for them if you jerk your hand away - this can break their jaws or cause teeth to be ripped out. So, handle them as little as possible, and don't jerk your hand if you get bit - put them back in their enclosure so that they can feel something under their feet - that will get them to release you.

They can drop their tails if grabbed there (this is called autotomy), and their fragile toes can be broken or injured if removed ungently from branches, bark or your clothing.

Health Issues

Since they are primarily wild caught lizards, highly stressed from the capture and the deprivations and often inhumane conditions of the pet trade, they are generally dehydrated, moderately to severely emaciated, and riddled with parasites - just like most reptiles sold in this country every year. A dehydrated reptile will not eat, or will not eat very much, as digestion requires considerable quantities of fluids.

All new reptiles should be tested for internal parasites and checked carefully visually for external parasites, so find a reptile vet before, or right after, you get your anole.

If there are any significant folds of skin, or the eyes are sunken, the lizard is dehydrated. If 24 hours of higher than normal humidity does not resolve it, the anole should be taken to a vet to be assessed for other methods of fluid administration.

Persistent black spots behind the eyes on the head may be an indication that your anole is seriously ill.

Anoles, when heated, lighted, fed and housed properly, are fairly hardy lizards. Depending upon the age they are when they are caught/bought, the older ones may not settle in as well as the younger ones. Remember: to them, you look like a giant predator. They are not as intelligent as many of the much larger lizards so you must be patient and understand that you may end up with some beautiful lizards in a lush, beautiful environment (lots of plants, bark slabs for hiding places, etc.) rather than a lizard who will tolerate a lot of handling and social interaction.

Signs of Stress

When a green anole turns brown, it is a sign of severe stress. Stressed anoles may turn green at night when their lights are out and they are asleep, but will turn brown again once they wake up and start the new day.

The stress may be environmental (enclosure is too hot or too cold, or there is a cat staring at them most of the time you aren't around, etc.), or it may be psychosocial, something that will happen if you are keeping two or more anoles together in one enclosure. Two lizards require more room than one; three lizards more than two.

Sexing

Adults reach ~7 inches snout-tail length (stl). Wild specimens of 10 to 12 inches reported; 9 inches considered big in captivity. This may be due to the fact that they are not generally cared for properly in captivity (diet, heat, lighting) and so do not grow as well and die earlier than in the wild...(about 4 years in captivity).

Males are larger than females and have a dewlap (throat fan), which they use to display to females and rivals. Some males have a dorsal crest (beginning just behind the head), which is raised as part of the threat display (typically with the dewlap extended). Males have enlarged post-anal pores (found on the tail below the vent).

Females, and juveniles of both sexes, may have a white stripe down the back. Females of some species have dewlaps - if they do, they are smaller than those of males, and displayed less frequently.

Reproduction

Captive anoles will breed, or attempt to, readily if conditions are right. Breeding occurs most often in the spring and summer months after a period of brumation. For several weeks, they must be kept at lower temperatures (65-70 F during day; down to 60 F at night) and with a shorter photoperiod (8 hours instead of the usual 14). During this time they may be fed only if they take food - they should not be force fed, and weak or thin anoles should not be brumated. The anoles must be healthy and be receiving the necessary UVB and vitamins, especially calcium, accomplished by gut-loading their prey.

Signs of breeding include males displaying their dewlaps and posturing to females. Males may start bobbing their heads rapidly while turning toward female. If female runs away she's not ready; if she stays or, while running, allows herself to be caught, and bows her head, the male will grab her neck with his mouth and they will mate. Actually mating generally occurs in afternoon or evening hours. Breeding season lasts 4-5 months.

Within two weeks of a successful mating, the female will begin to show a swollen abdomen. She will search out a warm moist place in the substrate, push it aside with her head, and deposit an egg (rarely, two may be laid), covering the egg with the substrate. This will be repeated every two weeks, for a total of about 10 eggs per breeding season. Eggs can be removed from the vivarium but many successful hatchings have been achieved leaving by the eggs in the vivarium.

To prevent injury to the egg, either by the female digging to bury another one or by you as you service the terrarium, the eggs should be removed and set carefully in a mixture of damp sterile vermiculite (1:1 mix, or one part water to 12-14 parts vermiculite) or sand, in a covered container, and incubated at 82-85 F, checked weekly to assure the substrate remains damp and that none of the eggs has molded. Provide gentle, not direct heat, to keep the container at 84-86 F (29-30 C); eggs should hatch in 35-40 days.

Hatchlings are 1.25" svl, about 2-2.5" stl, and are considered mature at 4-5" stl. They eat voraciously, and must be supplied with lots of pinheads that have been properly gut-loaded and shaken in a calcium and multivitamin supplement before being fed out. Fruit fly larva and wingless fruit flies are also good foods for hatchlings.

Behavior/Communication

Anoles produce no sounds. They can drop their tails if grabbed or otherwise feel threatened. A new tail will generally grow in but regenerated tails are rarely the same as the original in color, texture, or size.

Anoles are generally not aggressive, but males may quarrel if housed together. This applies to inter-species confrontations as well. Some anole species will produce aggressive displays to their reflections in mirrors. Knight anoles should not be housed with other anoles smaller than themselves - they will as cheerfully feed on green anoles as they will spiders and crickets.

Behavior during breeding season may be significantly different than outside of breeding season. Males will display more (posturing, dewlap-flaring) and become more aggressive towards other males. Dominant males may develop black postorbital spots on their head. A sign of their status, most subordinate males will leave these dominant males alone. In a too-small enclosure, however, having two males both attempting to attain and maintain dominant status may end up tragically for one of them.

Breeding-minded males will also annoy females more.

Not all females will be receptive to all males. Despite extensive research in mate selection, there are still a lot of unknowns. We do know that if a male pursues a female who is not interested, it could cause significant stress in the female, stress to the point of illness. If you are housing more than one anole in an enclosure, you must increase the size of the enclosure and provide discreet areas so that the female can get away from, and out of sight of, the male.

Aggression may be overt and forceful, such as butting, biting, and chasing, but it can be more subtle, too. If you have two or more green anoles and one is always brown, observe them carefully. Notice where the brown one goes, and where it does not go. You will probably see that it is not eating, basking, or otherwise behaving in the same way as the others. More careful observation should enable you to identify which of the other anoles is causing this behavior. A dominant anole (male or female) uses posture and physical position within the environment to maintain their dominant status. While some subordinate lizards are fine with this, some are not, or may for some reason become the focus of the dominant lizard. If you have such a stressed anole, you will need to separate it from the others, providing a completely separate enclosure for it and possibly one other anole with whom you know it is compatible.

A note for parents

The main drawback to anoles is that they require the same type of set ups as more expensive lizards, something which people looking for a "cheap" lizard for their children (and adults buying them for themselves) often have a hard time accepting... Buying all of the equipment they need, and having their feces checked by a vet for internal parasites, taking sick anoles to the vet for diagnosis and treatment, is going to cost you **significantly** more than the lizards themselves. Anoles are, however, great lizards that can be set up in a wonderful naturalistic setting, enabling you to set up a bit of the jungle anywhere you like in your house. For some wonderful ideas on setting up naturalistic vivaria, one of the following books is a must.

Good Resource Books

The General Care and Maintenance of Green Anoles. Philippe de Vosjoli, Advanced Vivarium Systems, Escondido CA.

Green Anoles: Selection, Care and Breeding. Ray Hunziker, TFH Publications, Inc., Neptune City, NJ. (Please ignore the photos of products in this book - most do not apply to anoles or are completely inappropriate for or dangerous to anoles and other reptiles.)

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