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ARBOREAL TARANTULA CARE & HOUSING

INTRO

Above the ground we live upon exists a whole different world. While most birds, many insects and one mammal are capable of flight, the majority of the creatures that dwell above land inhabit vegetation, from tall grasses and short bushes to the canopy of the highest trees.

The majority of tarantulas live in or on the same ground where humans tread. Most dig burrows into the earth where they are protected from predators and live in a micro-environment often cooler and more humid than conditions at ground level. These species are called obligate burrowers. Other terrestrial tarantulas are more opportunistic and find shelter in burrows or scrapes created by other animals, natural crevices in the earth, or beneath leaf litter, fallen branches and other ground cover. Still other tarantulas have adapted to a lifestyle above the ground.

The arboreal, or tree-dwelling, species have a lighter build with thinner bodies and longer legs with increased tarsal scopulation. That is, their legs are flatter and have thick setae ("hair") on the edges of their metatarsi and tarsi, the last two segments of their legs. This increased surface area at the ends of their legs allows them to effortlessly climb any surface, while their light build gives them increased agility and protects them from falls.

Arboreal tarantulas also differ in habits. Some live in low vegetation such as high grasses, bushes and palm fronds [e.g., *Heteroscodra*]. Others live in the trees themselves, seeking shelter among the foliage including epiphytic plants like bromeliads [e.g., *Avicularia*], or live in tree hollows or holes created by birds or insects [e.g., *Poecilotheria*]. Due to habitat destruction many *Poecilotheria*, the ornamental tarantulas or tiger spiders, are often found living in dead trees.

The specialization of the arboreal tarantulas requires that their captive husbandry be modified from that of obligate burrowing, opportunistic burrowing or terrestrial species. Their housing should be vertically-oriented – tall instead of wide – with retreats that approximate those of their natural habitat. Their habits and reduced tendency to dig or otherwise rearrange their enclosure makes them ideal tarantulas for beautiful naturalistic vivaria with live plants. This care sheet details methods for creating a captive environment appropriate for the care and breeding of arboreal theraphosid spiders.

HOUSING SPIDERLINGS

Spiderling tarantulas have been historically raised in clear 20-50 dram vials or similar containers. Small holes are drilled or punctured into the soft plastic lid for ventilation and, for arboreal species, approximately 1/3 of the container is filled with damp substrate like coconut coir. A climbing surface and retreat is then provided by a sprig of plastic plant or a tiny piece of wood like cork bark. This method is excellent for smaller spiderlings, but the lack of good air flow in these tiny environments requires diligent observation of moisture content. It becomes a balancing act between sufficient humidity without excessive wetness, mold, bacteria and other issues, and there is little room for error. It is very easy to end up with stagnant conditions that is the most common cause of death for spiderlings.



32 OZ INSECT CUPS

small second instar *Avicularia* spiderlings, we use the comparatively large 24 oz. insect cup and fill it 1/3-1/2 with substrate like coco coir

A preferred enclosure for young arboreal tarantulas is the insect-lid style deli cups that are used for raising fruit flies. These have a ventilated lid with large diameter holes that are covered by a soft fabric. This allows for increased ventilation while preventing spider escape or the entrance of pest flies, etc. When using these well-ventilated containers more careful attention must be paid to maintaining sufficient humidity, but the flip side is that they dry quickly and stagnant conditions are usually prevented. Even for

and then add a layer of damp sphagnum moss. The great depth allows for more moisture to be held in the substrate and evaporate over time to create humidity. These containers are available from Superior Enterprise and other sources.

Elsewhere in this care sheet there is mention of the use of beneficial organisms living in the substrate, but in the very small confined space of the rearing container more sterile conditions are necessary. We use a slightly damp mixture of coconut coir [e.g., T-Rex® Forest Bed™, Zoo Med® Eco Earth™] and horticultural vermiculite [3 parts to 1]. Many young arboreal tarantulas will burrow or create a silken tube that continues below the surface. This mix makes it easy for them to create these retreats. We add substrate to a depth of almost 1/2 the container height and tamp it down firmly so that it fills 1/3 of the height. A piece of cork bark is situated vertically in the cage and a small leaf or two of silk plant added. We do not use water dishes in these containers, but rather mist a spot away from the spider once or twice each week so that it may drink from the droplets. (See discussion of feeding and watering below).

HOUSING JUVENILES

Clear plastic half-gallon and gallon jars, such as those made by Rubbermaid®, are excellent inexpensive containers for housing juvenile arboreal tarantulas or adults of some of the smaller species. (Note: The tall and rectangular clear cereal storage boxes can be used similarly, and are also very popular with arboreal tarantula keepers. They conserve on shelf space for those with large collections, and have handy lids with hinged smaller access doors).

Drill several ventilation holes in the lid and use a soldering iron to put several holes about 2 in [5 cm] above the jar bottom and another series about 3/4 the jar height up from the bottom on opposite sides of the container. If you have problems with winged pests such as fruit or phorid flies affix microscreen (available from biological supply houses) with hot glue across the inside each group of air holes. Alternatively, panty hose or similar fabric can be used. Alternatively, you may forgo the air holes placed in the jar sides and simply cut a 2" hole in the lid using a hole saw and cover from the inside with insect screening attached by hot glue. This will not keep out tiny pests, but it will provide excellent air flow. (Note: Aluminum insect screening is only effective against larger pests; microscreen can be obtained from biological supply. As an alternative, panty hose or similar fabric can be used).

The next step is to add enough moderately moistened substrate to come up to about a half inch below the lower ventilation holes. If you are not using side ventilation a depth of several inches is excellent. The author personally uses a 3:1 mix of coconut coir and coarse horticultural vermiculite, but top soil, untreated potting soil, forest soil terrarium mixes, sphagnum peat moss and plain vermiculite can also be used. Many keepers add isopods, wood lice or other "ground cleaners" to the substrate. They will help with prey remnants, fungi, mold, etc. Some dry oak leaves and live moss can be added for both aesthetics and to contribute to the "living soil".



GALLON JAR

If you wish to add a water dish to provide additional humidity via natural evaporation and provide an emergency drinking water source, next use a glue gun to affix a 2 oz [60 ml] condiment cup [e.g., Solo® or Dixie®] about 2/3 the jar height from the bottom, just below the upper ventilation holes. Two cups are needed - one will be glued to the side and become the holder, the other will be the actual removable water dish. After sufficient time has passed to allow the glue to set, add the



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second water dish and put a silk plant leaf or flat rock inside to prevent prey from drowning. Then add the finishing touches – the retreats for the spiders. These are made from bamboo, cork bark slabs or tubes and silk plants. The ratio of one to the other depends on the type of arboreal spider housed. For *Avicularia* use plenty of silk plant and less wood; for *Poecilotheria* and most other arboreals primarily use bamboo and cork bark slabs or tubes and just use a touch of silk plant for decoration. A hollow bamboo piece with a round or oval entrance hole cut in the side is perhaps the ideal retreat for *Poecilotheria* as it resembles the tree holes they naturally inhabit. In between are the half bark/half plant habitats for *Psalmopoeus*, *Tapinauchenius*, *Heteroscodra*, *Stromatopelma*, etc.

This type of jar should provide plenty of ventilation while retaining some level of humidity. It is important to prevent damp conditions and additional air holes should be added as needed to ensure the earth becomes somewhat dry between “watering”. Well-fed spiders with access to fresh water will survive dry conditions quite well, whereas dampness and stagnant air will quickly lead to trouble. You may re-moisten the substrate periodically by either misting or carefully overflowing the water dish when refilling. Misting has gotten a bad reputation in arachnoculture because for most it implies overly wet, stagnant conditions or irritating the spider. However, those are the result of improper or excessive misting. Always avoid spraying the spider and lightly mist the side opposite of it and the water that trickles down the jar rehydrates the substrate. When there are silken tube retreats, such as with *Avicularia*, try to allow droplets to form on the silk if you can avoid direct spraying of the spider.

HOUSING ADULTS

10 GALLON AQUARIUM

Any vertically-oriented terrarium of sufficient size is adequate for housing adult arboreal tarantulas. Before commercially available terrariums like the ExoTerra Glass Terrarium series became readily available in the pet trade, many keepers of larger arboreal tarantulas like large pink-toe species and ornamental tarantulas relied on 10-gallon aquariums that were stood on end and had a modified front constructed to fit what would normally be the top of the aquarium. These may actually be stacked on top of each other three or four high by putting a spacer of 1” styrofoam between the top of the aquarium below and the bottom of the one stacked upon it as illustrated in this photo. We will first examine this method.



moisture loss and cover most of the screen, reducing the hazard of “tarsal claws” becoming stuck in the screen. If your tanks are housed in a humid area it might be necessary to remove some of the tape to provide good ventilation.

A water dish is added in the same manner as for the gallon jar. That is, it is glued 2/3-3/4 the way up one side so it close to a perching spider. It should also be located towards the front door to enable easy access during refilling or cup replacement. However, for the glass tanks you can use All-Glass® aquarium silicone sealant instead of hot glue. Hot glue can still be used and it will allow you to cleanly remove the dish holder if necessary, but eventually the dish will fall because the glue doesn’t bond as well to glass

as plastic.

Coconut coir, tropical terrarium soil mixes, good old-fashioned dirt and cypress mulch are all reasonable substrates. Slope it towards the back so it is shallower in front and doesn’t fall out before the cover (which is now the front) is added. Once again, dry leaves, moss and other forest litter can be added and live or silk plants and cork bark can be arranged as you choose. For *Poecilotheria* the author wedges a 19.75 in [50.2 cm] length of 1.5-2 in [3.8-5 cm] diameter bamboo from bottom to top. An oval 1 inch wide and 2 inch high opening is cut into the bamboo about six inches from the top. (See discussion of retreats above).

The final step is to attach the screen cover, which has already been lined from the inside with clear packing tape except for the door. Electrical tape is perfect for this: it stretches tight and blends in with the frame of the cover and the black plastic molding of the aquarium itself. If the taping is done neatly it will hardly be noticeable. Hold the cover tight against the tank and wrap across the top frame and around the tank until you overlap the entire front again and cleanly cut the tape. Repeat this process around the bottom.

NATURALISTIC VIVARIUM

You may create elaborate vivariums for arboreal tarantulas using tall ExoTerra Glass Terrariums or similar products that are now popular in pet stores. These are particularly useful for the pink-toed tarantulas such *Avicularia* and related genera, which often create silk retreats among bromeliads or other plants and benefit from the natural humidity created by live plants.



Live plants require light, and unlike basic cages containing fake plants, the first consideration with naturalistic vivaria will be the addition of a light source. A variety of plants will do well in low light conditions, but some artificial light will be required to keep any flora alive, including live moss ground cover. Because tarantulas are nocturnal and usually shun bright light, it is best to use small compact fluorescent tubes for lighting and use fixtures small enough to allow a darker area in part of the cage. Expensive high ultraviolet fluorescent tubes designed for reptiles are unnecessary for arachnids, and a number of bulbs available at home centers will be sufficient for lighting and plant growth, including plant and aquarium, “sunshine” or “daylight”, and cool white bulbs. Incandescent bulbs should be avoided as they waste much of the energy in the form of heat, which is often undesirable for tarantula husbandry.

A thorough discussion of using live plants and substrate is beyond the scope of this article. In short, we like to use dirt on the bottom and slope it towards the back of the vivarium. Live plants can either be placed in this soil or left in small pots that will be hidden by the substrate. After adding the plants I cover the soil with a 1/2 in [13 mm] layer of damp orchid moss (sphagnum). On top of the orchid moss base is the third substrate layer – live moss. The orchid moss provides a bedding for

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the live moss to root in and wick moisture. Live moss placed directly on soil usually does not flourish and may die before long. Numerous plants can be used as long as they are rinsed of any pesticides or insecticides. Unless you have a great deal of experience with terrarium plants it is advisable to stick to inexpensive and hardy plants from your local home center. *Sansiveria*, commonly known as the Snake Plant or Mother-in-Law's Tongue, requires a good deal of light, but has sturdy vertical leaves. Bromeliads such as *Neoregelia* or *Aechmea* are good, especially for *Pachistopelma* and *Avicularia* tarantulas. Good plants for lower light conditions include Pothos and Rhododendron.

Other decorations for naturalistic vivaria include those used in basic enclosures, such as cork bark, hollow logs and driftwood. When I collect live moss I also find a great deal of nice hollow limbs covered in moss and lichens. Natural-looking water dishes can be found at reptile shops and, with the help of aquarium-safe silicone sealant, attached to the side of the enclosure in a position where it is also supported from below by a vertical log or bark piece.

FEEDING & WATERING

Feeding and watering are covered together because they are two halves of a very important whole. Nourishment and hydration go hand in hand, and animals of all kinds receive much, if not all, of the water their bodies use from what they eat. Feeding often will all but eliminate the risk of dehydration. A frequent error made in arboreal tarantula husbandry is over watering, whether by soaked substrate, heavy misting or reduced ventilation in an attempt to provide "sufficient humidity". Humidity is a measure of moisture contained in the air, not one of substrate wetting or air exchange. Natural humidity comes from live plants and evaporating water dishes, and hydration comes from food and drink. A well fed spider is a hydrated spider.

Still, every tarantula large enough to have a dish should have one filled at all times. The housing suggestions above describe different ways of providing elevated water bowls for arboreal tarantulas. Only spiders housed in rearing containers need water provided by other means. Misting, when correctly done, provides a simulation of rainfall and allows the spiders to drink from droplets as they would naturally. There are two things to avoid when misting: spraying the spider and saturating the substrate. A light misting that allows droplets to form on the vivarium sides and contents is all that is needed. If the substrate has not dried 24 hours later, the quantity of water used when misting must be reduced.

Arboreal tarantulas will accept most of the standard feeder insects such as roaches and crickets. Catching winged insects, such as katydids and moths, can provide some variety. Many larger arboreal tarantulas will eat lizards (e.g., anoles) and treefrogs, and even descend to the ground to snatch a nestling mouse or rat. As mentioned above, the author is a firm believer in keeping tarantulas hydrated by feeding often. Frequency of feeding will depend on the type and size of prey offered, but we like to offer food, in our case primarily roaches, to spiderlings two or three times a week, juveniles once or twice a week, and adults weekly. In general, spiderlings will accept prey the length of their body once they have molted a few times, but should be offered prey slightly smaller than that for the early instar stages, especially for tiny young like *Tapinauchenius*.

VENTILATION

In an effort to elevate relative humidity many keepers resort to reducing airflow through the vivarium. This is neither good for the spider or any live plants. Moisture can be easily added, but it is very difficult for it to be removed. The use of live plants, full water dishes and appropriate misting will provide natural humidity for tarantulas. Stagnant air with poor ventilation will lead to a host of problems, including mites, flies, fungus and mold. We periodically spray a fair rainfall into our cages, but the substrate is not overly wet the following day. If low humidity is a problem I recommend using a room humidifier to increase the moisture in the air flowing through the vivarium rather than making things wetter within it.

HEATING

Our advice for heating vivaria for arboreal tarantulas is the same as that for all tarantulas; only provide supplemental heat if needed. In other words, having a warm room or closet is preferable than using heat tape or pads to provide heat, and as long as your tarantula is feeding well it is probably warm enough. In fact, in most cases, ambient (room) temperature is sufficient, especially if that room contains some reptile cages giving off their own heat. Generally, the hobbyist will have access to an area that fluctuates from 68-80°F [20-27°C]. If additional heat is required and cannot be provided with a space heater around the cages, heat mats or tape sold in reptile shops can be used, but should be controlled by a thermostat. For vertically-oriented tanks I like the small adhesive-backed mats such as the small or medium Exo-Terra™ Heat Wave Rainforest mounted to the middle of the back of the vivarium.

A BRIEF OVERVIEW OF SPECIES

Spiderling tarantulas are popularly considered to be only for experienced keepers due to their supposed delicate nature when young and their speed and temperament. With the exception of some species of *Avicularia*, arboreal tarantulas are best kept with minimal keeper interaction and no handling. It is true that all species are very quick and some are very nervous. It is also true that some have what is believed to be the strongest of all tarantula venom, particularly the tiger spiders of *Poecilotheria* and their fellow Old World genera *Heteroscodra* and *Stromatopelma*. However, with a few considerations in mind most hobbyists will enjoy keeping these spiders. One is that a cage with a number of good retreats will typically result in a calmer spider that will run to hide rather than stand in defense. In a bare cage a startled tarantula may indeed run towards an exit made by opening the cage, but a well-designed cage will provide security that will be chosen over flight. Another is that servicing a cage should be performed with rubber-tipped forceps. Uneaten food, cast skins, and water cups can easily be removed from a safe distance with this essential tool.

NEW WORLD

Avicularia (and former *Avicularia* such as *Caribena versicolor*) – This genus contains some considerably docile species, such as *A. avicularia* and its form often referred to as "*A. metallica*", and are recommended for beginner arboreal tarantula keepers. Another species that could be considered in this category, and beautifully colored and hugely popular, is *Caribena* (until recently *Avicularia*) *versicolor*, the Antilles Pink-Toe. Although jumpy, they are less so than many other congeners (members of the same genus) and seldom bite when handled gently. Two species that generally have a more defensive nature and might very well bite are *Avicularia braunshauseni* (recently treated as a race of *A. avicularia*) and the dwarf Puerto Rican species *A. laeta*. *Avicularia* are commonly referred to as "Pink Toes" or "Avics" and a number of species are available in the hobby including the technicolor *A. versicolor* and the big, woolly *A. huriana*. These spiders form silken tube retreats, often among vegetation, and quickly make nests in their cages. *Avicularia* spiderlings are usually easy to raise with the most common mistake being keeping them too damp. *Avicularia* may quickly dehydrate, but if they are fed often this risk is all but eliminated. A quick shower of a few droplets onto their silk retreat once or twice a week is recommended as well, but care must be taken to prevent constantly damp substrate.



Caribena versicolor
(formerly *Avicularia versicolor*)

Iridopelma – This genus contains three species. *I. hirsutum* is the one most prevalent in arachnoculture, but it is far from common. Care

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and habits are similar to that of its cousin *Avicularia*. It is a nervous, fast-moving species that quickly becomes defensive and will bite.

Pachistopelma – This genus contains two small species that are not common in captivity. They inhabit bromeliad microclimates in the harsh arid caatinga and restinga habitat of Atlantic coastal Brazil.

Psalmopoeus – These spiders get large and usually have an attitude to match. From the orange-accented, olive *P. cambridgei* to the Halloween-colored *P. irminia* to the smaller and more somberly colored *P. pulcher* and *P. reduncus*, these are impressive and beautiful display spiders. If disturbed they will quickly rear-up and not hesitate to strike, but if left alone they tend to settle down and remain in their retreats during cage maintenance.

Tapinauchenius – These are some of the fastest of all tarantulas. With the exception of *T. gigas*, they are generally smaller than other arboreal tarantulas except *Pachistopelma* and some dwarf species of *Avicularia*. Lacking the gaudy coloration of some of the other tree-dwelling theraphosids, “Taps” have a velvety sheen that ranges from bronze to silver to mahogany to purple. Spiderlings are small and require close attention. They should be fed often with small insects until they have molted several times.

OLD WORLD

Encyocratella olivacea (formerly *Xenodendrophila gabrieli*) – This Tanzanian arboreal has only been recently described and only a small number have entered the hobby.

Heteroscodra – Only *H. maculata* is commonly found in the hobby. This grey ghost tends to build silk retreats towards the bottom of the cage, although some will spend a fair amount of time perched high on a vertical piece of bark.

Omothymus & Phormingochilus – Southeast Asia is home to some large arboreal tarantulas that have recently been re-classified. The “Singapore Blue” (*Omothymus violaceopes*), its cousin *O.* (formerly *Cyriopagopus*) *schioedtei* and *Phormingochilus everetti* are two popular examples.

Poecilotheria – The queen of arboreals and known only from India and Sri Lanka. Many keepers fear these spiders because of their reputation for speed and the extremely painful bites reported by a number of hobbyists. *P. regalis* is the “classic” species of this genus and possibly the best species for the beginner, who should at first avoid the more easily agitated and fiercely defensive species like *P. fasciata* and *P. ornata*. ven calmer is the beautiful Gooty Sapphire Ornamental *P. metallica*, which has now come down in price and is accessible to the neophyte hobbyist. However, when inside their cages and not provoked these tend to be among the calmer of the arboreals, much more so than *Psalmopoeus irminia*, for example. These are the largest of the arboreal tarantulas, with *Poecilotheria ornata* and *P. rufilata* capable of leg spans in excess of 8 or 9 in [20 or 22.5 cm]. *Poecilotheria* are among the most hardy of the arboreal tarantulas, tolerating somewhat dry conditions if provided with water and frequent food. Care should be taken that the three montane species [*P. rufilata*, *P. smithi* and *P. sp.* highland (often called highland *P. subfusca*)] rare not kept dry for extended periods and are not exposed to temperatures exceeding that of a comfortable room.

Stromatopelma – Similar to *Heteroscodra* in habits, albeit a bit more high-strung. The “red” color morph found in the hobby is an incredibly beautiful spider with feathery setae that gives it the common name of “Feather-leg Baboon Spider”.



Poecilotheria metallica



Psalmopoeus cambridgei