

# General Care and Breeding of Roaches of the genera *Blaberus*, *Blaptica* and *Eublaberus*

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## INTRODUCTION

For those who maintain large collections of invertebrates [or insectivorous reptiles and amphibians] the repeated purchase of crickets becomes extremely expensive and inconvenient. Crickets also attract and carry pests, especially when they die within the vivarium. I'll admit my bias right from the start – I hate crickets. One reason is that over the years I have developed an allergy to them that causes itching, rashes, sneezing and irritation of the eyes and nasal passages. If I make the mistake of touching my face after handling crickets my eyes swell and turn very red and itchy. What makes crickets even less appealing to me is that they have a short life span and tend to die quickly in the vivarium when deprived of food. They have a foul odor and attract tiny flies and other nasties. Also, they may chew on the animals they were intended to be prey for and have caused deaths, particularly in molting tarantulas.

Raising exotic roaches to provide a self-perpetuating food source for invertebrates is increasingly popular. A successful roach colony will contain hundreds or even thousands of roaches ranging in size from tiny nymphs to adults. Therefore, one roach colony can produce prey items for arachnids of all sizes. The newborn nymphs of the three genera covered in this article can be offered to all but the smallest tarantula spiderlings or other small arachnids. [I use *Nauphoeta cinerea* nymphs for tiny spiders and scorpions, but this small glass-climbing roach will not be discussed here].

Another benefit of using roaches is the savings. Most roaches can subsist on table scraps, overripe produce, and dog or cat kibble. After the initial investment in the colony and its housing and heat source the only cost becomes a little time here and there for maintenance. If you're ready to say goodbye to the cost of crickets and their other undesirable aspects, please read on!

## ROACH INFO

A thorough discussion of roach biology and ecology is beyond the scope of this article. If you are interested in learning more about roaches there are numerous websites and several forums and listservs to investigate. I also highly recommend Orin McMonigle and Richie "Roachman" Willis' *Allpet Roaches* [Elytra & Antenna, 2000].

## THE BASICS

The three genera covered here, *Blaberus*, *Blaptica* and *Eublaberus*, are the most popular among keepers of tarantulas and other arachnids. Unlike the well-known "Madagascan Hissing Roach" [*Gromphadorhina portentosa*], members of these three genera cannot climb glass or other smooth surfaces. This makes their containment and maintenance much easier. Glass-climbers require a messy barrier of petroleum jelly liberally applied around the top two inches of the housing to prevent their escape.

*Blaberus*, *Blaptica* and *Eublaberus* produce living young. Females produce an eggcase [ootheca] externally and then rotate it and draw it back into the body. This eggcase has a thin membrane and cannot survive outside the body for long. Any eggcases deposited on the substrate have been aborted and will not produce young. Aborted eggcases are typically the result of stress due to overcrowding, low temperatures or improper diet. The amount of time the female carries her ootheca varies from species to species and may be as long as eight or nine months in some.

**TABLE 1 THE ROACH SPECIES RELEVANT TO THIS ARTICLE**

genus	species	common name	adult size	comments
<b>Blaberus</b>	<i>craniifer</i>	"Death's Head"	up to 2.25 in [55 mm]	characteristic orange-red "evil smiley face" on pronotum and dark, almost black wings
	<i>discoidalis</i>	"Discoid" or "False Death's Head"	up to 1.75 in [45 mm]	perhaps the best and most popular species to raise as a food source; often mistakenly identified or sold as <i>B. craniifer</i>
	<i>fusca</i>	"[Dwarf] Cave"	up to 2.5 in + [65 mm +]	still fairly uncommon
	<i>giganteus</i>	"Giant Cave"	up to 3.5 in [90 mm]	slow breeder; needs soft rotting wood and leaves, as well as fruit, in its diet; grows longer than "Hissers"; one of the longest roaches in the world
<b>Blaptica</b>	<i>dubia</i>	"Argentinian Orange-spotted"	up to 1.75 in + [45-50 mm]	needs plenty of fruit to prevent aborted eggcases
<b>Eublaberus</b>	<i>distanti</i>	"Six-spotted"	up to 1.75 in + [45-50 mm]	still fairly uncommon
	<i>prosticus</i>	"Orange-head"	up to 1.75 in [45 mm]	needs extra protein, will chew on each others' wings; will also eat slow-moving soft-bodied insects alive

## HOUSING

Although glass aquaria and similar enclosures can be used to raise roaches, here we will focus on the bucket cage and the tub. These containers are much easier to modify for successful roach breeding. A bucket cage is made from a 5 gallon bucket or a small round trash can, while the tub cage is constructed from large, deep and opaque storage containers such as the Rubbermaid™ 2040 tub. Regardless of what style of enclosure is used a choice will have to be made with regards to substrate, climbing surfaces and heating.

Potential substrate choices include Beta Chips® hardwood chips, aspen shavings, vermiculite, soil and fallen leaves. Some keepers who wish to have very clean cages use no substrate at all. However, I recommend against this practice as substrate provides shelter and some degree of protection from desiccation. Some substrates, especially decaying leaves, will also provide food when necessary. I personally use Beta Chips®, which are heat treated small hardwood chips used for mammals housed in a laboratory, zoological park or commercial breeding operation.

By far, the best climbing surface and shelter is provided by nested cardboard egg cartons. I purchase mine from eggcartons.com, but you might be able to find a local grocery or farm that would be willing to give you some.

Heat may be provided from above with red incandescent bulbs or ceramic heat emitters fitted into a reflector fixture or from below with heat mats or tape designed for reptiles. Heat mats are more efficient than heat lamps and allow for stacking of enclosures. Small reptile heat mats are available that have an adhesive backing and may be applied to the side of the bucket or tub instead of underneath to further facilitating stacking. Although roaches will live at room temperatures, successful breeding is dependent on warmth. To maximize production I recommend temperatures of 85-90°F with a nighttime drop of 5-10°F if desired. I know of one roach breeder whose housing area reaches 100°F in the summer and he claims to have increased production at that time!

## The Bucket Cage

Similar buckets or cans may be used, but here we will focus on the five gallon bucket with tight-fitting lid. There are many places that you can scavenge used buckets, but I prefer to buy nice clean buckets from a home center. Ventilation is provided by cutting holes or squares in the lid and on opposite sides of the bucket. If you intend to heat with a bulb in a reflector you will want to cut a hole a half-inch or so larger than the diameter of the reflector. This is necessary to ensure that the plastic of the bucket is not melted by the heat. The use of the smaller 5-6 inch reflector will allow for plenty of room. The ventilation holes are then covered with screen affixed with hot glue or silicone aquarium sealant. If using a heat lamp at the top I recommend fastening fine metal screen to the inside of the lid and using quarter-inch steel mesh on the outside where the fixture will rest. The heavier mesh may need to be fastened using small bolts with washers. The side ventilation openings are covered in a similar manner using the fine metal screen on both the outside and inside. If you are able to obtain micro-screen from a biological supply house I recommend using that on the inside instead to prevent pest flies from entering the enclosure.

## The Tub Cage

I personally like to use large plastic storage tubs that are heated from below. I use opaque Rubbermaid™ tubs that are several inches taller than a 12-inch square egg carton on end when it is resting upon the substrate. A ventilation square is cut out of the top with a sharp utility knife and several 1.5" holes are drilled in the sides with a hole saw. These ventilation ports are covered as described above. That is, metal screening affixed by hot glue or silicone covers the outside of the openings and identical screen or, better still, microscreen is used to similarly cover the inside of the openings. If flies become a problem and you cannot find microscreen you can tape a single layer of paper towel or mosquito netting over the inside of the openings. Make sure that any other holes are blocked – many tubs have a drain hole in the molded handles.

I place 2-3 inches of Beta-Chip® into the cage and then vertically stack five 12-inch square egg cartons by leaning them slightly against one end. The egg cartons need to be alternately reversed so that they don't nest together readily. Egg cartons have two sides with a pattern of valleys where the eggs rest and raised peaks in between. If identical faces of two cartons are placed face-to-face they will stay separated, whereas if the opposite face is used they will nest just the way they are stacked when shipped. In the past I have gone as far as building wooden frames to tightly hold the five layers of carton in the proper position with no danger of nesting even if the tub is jostled. As neat as this can make things, I eventually abandoned the idea because I prefer the convenience of easier access to the roaches.

At the opposite end of the tub I place a dry food dish and a shallow flower pot saucer of water mostly filled with fine gravel. Ideally the food and water should be opposite ends of the cage, but that would require framing the cartons in the center in a manner such as described above. Also, I prefer to have the food and water away from the heat, which runs underneath the tub towards the other end. Fresh fruits and vegetables can be offered on small paper plates or just laid upon the substrate.

Heat is provided by either Thermotronics or Exo-Terra Heat Wave heat mats or 4" Flex-Watt style heat tape running along the back of the shelf the tub sits upon. The heat source is regulated by an ESU Reptile Electronic Thermostat [RP235] and monitored by an ESU Reptile Mini Digital Thermometer. The thermometer and thermostat external probes are taped together and descend into one of the roach tubs. The thermostat is set to shut off the heat at a temperature of 90 F [as registered by the thermostat probe at substrate level of the heated end of the tub and verified by the thermometer].

## WATERING AND FEEDING

Dry dog and cat kibble [especially cheap dog food with flavoring and sugar] supplemented by a variety of fruits and vegetables is a good diet for captive roaches. Inexpensive tropical fish flake food is also a good addition to the diet and is easy for tiny nymphs to eat. I offer my roaches a custom blend of ground dog kibble, ground unmedicated chick mash, mixed dry baby cereal, fish flake and bran. Fruits and vegetables given include bananas, apples, oranges, berries, potatoes, leafy greens, zucchini, squash and carrots. If you raise a lot of roaches, or if leftovers from your own cooking cannot supply these items, I recommend finding a local market or produce shop and asking to buy the produce that becomes undesirable to the consumer due to bruises, overripeness, etc. at a discount.

As mentioned in the above table, some of the species covered by this article have specific dietary requirements. *Eublaberus prostaticus* will chew each others' wings – sometimes completely off – especially if deprived of abundant protein. It is important to have dog food available to these roaches at all times. Some keepers use ferret food instead due to its much greater percentage of protein. *Blaberus giganteus* should be offered soft

rotting wood and leaves as well as plenty of fruit. Finally, a diet including a great deal of fruit is necessary to prevent aborted eggcases in *Blaptica dubia*.

Fresh water should be available at all times. Polyacrylamide gel water can also be used. Water can be provided in a shallow dish filled with gravel and set level with the substrate or by using an inverted jar chick waterer such as that marketed for crickets by Armstrong Crickets. The use of sponge or foam should be avoided as it quickly becomes a breeding ground for bacteria and a stinking mess!

Fresh foods or moldy dog kibble should be immediately removed. Ideally, fruits and vegetables should only be left in the cage for several hours or so, but I tend to feed the roaches as the last thing that I do before going home and remove the leftovers the first thing the following morning.

## **MAINTENANCE**

Roach cages can go a long time without cleaning as long as leftover and spoiled food is removed immediately and completely and water is not spilled. Roach colonies have minimal odor – any stench is usually the result of spoiled food or fouled water. I often do not clean a roach cage more than once or twice a year. I recommend moving all of the adults and many of the nymphs into a clean cage and then allowing any small nymphs to grow in the original cage for a month or so to make transferring them much easier. At the same time the number of small nymphs can be reduced by using them as feeders as much as possible. Picking tiny nymphs out of the substrate is very labor intensive.

## **SEXING**

Being able to identify male and female roaches is not only important to ensure there are plenty of each in the colony, but also so that if you choose to feed an adult roach to an arachnid you select a male instead of losing a potentially “gravid” female. Males are typically smaller than females and have longer wings. *Blaptica dubia* adults can be easily sexed as the males have long flying wings whereas the females have only small outer wings. The other roaches covered here can be most reliably sexed by viewing the ventral surface of the abdomen. The last abdominal segment [sternite] of the female is broader than the other segments, whereas it is the narrowest in the male. That is, turn a roach over and look at the underside of its abdomen – there are a number of segments. Look at the last one, the “rear end” – in a female it is much wider than the rest of the segments and in a male it is narrower.

## **BREEDING**

There are no special tricks to breeding roaches, although population densities that are high without being overcrowded seem to contribute to better production. All you need is a good number of adults of both sexes, a cage set up and heated as described in this article and a good varied diet and the roaches will breed like... well, roaches!

## **THE "OTHER" ROACHES**

There are many species of exotic roach available to the hobbyist. This article covered only those that are most popular as prey items and that cannot climb smooth vertical surfaces such as glass. I avoid glass-climbers with one exception: I do raise the “Lobster Roach” [*Nauphoeta cinerea*] since its tiny nymphs are of appropriate size for tiny tarantula spiderlings and small true spiders and scorpions [adults of this roach species are the size of an adult domestic cricket]. It also is perhaps the fastest breeding roach commonly used as a food source.