

The Inland Bearded Dragon

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By Kevin Dunne

The inland bearded dragon (*Pogona vitticeps*) is one of the best pet lizards in the world. These medium-sized agamids from central Australia are robust, hardy, docile and relatively simple to keep and breed in captivity. In the last decade, bearded dragons have become one of the all-time most popular reptiles among pet owners, hobbyists and breeders. They now make up a large percentage of all of the reptiles kept as pets in the United States and abroad.

About Beardies

Inland bearded dragons (or "beardies") are just one species of the genus *Pogona*, a group of terrestrial and semiarboreal lizards characterized by their robust bodies, triangular heads and spiny scales. There are several other members of this genus, all sharing the common name "bearded dragon," and most parts of Australia are occupied by some species of *Pogona*.

The name bearded dragon refers to the large pouchlike area of the animal's throat, which extends outward and looks like a spiny beard. In some *Pogona* species, the beard can be displayed as a defense mechanism or as a means to assert dominance.

In addition to *P. vitticeps*, the genus *Pogona* contains *P. barbata*, *P. henrylawsoni*, *P. microlepidota*, *P. mitchelli*, *P. minor* and two to four other species, depending on who you ask. Of these, *P. vitticeps* is the one most often encountered in the pet trade. The eastern bearded dragon (*P. barbata*) and Rankin's dragon (*P. henrylawsoni*) are kept in much smaller numbers and are far less established in captive-breeding programs.

In their natural habitat, the arid interior deserts and open woodlands of Australia, bearded dragons can be found perched on fence posts and fallen logs, or basking on rock piles. They often bask in the morning and midday sun, and then retreat to shaded areas during the hottest part of the day.

Wild bearded dragons consume a variety of insects, spiders and even other lizards. They also eat plant material, both leaves and flowers. They seem to be particularly attracted to brightly colored plants and flowers.

One of the reasons that bearded dragons do so well as pets is their hardy, durable nature. In the proper environment, bearded dragons can grow at amazing rates. They can reach an adult size of 18 to 22 inches in less than a year. It is not uncommon for an adult beardie to weigh over a pound during the first year, and some impressive specimens attain weights of nearly 2 pounds when fully grown. Add their prehistoric appearance and friendly nature, and you have a reptile that even the most experienced herper can appreciate.

Many Morphs

Most of the bearded dragons found in the wild are fairly drab in color, usually shades of dull brown, tan and gray. Years of captive breeding have produced various shades of red, orange and yellow. Now it is not uncommon to see brightly colored specimens offered for sale. Well-known among beardie fans are the deep orange bearded dragons produced by Bob Mailloux at Sandfire Dragon Ranch and marketed as "Sandfire dragons." Most, if not all, of the other bearded dragon color morphs share some ancestry with the Sandfire dragons, although many breeders have added their own colorful names to the mix. Three that are produced at my breeding facility include the sunburst, blood and snow dragons.

The snow dragon is a hypomelanistic variety of bearded dragon that I first obtained in 1997 from a customer named Matt Lanza. Hypomelanism refers to a reduction of melanin, the pigment responsible for making dark skin tones. A hypomelanistic animal appears much lighter than the normal wild variety. Hypomelanistic beardies can be pale shades of pink, yellow, peach, lavender, caramel and, in extreme cases, white. "Snow dragon" is what we call the hypomelanistics that are nearly all white.

The hypomelanistic trait has proven to be a valuable component in many breeding projects. When bred to other more colorful animals, the offspring tend to show good color but with reduced dark areas. This is how one of my most spectacularly colored dragons - the salmon hypo - was created.

We created the sunburst bearded dragons by breeding a nicely colored yellow male with a pale yellow (hypomelanistic)

female. At the time, there were not many yellow bearded dragons available. My goal was to produce good-looking, yellow offspring from this pairing. Surprisingly, only a few yellow babies resulted, but there were also six bright-red babies in the same clutch. These red juveniles became the founder stock for the "blood dragon" line. It took a few years of collecting other red dragons and outcrossing them to the blood dragons before I would have enough healthy specimens to offer for sale. Even now, the blood dragons will produce a bright yellow baby from time to time, reminding me of the awesome yellow male that they originated from.

Making the Purchase

There are several options to consider when purchasing a bearded dragon, each with its own pros and cons. Pet stores, private breeders, reptile expos, the advertisers in REPTILES and online classified sections are all sources for pet dragons. Your local pet shop probably has a few beardeds for sale and is an easy place to look at an animal before deciding to buy. Pet shops also carry the necessary cages, lights and accessories you need to properly house your dragon, although the selection of animals is sometimes fairly limited. Reptile expos are another alternative. At expos, you can find everything you need, and the selection is much more varied. Also, because most reptile expos have several vendors selling similar items, the prices may be reduced.

Private breeders also offer quality bearded dragons. Most breeders have Web sites showing pictures of the various types and colors of animals that they have available. Naturally, you should do a little research before sending money to a breeder you have never met. Additionally, if you order from a breeder who does not live in your area, be prepared to pay \$30 to \$40 to have animals shipped to you.

If you decide to purchase from a pet shop or an expo, make sure to pick a dragon that appears healthy and does not show any signs of disease or malnourishment. Look for a beardie that is alert and holding its head up rather than one that lays with its head and body flat on the ground. A healthy bearded dragon should not appear skinny; it should have a full belly. You should not be able to see the hip bones protruding from the base of the lizard's tail.

Look for eyes clear of mucous and debris, and there should not be any sunken areas on the top of the dragon's head (sunken areas are a good indication that a dragon is dehydrated). Inspect the animal's vent area. If you see a swollen vent smeared with feces, this may be a sign of intestinal parasites. If several dragons in the enclosure appear sick, chances are that all have been exposed to the same illness, and they should be avoided.

Beardie Houses

There are many ways to house a bearded dragon, but all enclosures should contain the same basic components. While hatchlings and juveniles can be housed in small, 10- to 30-gallon terrariums, the minimum size enclosure for a pair of adult bearded dragons is 21U2 feet by 3 feet. I recommend an extra 2 square feet of space for every additional adult. The most common enclosures for juveniles are the aquarium-style glass cages with an aluminum screen top. Do not keep a baby or juvenile dragon in an adult-sized enclosure; younger animals are often overwhelmed by the large space and can have difficulty finding their food items, water bowls and basking spots.

Juvenile dragons can be kept in small groups, as long they are similar in size. As the animals grow, the number of dragons in the group needs to be adjusted according to size. When they reach maturity, male bearded dragons will often not tolerate the presence of another male. Watch for aggression between males as they reach the 12- to 14-inch mark and separate as needed. As adults, beardeds can be kept in groups consisting of one male and several females.

I recommend play sand, also known as sandbox sand, as a substrate. Sand is cheap, easy to clean and gives the enclosure a natural appearance. Many people say that sand should be avoided because it causes impactions if ingested, but I have been using some form of sand for more than a decade and have not had any problems that I could attribute to it. Everybody has their own substrate preference, and other choices include newspaper, paper towels and sand/soil mixtures.

I believe if a bearded dragon gets an impaction, it is due to a narrowing or irritation of the intestinal tract caused by a high parasite load. Bearded dragons can host a variety of organisms, and there is ongoing debate about how many are necessary for normal digestion and at what point they become harmful.

Everybody agrees on one thing: The cleaner the cage, the less likely your dragons will suffer from an overabundance of parasites. Sand should be sifted daily to remove any fecal matter. Soiled paper towels should be removed immediately, and water bowls need to be changed daily. If you keep your dragon's environment clean, the chance of disease is greatly reduced.

Cage furnishings can be simple or elaborate, but I believe that less is better when starting with baby or juvenile bearded

dragons. A young dragon seems to do better when it can see all areas of the enclosure from any position. A couple of necessary items include a basking spot and a water bowl.

Bearded dragons are fairly intelligent, and most quickly learn to drink from a shallow bowl if one is provided. I prefer this method to spraying water on the dragon because the spray often wets the substrate and raises the humidity too much. A basking spot can be a piece of wood, a mound of dirt, a rock or a cinder block. If you use a rock, be sure that it is resting solidly on the bottom of the cage and not just on the top of the substrate. Bearded dragons are natural diggers, and they can easily burrow under a rock and scrape all of the sand away and end up being crushed.

Heating and Lighting

Bearded dragons, like all lizards, are ectothermic (cold-blooded) and require sufficient temperatures to perform normal body functions. "Cold-blooded" means they can't generate their own body heat and therefore must rely on outside heat sources for warmth.

There are a few important things to consider when creating a basking spot. By providing an enclosure with a hot side and a cool side, you let the dragon choose a comfortable temperature depending on its needs. The hot side should include a basking area that has a surface temperature of approximately 110 degrees Fahrenheit. This should be the temperature of the surface in the hottest portion of the enclosure, not the air temperature.

A basking area can be created by using a spotlight, a ceramic heat lamp or an undertank heater. Make sure it is located on one side of the enclosure and not in the center. This will allow the other side to serve as the cool side, and the dragon can thermoregulate as needed. Remember, bearded dragons are desert dwellers that often encounter daytime temperatures of 90 to 100 degrees or more, with ground temperatures that are significantly hotter. I have observed beardies basking on surfaces with temperatures in excess of 135 degrees, but I have learned that such high temperatures are not necessary nor are they recommended.

Bearded dragons can easily tolerate a nighttime temperature drop into the 60s. However, if your dragons are housed in an area that gets too cold at night, keep their enclosure warm by using an undertank heat pad or a ceramic heat bulb.

Bearded dragons also need exposure to ultraviolet light (UVB), similar to that produced by the sun. Without the benefit of UVB, desert lizards cannot effectively utilize the calcium in their diets. UVB, either from natural sunlight or from a specialized light bulb, allows the dragons to produce vitamin D3, which is necessary for the absorption of calcium. Be sure to use a quality UVB bulb made specifically for reptiles (the grow lights intended for plants are not sufficient), and be certain that your dragon can get close enough to the bulb to benefit from its presence.

If you are using fluorescent tube lights, the bearded dragon should be able to remain 8 to 14 inches from the bulb. Recently, mercury vapor bulbs have been developed that produces both UVB and heat. This type of bulb is a good choice for enclosures that are more than 16 inches tall because they produce more UVB and project it a greater distance.

There are many UVB lights on the market. I have used Zoo Med's ReptiSun 5.0 for a few years, and I have had excellent results with it. In the larger and taller cages, I use Zoo Med's PowerSun mercury vapor bulbs, because the UVB emitted easily reaches the dragons resting on the bottom of the cages. The UVB/heat bulbs are popular, because they eliminate the need for a separate basking light. This should be positioned on one side of the enclosure so the lizards can still thermoregulate. Be sure to follow the manufacturer's advice and replace as recommended to ensure your lights continue to provide adequate UVB.

Set all lights up on an appliance timer so they turn on and off on a regular schedule. I recommend setting your timer so the lights are on for 14 hours and off for 10 hours each day. A regular, uninterrupted night cycle is necessary for a dragon's health and psychological well-being.

Feeding Time

Healthy bearded dragons are voracious feeders, and juveniles can grow at remarkable rates. Babies should be fed small, quarter-inch crickets dusted with a quality calcium/vitamin D3 supplement. I feed babies as much as they will eat a few times a day for optimum growth. As the young dragons grow, the size of the crickets should be increased accordingly. A good guideline is to feed your dragon crickets that are roughly the length of the distance between the dragon's eyes. Be careful not to feed your bearded dragon prey items that are too large, as these can cause serious damage to hatchlings and juveniles.

Beardies can be fed mealworms (*Tenebrio molitor*), wax moth larvae (*Galleria mellonella*), superworms (*Zophobas morio*) and a variety of roaches, all in moderation and of appropriate size. Bearded dragons also consume various types of plants

and vegetables. They should be fed a variety of vitamin-rich leafy greens, such as mustard, dandelion, turnip tops, kale, collards and arugula. Offer variety so your dragon will get a good balance of the nutrients contained in several different greens.

Breeding Beardies

Bearded dragons reach sexual maturity at an early age, and females often lay eggs before they are 1 year old. A sexually aggressive male often bobs his head up and down in a rapid, jerky motion. In addition, his beard may turn dark black. A female may respond by slowly waving one arm in a circular motion, or she may try to run away. A male will circle a female, bite her on the back of the neck and hold her in place as he lifts her tail with one of his hind legs. With the female's tail lifted, the male can align his cloaca with hers and insert one of his hemipenes from the side.

The entire process may be over in less than a minute, and though it may look rough at first, if you didn't see it you would not even know it occurred. Females usually lay their eggs within three to five weeks of a successful mating.

Gravid females will be noticeably heavier, and eggs may be seen protruding from the sides of the abdomen. A female is ready to lay her eggs when you see her scratching at the corners of the enclosure. At that time, she should be placed in a large blanket box or plastic tote with 12 to 16 inches of slightly moistened dirt. The dirt should be just moist enough (not wet) so it won't collapse when the female digs her nest. The female digs a tunnel with a chamber at the end and deposits eggs before burying the entire nest. Typical clutch size is 20 to 25 eggs, though 30 or more is not uncommon. (Females often lay two or three times a season, and I've had females lay as many as seven times in a single season.)

Once she is finished burying the nest, remove the female and carefully excavate the eggs. Place them in moist vermiculite in a plastic shoebox, and incubate them at a temperature of 82 to 86 degrees Fahrenheit. The eggs usually hatch after an incubation period of 55 to 70 days, depending on the temperature.

To a reptile keeper, few things can compare to the excitement of looking in an incubator and seeing 20 or 30 tiny babies during their first few days of life. I have actively bred bearded dragons for more than a decade, and I still feel like a child on Christmas every time a new clutch hatches.

If you decide to keep bearded dragons as pets, I highly recommend that you allow them to breed so you too can feel the elation that comes with your first successful hatch. I have used bearded dragons to educate children as well as adults, and the dragons left a lasting impression on every person who held one in their hands. Since I was a child, I have kept many different types of reptiles, and I can honestly say that bearded dragons really are among the best pet lizards in the world!