



Relative humidity is important for many tropical species such as green tree pythons.

high, even when set to the lowest setting. So this model needs a dimmer. Its tank is smaller than the Sunbeam model, so I prefer the Sunbeam.

To modify a humidifier, take a piece of PVC which is three inches (7.6 cm) long and three inches (7.6 cm) in diameter, and using Super Glue® (cyanoacrylate) and then silicone sealant or hot melt glue, attach the PVC to the output of the humidifier. Attach the four inch (10 cm) dryer vent tube (it costs about \$1 per foot at hardware stores) snugly to the PVC with a #64 rubber band. I attach another three inch (7.6 cm) or four inch (10 cm) long piece of three-inch diameter PVC to the other end of the tube, using a rubber band or glue.

The top vents in my cages consist of four inch (10 cm) round PVC vents. So I just stick the end of the dryer tube with the attached PVC into the vent in the top of the cage, and it's held in place by gravity. Of course if you want the flow to come in through the side of an enclosure, you'll need to devise some way to connect the end of the dryer tube to a side vent.

A humidity gauge inside the enclosure will help determine proper humidity. By adjusting the dimmer switch and timer, varying degrees of humidity can be achieved constantly or for part of each day. Alternatively, Helix Controls is producing a humidity control which I assume will mate well with an ultrasonic humidifier.

Humidity is an important variable in maintaining an acceptable environ-

## Disinfecting Equipment from Reptile Enclosures

**Cleaning** is the first step. Remove all foreign material, including bedding, feces, shed skin, blood, and gross fungal and bacterial growth. This step cannot be skipped, as organic materials may counteract the effect of many disinfectants. Cleaning is normally carried out with water, mechanical action, soap or detergents.

**Disinfection** is a process that reduces or completely eliminates all pathogenic (disease causing) microorganisms except spores. Disinfection is not sterilization, which is the destruction of all microbial life. In herpetoculture, disinfection is usually carried out with the use of liquid chemicals. These can be sprayed or wiped on surfaces. Alternatively, objects can be immersed.

The main disinfectants used in herpetoculture are chlorine compounds (bleach), quaternary ammonium compounds, phenolics (hexachlorophene), chlorhexidine, alcohol, and iodophors (povidone-iodine).

**Bleach** (sodium hypochlorite) is the most commonly used disinfectant. A 1:20 dilution with water will kill most bacteria, fungi, and viruses in a few minutes. Care must be taken as mixing bleach with acid or ammonia will result in the production of toxic chlorine gas.

**Quaternary ammonium** compounds are less toxic than bleach and have a good detergent action. They don't kill bacterial spores and some viruses. Quaternaries are a less toxic alternative to bleach.

Newer **phenol** derivatives like hexachlorophene are commonly used disinfectants which kill most bacteria, fungus, and viruses. They are frequently combined with detergents and used for cleaning and disinfecting in one step.

**Alcohol** is a very effective disinfectant. Ethyl alcohol (Jack Daniels, Stol, etc) is more broad spectrum than isopropyl. It kills almost everything but bacterial spores in seconds. Its use in herpetoculture is currently limited to rapid hand disinfectant gels. Because concentrations of at least 60% are necessary, it's fairly expensive for general use.

**Chlorhexidine** is used as a disinfectant. However, many viruses and bacteria are resistant to it.

It is important to remember that disinfection is not instantaneous. Any disinfectant used must be left in contact with the surface being disinfected for a certain minimum amount of time. Follow the instructions supplied with the product. Adequate rinsing of items being disinfected is important as some agents can have toxic effects in herps.

ment for many herps. I believe my experience with ultrasonic humidifiers, mainly with chondros, can be applied to many other species.

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### GET WELL SOON ANDREW!

*The Vivarium* was just informed that Andrew Luck, a 20 year-old herpetoculturist and motorcycle enthusiast was seriously injured in a traffic accident. Andrew has a passion for reptiles and is a great supporter of *the Vivarium*. He remains in a coma. Our hearts and prayers go out to him.