

Help for the Common Herper

by Allison Blankenship



Helpful Information for
Herp Keepers Who Don't
Know All the Latin Names
(and for Those Who Do)

Reptile Cage Cleaning 101

[Author's Note: This article focuses on cleaning reptile cages, specifically land turtles, lizards and snakes. Cleaning amphibian and aquatic reptile habitats is fodder for another article.]

We all do it: cage cleaning. It's the inevitable and usually unpleasant chore that goes hand-in-hand with keeping captive reptiles.

Let me guess how it goes at your place. You eye or smell one soiled cage, but you're busy at the moment. You figure that you'll clean it up just a bit later, but you get tied-up with other things. The next day you see that a couple of enclosures are now dirty, so you make plans to do a thorough round of cleaning tonight...or maybe tomorrow. Except the non-herp parts of your life unexpectedly interfere with your well-made plans, so even more time goes by and even more cages get soiled. Now you feel guilty...*really guilty*. So, you promise your reptiles that you're going to devote part of your weekend to the now needed *deep* cleaning. You know, that's when you don your grubby cage cleaning clothes, fill all the spray bottles, and break out the hoses, scrub brushes and the big trash can. Sound all too familiar?

There may be a few readers out there who have mastered the science of efficient cage cleaning and never find themselves in this situation. If you're one of them, then you're a true herp angel and you don't need to read this article. However, if you're one of the masses whose life sometimes interferes with the joys of cage cleaning, then I hope this piece might give you some inspiration or at least a couple of tips to help keep you on top of your cleaning chores.

The Daily Check Up

Nothing will keep your reptile's home more ship-shape than a daily quick clean. You need to schedule a small chunk of time each day to see what needs doing – and then quickly get it done *before* you find a reason to

procrastinate. It's better to clean up poop and spills before they harden into concrete and add all sorts of nasty additions to your herp's habitat. I know this sounds like a daily grind, but trust me, it'll save you tons of work down the line. Here's a simple daily check list:

Daily Cage Check Up

- Remove fecal/urate contamination (scoop substrate or change paper liner or carpet)
- Remove uneaten food and shed skins
- Wash and refill water dish and/or soaking tub

Of course, while you're at it, do the daily feeding, misting, drip system checks, and be sure to check that all lights and heat sources are on and working.

The Importance of Doing the Dishes – Water and food dishes and soaking tubs must be washed and disinfected on a regular basis, at least once a week (and immediately when soiled). Contaminated water is a great place to harbor parasites and bacteria. A slimy water dish can contain some eight million bacteria for every liter of water. If you culture the scum in a water dish that has not been scrubbed and disinfected, you will most likely grow a healthy batch of coliforms (*E. coli*) and *Pseudomonas* bacteria. Not what you want your reptile consuming daily.

The Deep Clean

There are a couple of approaches to the inevitable and required *deep clean*. Your method of attack depends on how much free time you have in one sitting. Some herpers choose to deep clean just a few enclosures each week and keep a rotating weekly schedule. Others choose an all-out blitz, cleaning all their cages in one day. Experts can't seem to agree on the frequency of the deep clean. Some suggest once a week. Others recommend every three to four months or "sooner if odors develop." It's certainly better to err of the side of frequent cleaning --

waiting for odors to develop isn't practicing ideal reptile husbandry. Regardless of frequency, it is important to set a cleaning schedule that you can keep and that empowers you to fend-off that temptation to procrastinate. Your reptiles cannot ask you to clean their house; they depend on you to keep the schedule.

Step 1: Assemble Your Cleaning Kit

Assemble a cleaning kit exclusively for cage cleaning. Store these items separately from your household cleaning supplies and label them "Herp Cleaning" with a marker, so they don't accidentally get used to clean the kitchen counter. And, most importantly, never use sinks or tubs that are used for human bathing or dishwashing.

Cage Cleaning Kit

- Holding bins for animals (temporary housing)
- Substrate scooper and/or sand sifter
- Spray bottle or bucket of freshly prepared cleaning agent (see *Step 3: Cleaning* for options)
- Spray bottle or bucket of freshly prepared disinfectant (see *Step 4: Disinfection* for options)
- Scrub brushes
- Putty knife (for scraping off organic matter)
- Sponges
- Buckets
- Paper towels
- Latex gloves
- Fresh substrate or cage liners
- Trash can with disposable trash bags

Step 2: Empty the Cage

Remove your animal and temporarily relocate it to a holding cage or bin. This is a great time to allow cage-bound animals to get a little fresh air and sunshine or a nice long bath. It's wise to move your reptile to another room to avoid exposure to cleaning product fumes.

Remove all food and water dishes. Remove all cage furnishings and décor. Be careful to not mix-up dishes or furnishings from one cage to another, as cross-contamination can occur. Bag and discard the used substrate (no, don't even think about reusing it).

Herp Tip: Label dishes & furnishings

An easy way to prevent cross-contamination, and keep it all straight while cleaning, is to put the name of the herp or species on the bottom of its dishes and cage furnishings with a permanent marker. No more mix-ups.

Step 3: Cleaning

A thorough cleaning should remove all organic matter from the cage – fecal matter, uric acid and breakdown products, undigested food, blood, saliva, etc. This is a critical part of the process and should not be skipped thinking that you can save a step. Thorough cleaning requires using some kind of soap or detergent or other cleaning agent. Renowned herper, John Rossi, DVM, has used dishwashing detergent successfully for years.

Herp Tip: Simple Detergent Recipe

One of the most popular detergent recipes used by veterinarians is a simple and inexpensive recipe: mix 1 teaspoon (5 ml) dishwashing detergent (such as Palmolive® or Dawn®) and 1 ounce (30 ml) of household bleach into 1 quart of water. Use for all your cage cleaning needs. Be sure to rinse thoroughly.

In preparation for this article, this author polled AAZK (American Association of Zoo Keepers) reptile keepers and asked what cage cleaning agents they use. Besides dishwashing detergents, commercial products such as Simple Green® and TKO® were mentioned as non-toxic options. Other simple household products such as white vinegar, sodium bicarbonate (baking soda) or sodium chloride (table salt) were also mentioned. Susan Barnard, head reptile keeper at the Atlanta Zoo, recommends table salt as a good scrubbing cleanser because it removes mineral deposits and algae. Avoid phenolic compounds (such as Lysol® or Pine Sol®) as they can be toxic to reptiles.

Whatever cleaning agent you select, make sure all organic matter is removed. Use your putty knife and scrub brush to get off those stubborn bits and pieces. To prevent the spread of disease between cages, all tools and sponges, scrub brushes, putty knives, etc. should be dipped or soaked in disinfectant immediately after attending to each cage, and then thoroughly rinsed before using them in another cage.

And, most importantly, rinse, rinse, rinse! The disin-

Reptile Cage Cleaning 101 (continued)

fectants you will use in the next step can be inactivated by organic remnants or by cleanser residue that is left behind.

Step 4: Disinfection

Disinfection is “the destruction of bacteria, viruses and fungi.” It is the most important step in the whole cage cleaning process and is the backbone of a good disease control program. Disinfection can be done by either physical or chemical means.

Herp Tip: Cleaning Tool Dip Bucket

On cleaning day, fill a bucket with a 3-10% bleach-water solution (8 ounces of bleach to a gallon of water is a standard 6.25% dilution) and keep it readily assessable. Simply dip or soak cleaning tools in the bucket between cages and rinse before reuse.

Physical disinfection – Physical disinfection can be extremely effective and includes steam cleaning, boiling or oven baking. Steam cleaning is not commonly used in the herp industry, but probably should be. If you consult a pediatrician about disinfection of baby bottles for human infants, the only method that is recommended is steam sterilization, yet we think nothing of using chemicals for herps. Bird keepers widely use steam cleaning machines to blast away debris and contaminants on avian enclosures. Herp veterinarian Margaret Wissman, DVM, owns and uses a steamer on her cages and highly recommends them. (This author just got inspired to get out the steamer and give it a try.) Boiling is also a highly effective means of disinfecting rocks, stones or other heat-resistant cage furnishings -- simply clean the items and boil them for 30-minutes. Oven baking is the best way to kill any free-loading pathogens or fungal spores on wooden cage furnishings or branches – bake them at 250°F for 1-hour to disinfect them between uses.

Chemical disinfection – The more traditional approach in herpetoculture is to use chemical disinfectants. The most commonly used, the cheapest, and one of the most effective disinfectants for reptile cages is a 3-10% solution of plain old household bleach (1-3 ounces per quart of water).

There is also an abundance of commercially manufactured disinfectants available; most were originally produced for the dog/cat or human healthcare industries. The chemical compounds used in each one are very different and the pros and cons of each one for reptile use deserve a thorough and lengthy discussion; too lengthy to cover here (but good subject matter for another article). Suffice it to say, the AAZK keepers polled had some favorites. Each is widely available at feed stores, veterinary offices and online: Betadine®, Nolvasan®, Roccal-D®, and Quatricide®.

All of these disinfectants, including the bleach solution, require a minimum of 10 minutes (the longer the better) direct contact time in order to be effective. So, cages and furnishings must be thoroughly doused or submerged and have direct contact with the disinfectant for a minimum of 10 minutes -- this definitely adds to your



Antiseptics, bleach, dish soap— but no phenols!

cleaning time. And, most importantly, all of these disinfectants require LOTS of rinsing. Hot water is best, but a garden hose will do. When in doubt, rinse some more. All traces of these disinfectants must be thoroughly rinsed away or your favorite reptile could become ill from the remaining chemicals. Some experts recommend a couple of hours of drying time in the sunshine to allow any residual fumes to dissipate, which is a wise suggestion if you have the luxury of time to do it.

Also reported by a couple of reptile keepers was a disinfectant/cleaner which claims to kill a broad spectrum of bacteria, viruses and fungi and whose no-rinse formula is touted for its residual protection: A-33 Dry®. Although this author was unable to find any definitive literature which claimed the safety of this product (or any

of the above commercial disinfectants) in reptile care, its one-step ease of use has earned it a place in some zoo's reptile departments.

Step 5: Putting it All Back Together

Allow the cage and all furnishings to dry thoroughly to reduce the possibility of mold developing. Reassemble your cage by starting with a fresh cage liner or a new bag of substrate. Be sure to sterilize the substrate with heat before use to prevent the introduction of new pathogens or parasites into your now clean cage.

Herp Tip: Bake Your Substrate

To sterilize a new bag of substrate before using it, spread it on a cookie sheet and oven bake at 250°F for 1-hour. This is the perfect prep step for mulch, potting soil, sand or sphagnum moss and should kill most pathogens, parasites and fungal spores.

Now, put it all back together, the furnishings, water dishes, etc. and reintroduce your reptile to its sparkling clean, fresh smelling home. Did you see that smile?

Lastly, be sure to thoroughly clean and disinfect all your cleaning equipment, buckets and sinks. Sponges, towels, snake bags and other porous cleaning materials may be sterilized by soaking in a 5% ammonia-water solution (a little less than 2 ounces of ammonia per quart of water) for 30-minutes in a well-ventilated area away from animals. Then wash in hot soapy water and dry.

Hygiene and the Herper

In an earlier issue of CTH (February 2005), I beat to death the subject of preventing salmonellosis. So, I won't preach on the subject here, except to remind you that most experts recommend the use of disposable latex gloves when cage cleaning and handling fecal and organic waste. Harmful bacteria can enter your body through an open cut or sore. Most herpers, however, don't use them (it must be the "herper image" thing). If

Herp Tip: Hand Rinsing Bucket

John Rossi, DVM, recommends keeping a bucket with a mild solution of bleach-water in your herp room. Before you go from one cage to another, wash your hands with soap and water and then rinse your hands in the bucket. Change the bleach-water daily. This will control any chance of cross-contamination in your collection.

using gloves, change them between cages to prevent cross-contamination. If going bare-handed, then thoroughly wash and disinfect your hands between cages and take your chances.

Would you want to live in that cage?

Reptiles rarely come into contact with their own feces or spoiled food in the wild. In captivity, our goal should be to minimize this contact and the chance of spreading disease when it occurs. The health of your reptile in captive care is totally dependent on the cleaning care you provide for it. Ask most reptile vets and they'll tell you that most, if not all, of the reptiles they treat are ill due to the owner's poor herp husbandry skills. Take a look at your cages right this minute – would you want to live in that cage? That alone should be motivation enough for you to step up your cleaning routine. So, what are you waiting for? Roll up your sleeves, crank up the tunes, and start scrubbing – it's a dirty job, and no one else is going to do it.

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