Identification of CITES-listed Tarantulas

Aphonopelma, *Brachypelma* and *Sericopelma* species

Environment and Climate Change Canada

Environnement et Changement climatique Canada

SEMARNAT

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CONABIO

SSC Species Survival Commission

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Table of Contents

List of Tables

List of Figures

List of Abbreviations and Acronyms

CEC	Commission for Environmental Cooperation
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CONABIO	*Comisión Nacional para el Conocimiento y Uso de la Biodiversidad* (National Commission for the Knowledge and Use of Biodiversity; Mexico)
DGVS	*Dirección General de Vida Silvestre* (General Directorate for Wildlife; Mexico)
ECCC	Environment and Climate Change Canada
IUCN	International Union for Conservation of Nature
IBSP	*Instituto Butantan* (Butantan Institute; Brazil)
NHMUK	The Natural History Museum, London (United Kingdom)
OUMNH	Oxford University Museum of Natural History (United Kingdom)
PROFEPA	*Procuraduría Federal de Protección al Ambiente* (Federal Attorney for Environmental Protection; Mexico)
SEMARNAT	*Secretaría de Medio Ambiente y Recursos Naturales* (Secretariat of Environment and Natural Resources; Mexico)
UMA	*Unidades de Manejo para la Conservación de Vida Silvestre* (Management Units for the Conservation of Wildlife; Mexico)
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
USFWS	United States Fish and Wildlife Service
UVic	University of Victoria
WCS	Wildlife Conservation Society

Glossary of Terms

The following definitions were adapted from Lawrence (2005).

Abdomen	Rounded posterior part of the body behind the cephalothorax.
Anterior	Located at the front.
Body length	Longitudinal measurement from the front of the chelicerae to the end of the abdomen without the spinnerets.
Carapace	Hard upper shell that covers the cephalothorax.
Cephalic	The head, or raised frontal portion of the carapace.
Cephalothorax	Anterior region of the body formed by the fused head and thorax, with four pairs of walking legs, chelicerae and pedipalps.
Chelicerae	Paired appendages at the front of the carapace that terminate in hollow fangs for injecting venom.
Coxa	First segment of the leg, counting from the body.
Dorsal	The upper side or back.
Femur	Third segment of the leg, counting from the body.
Femora	Plural of femur.
Fovea	Indentation in the thoracic region of the carapace. Also called the foveal groove.
Instar	Developmental stage in the life of a tarantula (and other arthropods) between two successive molts of the exoskeleton.
Metatarsi	Plural of metatarsus.
Metatarsus	Sixth segment of the leg, counting from the body.
Ocular tubercle	A small raised mound with eight eyes located at the front of the carapace.
Opisthosoma	See abdomen.
Palpal bulb	Male sex organ located at the tip of the pedipalps and used to transfer sperm to the female.
Palps	See pedipalps.

Patella	Fourth segment of the leg, counting from the body.
Patellae	Plural of patella.
Pedipalps	Paired leg-like appendages immediately anterior to the walking legs. This term is often shortened to palps.
Plumose hairs	Feather-like hairs.
Posterior	Located at the rear.
Prosoma	See cephalothorax.
Scopula	Tuft of fine brush-like hairs.
Setae	The hairs that cover the body and legs.
Spinnerets	The small appendages at the rear of the abdomen that emit silk.
Sternum	The rounded chest plate on the underside of the cephalothorax.
Stridulatory hairs	Modified hairs found on tarantula appendages that produce sound or vibrations when rubbed together.
Striations	Series of grooves or linear marks that radiate out from the fovea on the carapace.
Tarsi	Plural of tarsus.
Tarsus	Seventh and last segment of the leg, counting from the body (the foot).
Tibia	Fifth segment of the leg, counting from the body.
Tibiae	Plural of tibia.
Tibial spurs	Hook-like structure on the underside of the leg I tibia of males of some species of tarantulas, used during mating.
Trochanter	Second segment of the leg, counting from the body.
Urticating hairs	Fine barbed hairs located on the abdomen of most New World tarantulas, used as a defense mechanism against predation.
Ventral	The underside.

Abstract

The purpose of this guide is to assist enforcement officers by providing the information required to identify specimens of tarantula species that are listed in the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The identifying characters of one species of *Aphonopelma*, 16 species of *Brachypelma*, and two species of *Sericopelma* are described in text and accompanying photographs. Collectively, these species comprise all of the tarantula species that are listed on the Appendices of CITES (at the time of writing). Common names, scientific synonyms and distribution summaries are also provided. In addition, information is provided on basic tarantula morphology, and anticipated changes to *Brachypelma* taxonomy is discussed. Safe handling techniques are also reviewed for officers who may be required to inspect shipments of tarantulas, or otherwise interact with live specimens.

Preface

In 2017, the Commission for Environmental Cooperation (CEC) published five action plans for promoting legal, sustainable and traceable trade in selected North American species that are listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The five action plans were produced under the guidance of the CITES Authorities of Canada, Mexico and the United States.

One of those action plans, entitled *Sustainable Trade in Tarantulas: Action Plan for North America*, provided 18 recommended actions for: improved cooperation among North American stakeholders, government policies that promote captive-breeding and sustainable trade, biological and trade information, conservation and enforcement. One recommendation articulated the need to produce and distribute a guide to the identification of *Brachypelma* tarantulas. This document has been developed in response to that recommendation under the guidance of the CITES Authorities of Canada, Mexico and the United States.

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Introduction

The purpose of this guide is to provide law enforcement officers with the information necessary to identify specimens of tarantula species that are listed on the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Tarantulas are a group that includes the world's largest spiders. Many species are colorful, easy to care for, and long-lived in captivity. As a result, tarantulas are widely sold and kept as exotic pets in many countries. *Brachypelma* tarantulas are particularly sought after due to the colorful appearance of many species, and their docile nature (CEC, 2017; Rojo, 2004; West, 2005). During 2007–2016, approximately 40,000 live *Brachypelma* tarantulas were legally traded internationally. More than 6,000 specimens were traded in 2015, and again in 2016 (Cooper, 2018). In addition, every year an unknown number of specimens are illegally collected in the wild and smuggled out of the range countries. The numbers of tarantulas illegally exported from Mexico is thought to be significant (CEC, 2017).

The redknee tarantula, *Brachypelma smithi*, became a popular pet in the late 1970s and early 1980s. As a result, large numbers of wild-caught specimens were exported from Mexico to meet the demand (R. West, pers. obs.). Concern about the impact of this trade on wild populations led to *B. smithi* being the first spider to be listed on the Appendices of CITES (CITES, 1985). In 1995, all species in the genus *Brachypelma* were listed on CITES Appendix II (CITES, 1994a, b).

Brachypelma andrewi is known from a single male specimen, and *Brachypelma aureoceps* is known from a single female specimen, both collected over 100 years ago. The collection location for these species is either missing (*B. andrewi*) or suspect (*B. aureoceps*) and descriptions of living specimens cannot be produced. These species have, accordingly, been excluded from the descriptions provided in this guide.

Sericopelma angustum is also only known from a single female specimen from Costa Rica. However, location data and a description of this specimen were published a few years after it was collected (Valerio, 1980). The published description was not ideal for the purposes of this publication. But there was enough information to warrant inclusion of the species. It is unlikely that the species will be encountered in trade.

This is the first comprehensive guide to CITES-listed tarantulas to be developed since the genus *Brachypelma* was listed more than twenty years ago. In 1995, the US Fish and Wildlife Service (USFWS) and National Fish and Wildlife Foundation (NFWF) prepared a series of identification sheets for inclusion in the *CITES Identification Manual* (CITES, 1995; Kirkby et al., 1995).[1] However, those identification sheets included information on only eight species of *Brachypelma*. Furthermore, the information provided in those pages would no longer be considered up to date nor taxonomically accurate.

[1] The *CITES Identification Manual* was a publication that was distributed by the CITES Secretariat. In 2011, the Secretariat discontinued the printed version of the manual and moved to an online "wiki" version (CITES, 2011). As of July 2016, the identification sheets for *Brachypelma* had not been uploaded to the Secretariat's CITES Wiki, and the printed version is no longer available (CITES, 2016).

One of the challenges to completing this guide was the dilemma of how to organize the species descriptions. The simplest option was to present the descriptions in alphabetical order. However, ongoing research indicates that some of the species currently included in the genus *Brachypelma* will be moved to other genera. Hence, a second option was to order the descriptions taxonomically, with the species that will be moved out of the *Brachypelma* grouped separately from those that will remain in the genus. However, the purpose of this guide is to assist enforcement officers in enforcing CITES. The species have, therefore, been grouped based on visual similarity in order to facilitate the use of the guide by non-experts. Those species that generally have dark legs and red hairs on their abdomen (the "red abdomen" *Brachypelma*) are grouped separately from species that have distinctive colored bands on their legs (the "redleg" *Brachypelma*). Species that do not fit into either of these categories are grouped together as "other" CITES-listed tarantulas.

This guide is divided into eight parts; this introduction concludes Part 1. Part 2 describes the methods used to complete the guide. Part 3 reviews the basic morphology of tarantula spiders. Part 4 discusses the safety and handling issues to be considered when live tarantulas need to be examined. Part 5 provides an introduction to the genera *Aphonopelma*, *Brachypelma* and *Sericopelma*, along with a summary of expected future taxonomic changes to the genus *Brachypelma.*

Parts 6, 7 and 8 provide descriptions of the species that comprise the "red abdomen" group of *Brachypelma*; the "redleg" group of *Brachypelma*; and "other" CITES-listed tarantulas. Each description includes the common name for the species, any scientific synonyms, and information on distribution and trade. The morphological characters useful for identifying the species are described and illustrated with photographs of living specimens. Similar CITES-listed species are noted, and differences between the species are explained.

Annex A lists the tarantula species included in the Checklist of CITES Species (as of 31 August 2018), the current accepted nomenclature for those species, and anticipated changes as a result of ongoing revision of the genus *Brachypelma.*

Note regarding the nomenclature used in this guide

At the time of writing (31 August 2018), the Checklist of CITES Species included 22 species of tarantulas, all listed on Appendix II. This included 20 species of *Brachypelma*, plus two species of *Aphonopelma* that were originally considered to be *Brachypelma* when the genus was listed by CITES in 1995 (CITES, 2018a). However, this list of species does not reflect the current accepted taxonomy for these genera. *Aphonopelma albiceps* has been moved back into the genus *Brachypelma* (Locht et al., 2005), *B. annitha* is now considered to be identical to *B. smithi* (i.e. a taxonomic synonym) (Mendoza & Francke, 2017), and both *Brachypelma angustum* and *Brachypelma embrithes* have been moved to the genus *Sericopelma* (Gabriel & Longhorn, 2015) (see Annex A of this publication).

The discrepancy between the scientific names listed on Appendix II vs current nomenclature created a dilemma for the production of this guide. It was imperative that this publication be scientifically accurate, which necessitated that the most currently accepted taxonomy for the species be followed. Furthermore, a summary of the nomenclature changes required to update Appendix II were submitted to the thirtieth meeting of the CITES Animal Committee in July 2018. It is anticipated that Appendix II will be amended at the eighteenth meeting of the Conference of Parties in May/June 2019. Therefore, if the outdated nomenclature used in Appendix II was reproduced in this document, the guide would be out of date within months of being published.

However, there were concerns that in the time between publication of this guide and the amendment of Appendix II, enforcement staff could encounter CITES documents that used scientific names for species that did not appear to have been described in the guide. It is worth noting that the use of outdated scientific names will likely occur after Appendix II is amended as well.

After considering these issues, the authors opted to use current nomenclature for this guide, for the reasons outlined above. The taxonomic synonyms (outdated scientific names) are listed for each species, and an index has been provided to all of the scientific names used in the publication. The index will allow enforcement officers to readily look up any scientific name used in CITES documents.

Additional nomenclature changes to the genus *Brachypelma* are expected, but will be published too late for adoption at CoP18. An errata supplement that summarizes these changes may be needed to be added to this guide in the future.

Methods

Information sources

The information in this guide was compiled via literature review, verbal and written communication with relevant experts and stakeholders, analysis of trade data and direct observations.

Common names

The English common names used in this document are taken from the publication *Common Names of Arachnids* by the American Arachnological Society (AAS, 2003). The spelling of common names follows the standards established by this publication. For example, the term "redleg" is used rather than "red leg" or "red-leg."

French and Spanish common names were sourced from the Checklist of CITES Species, where available (CITES, 2018a). These names were subsequently reviewed and revised by native French and Spanish-speaking tarantula experts. Note that the word "tarantule" is commonly used as the French translation for "tarantula." However, the term "tarantule" refers specifically to the lycosid wolf spider, whereas the true French name for a tarantula is "mygale" (Latreille, 1804; F. Vol, J. Verdez and M. Gamache, pers. comm.). This publication, therefore, uses the latter, correct name.

Measurements

All measurements are provided using the metric system. Any data using imperial units were converted to metric.

Trade data

Data for trade in species of *Aphonopelma* and *Brachypelma* in the years 2006–2016 were compiled from the United Nations Environment Programme-World Conservation Monitoring Centre (UNEP-WCMC) CITES Trade Database using the option for comparative tabulation reports. Data for pre-convention, confiscated or seized specimens (source code "I") were excluded. A very small number of *Brachypelma* specimens in trade were not identified to species. These data were also excluded.

Data were compiled using the quantities reported by both the exporting countries and the importing countries. Where these data were not identical they have been presented as a range of numbers of specimens (e.g. 200–300). In most cases, the lower number reflected the importer reported data.

More than 99% of the data reported in the UNEP-WCMC CITES Trade Database was for trade in live specimens. Trade in "specimens" accounted for less than 1% of all trade and was almost exclusively for scientific purposes. The nature of these specimens is unknown and could range from whole animals to microscopic samples. Therefore, the data presented in this document focus primarily on trade in live specimens, and trade in specimens is only discussed in those cases where trade in a species was exclusively for scientific purposes.

Availability of species in trade

The tarantula species that are the subject of this guide were sorted into five groups, based on the numbers of live specimens traded in 2006–2016 according to the UNEP-WCMC CITES Trade Database. These groups were then ranked to provide an indication of how common the species were in international trade over the 10 years (Table 1).

Table 1. Criteria for ranking species availability in international trade, 2006–2016

Summary	Numbers traded*	Ranking
No specimens traded	0	Not traded
Individual specimens traded	1	Rare
Tens of specimens traded	23–64	Uncommon
Hundreds of specimens traded	492–1,282	Common
Thousands of specimens traded	6,133–25,642	Very common

*Numbers of specimens traded as compiled from the UNEP-WCMC CITES Trade Database.

Photography

Unless otherwise noted, all of the photographs used in this publication were taken by the authors.

Note regarding the format of this guide

The authorities responsible for enforcing CITES need to be able to identify more than 35,000 species of animals and plants, which may be traded as a multitude of different parts, products and derivatives. When it comes to tarantulas, enforcement officers would preferably have access to a short, simple guide that would allow them to readily distinguish CITES-listed species from non-listed species, and identify those species that are listed by CITES. Unfortunately, for many species of tarantulas, identification is not simple or easy.

Currently, there are 144 genera and 973 species of tarantulas distributed worldwide (World Spider Catalog, 2018) with 22 species from three genera (*Aphonopelma*, *Brachypelma* and *Sericopelma*) listed on CITES Appendix II. Most genera can only be positively identified through microscopic identification of their genitalia (sex organs) or via DNA analysis. Even identification of generally recognizable species can be complicated because males and females of the same species may exhibit different color patterns. Furthermore, there is natural variation in the color patterns of any tarantula species. Additionally, the colors of most species change considerably with each progressive molt as the animal ages, with juveniles looking considerably different from adults (Fig. 1). Colors may also vary depending on how close a tarantula is to molting its exoskeleton.

For the species listed on CITES Appendix II, identification of the red abdomen *Brachypelma* species is particularly difficult. Specimens of several species (notably *B. epicureanum*, *B. kahlenbergi*, *B. sabulosum*, and *B. vagans*) look identical. Even experts have difficulty visually identifying specimens of these species. The good news is that there is not great demand for specimens of most types of red abdomen *Brachypelma*. The most popular CITES-listed species are the redleg species, which are generally the most readily identifiable as adults or sub-adults. Unfortunately, most are traded internationally as young juveniles and do not exhibit these distinctive colors and patterns.

In conclusion, development of an accurate, quick and easy guide to CITES-listed tarantulas was not feasible. The authors have, instead, presented detailed descriptions and photographs of each species, along with supporting information about the distribution, conservation status, and trade dynamics. The goal was to provide a detailed field-guide to the (currently) CITES-listed tarantula species that enforcement officers (and other individuals) could use as an accurate reference for identifying these species.

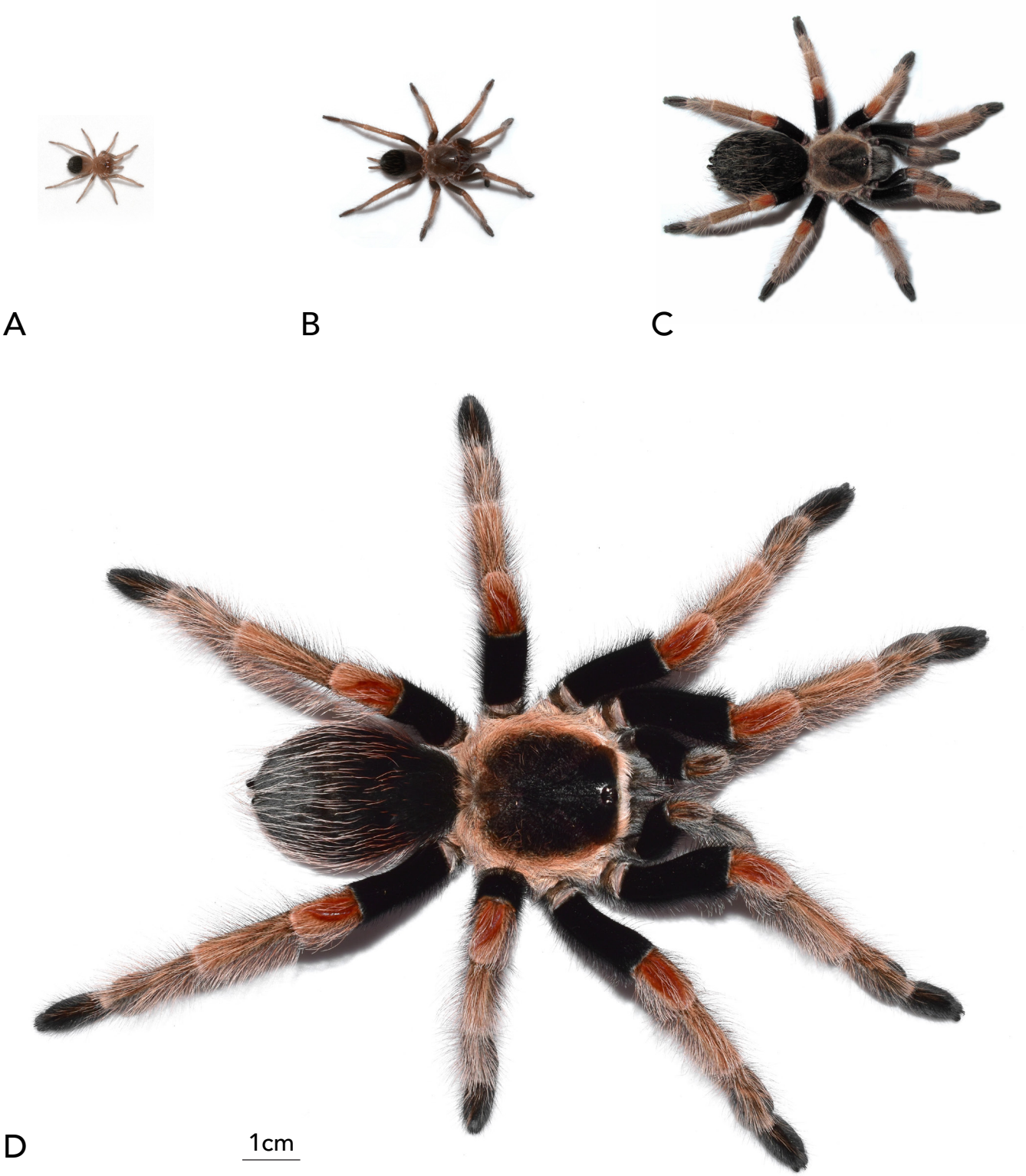

Figure 1. Growth and Development of *Brachypelma baumgarteni*

Note: (A) Captive-bred juvenile (4th instar, three months old); (B) captive-bred juvenile (6th instar, seven months old); (C) captive-bred juvenile (9th instar,14 months old); (D) wild adult female (approximately 7 years old).

Tarantula Morphology

External morphology

The body of a tarantula, like that of any spider, is divided into two main regions: the anterior cephalothorax or prosoma, and the posterior bulbus section called the abdomen or opisthosoma. The upper surface (dorsal side) of the cephalothorax consists of a shield-like carapace. The cephalothorax and abdomen are joined by a narrow waist called the pedicel (Fig. 2).

Projecting from the front of the cephalothorax are a pair of chelicerae that terminate in the hollow "fangs" which deliver the venomous bite (Figs. 2 & 3). The fangs lie folded along the underside of the chelicerae when at rest, and fold outward like a pocket knife to point downwards when a tarantula delivers a bite. Near the anterior edge of the carapace is an ocular tubercle with eight small eyes. Located near the central posterior of the carapace is a pit called the fovea (or foveal groove) (Fig. 2).

Tarantulas, like all spiders, have four pairs of walking legs, which are numbered on each side as leg I, leg II, leg III and leg IV. Each leg has seven segments that start with the coxa, attached to the underside of the cephalothorax, then (in order from the body) the trochanter, femur, patella, tibia, metatarsus and tarsus (foot) (Fig. 2). Mature males of some species have hook-shaped spurs on the underside of the leg I tibia (tibial spurs), which are used during mating (Fig. 4).

The body and legs are entirely covered in both short and long hairs (setae). Some, located near the extremities of the legs and pedipalps, function to detect vibrations or chemical cues that help locate food, prey, predators or a mate (Foelix, 2010). Each tarsus and most of the metatarsus is covered on the underside by a dense, brush-like pad of hairs called a scopula (Fig. 5). All tarsi end in a pair of small retractable claws (Fig. 5), which along with the scopula allow the tarantula to climb very smooth surfaces. Tarantulas can easily escape from containers that are not properly secured.

In addition to the walking legs, there is a shorter pair of leg-like appendages, called the pedipalps, on either side of the chelicerae (Figs. 2 & 3). Unlike the walking legs, the pedipalps have only six segments. Mature male tarantulas have palpal bulbs on the last segment of each pedipalp. The palpal bulbs appear only after the male completes its final exoskeleton molt and are used to transfer sperm to a female during mating (Fig. 3).

Some tarantula genera have stridulating (sound-producing) hairs located between the opposing faces of certain appendages. The stridulating hairs may be simple plumose (feather-like) hairs or an elaborate structure of rods and spines, depending on the genus. When disturbed, the tarantula rubs the two opposing faces together to produce an audible sound. It's believed the sound is used to deter predators and/or plays a role in species recognition during breeding.

The abdomen of a tarantula contains the heart, two pairs of lungs (called book lungs), reproductive organs, digestive and food storage organs and silk-production glands. The underside (ventral side) of the abdomen has two pairs of slits that lead to the book lungs. The rear of the abdomen terminates in the anus, located between two pairs of spinnerets through which silk is emitted (Fig. 2). One pair of spinnerets is much longer and finger-like than the second pair.

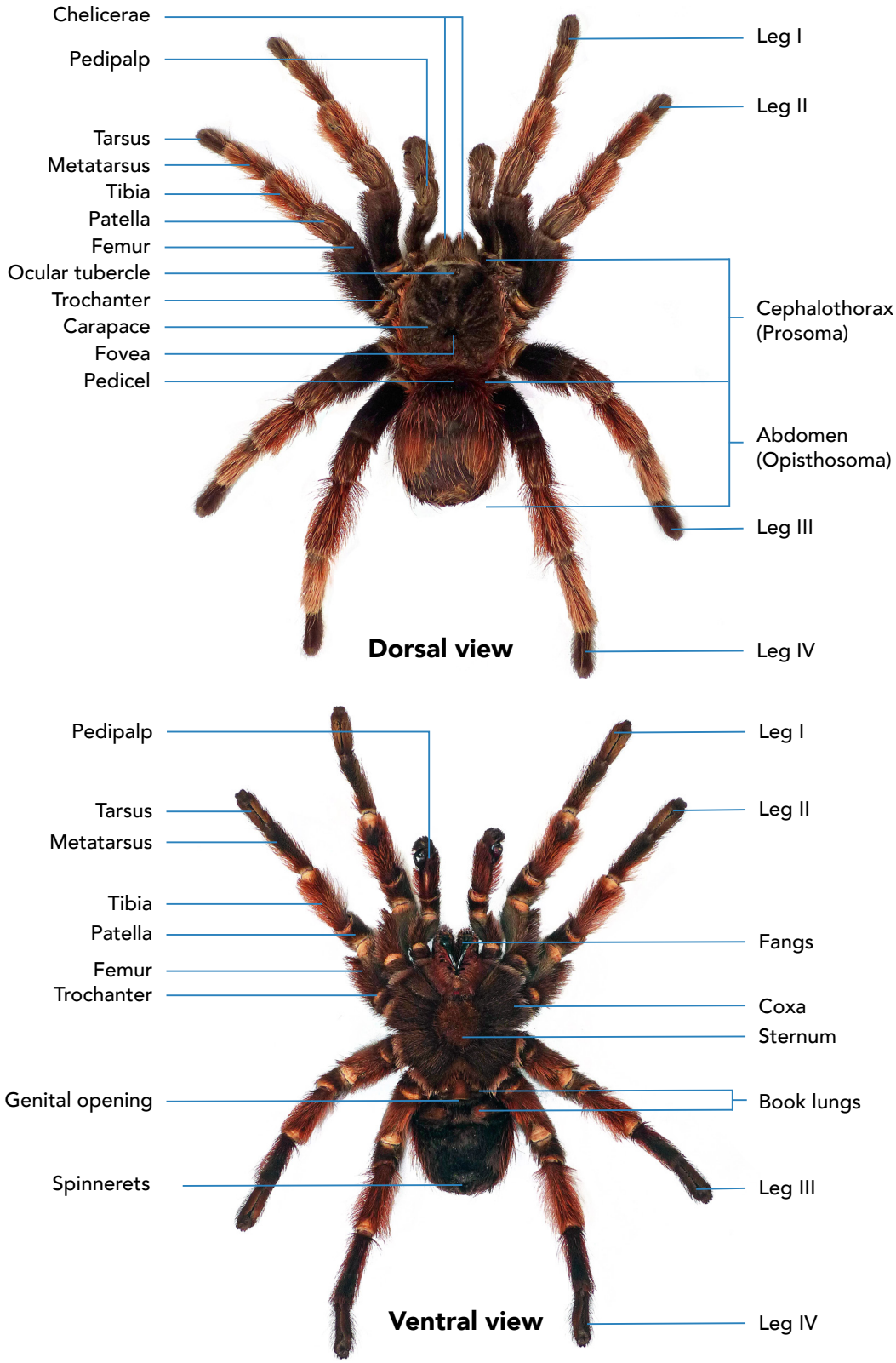

Figure 2. External morphology of an adult male tarantula

Note: The specimen pictured is a preserved male *Brachypelma klaasi* that was collected in Jalisco State, Mexico.

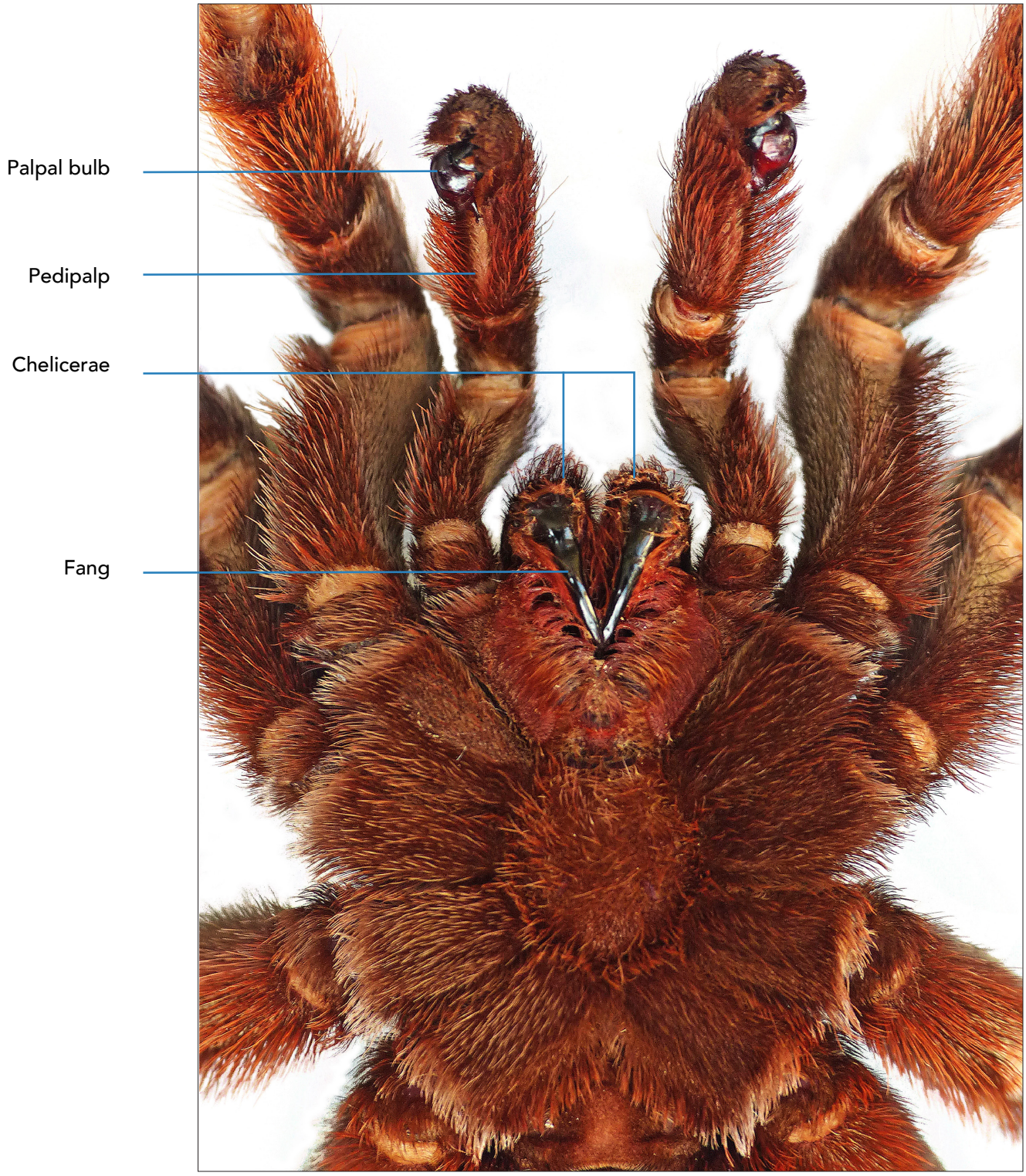

Figure 3. Underside of the prosoma of an adult male tarantula

Note: The specimen pictured is a preserved *Brachypelma klaasi* that was collected in Jalisco State, Mexico.

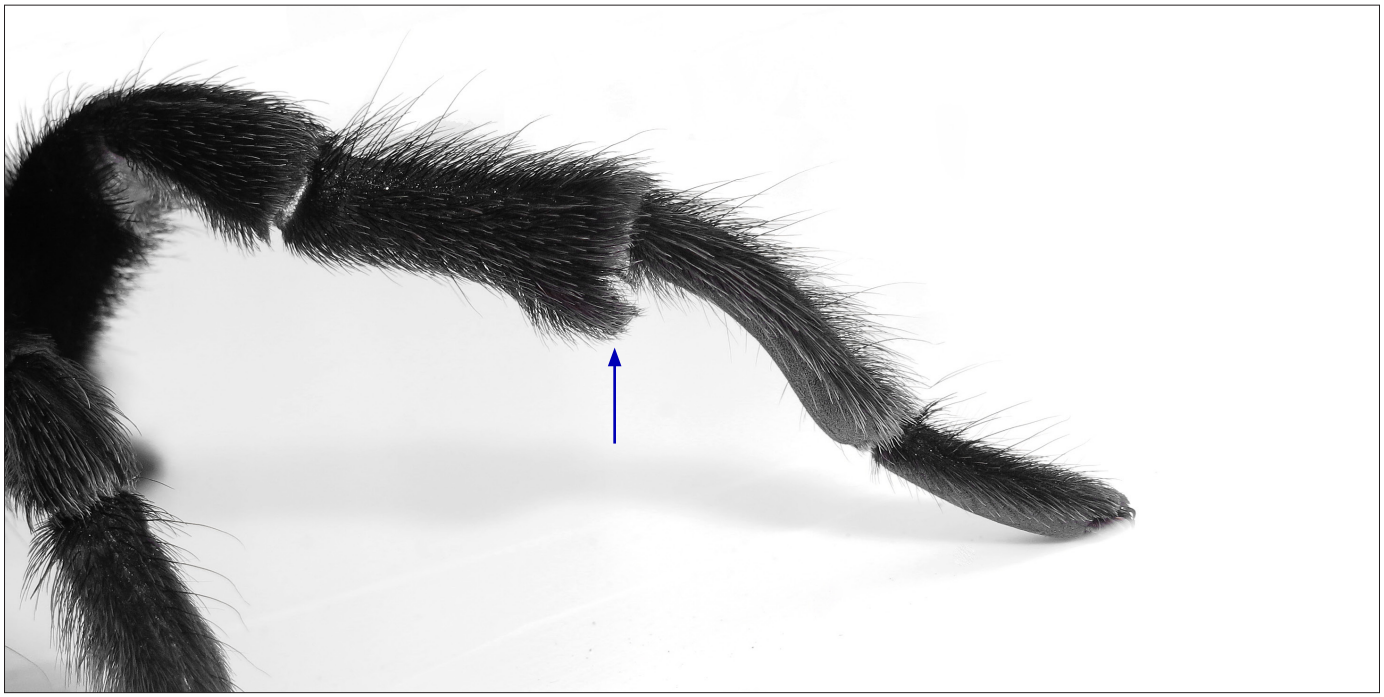

Figure 4. Tibial spur on the leg I of an adult male tarantula

Note: The specimen pictured is the leg of a live *Brachypelma albiceps*. The arrow points to the tibial spur.

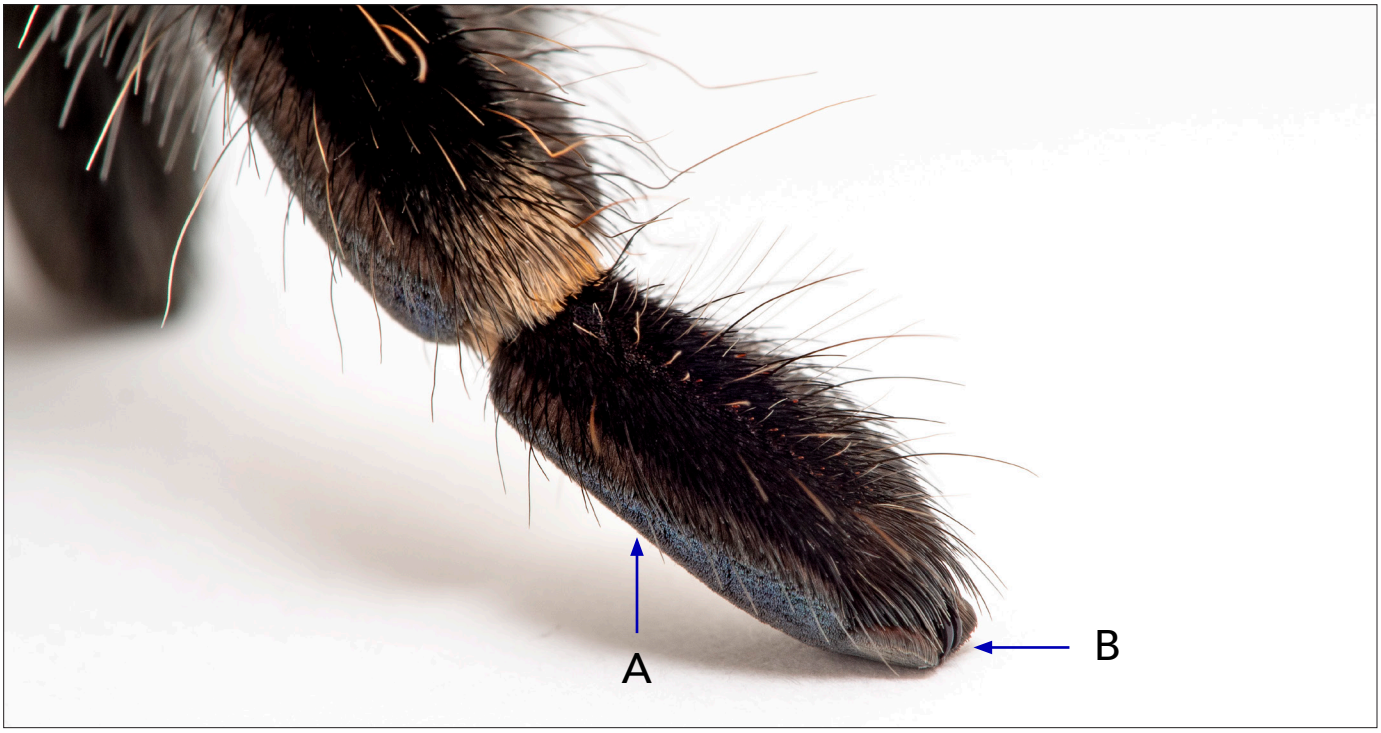

Figure 5. Tarsus (foot) of a tarantula

Note: (A) scopula; (B) claws. The specimen pictured is the tarsus of a live subadult female *Brachypelma hamorii*.

Urticating Hairs

Most New World tarantulas have thousands of extremely fine, barbed urticating hairs distributed over the top, rear and sides of the abdomen. These specialized hairs range in length from 0.25–0.75 mm and have an acute tip with arrangements of small barbs or pointed scales that face down the hair shaft. The hairs are classified as type I–VII urticating hairs, respectively (Fig. 6). Some New World tarantula genera have either one, or a combination of two urticating hair types on their abdomen. *Aphonopelma* only possess type I urticating hairs while both *Brachypelma* and *Sericopelma* possess a combination of type I and III (Fig. 7). None of these genera possess urticating hair types II, IV, V, VI or VII. Urticating hairs types, and their combinations, aid in determining New World tarantula genera (Bertani & Guadanucci, 2013; Cooke et al., 1972; Foelix, 2010; Perafán et al., 2016; Pérez-Miles & Perafán, 2015).

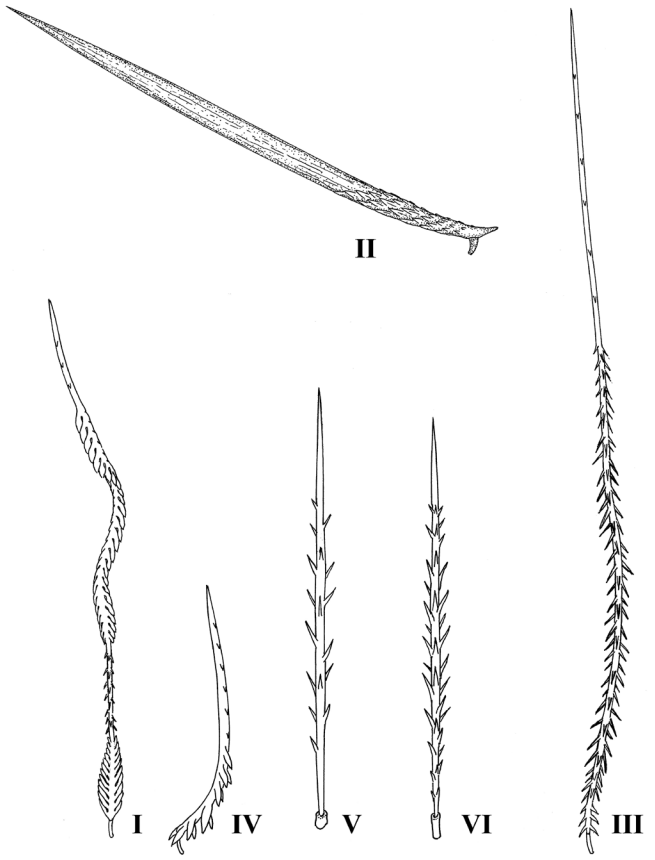

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Figure 6. Tarantula urticating hairs, types I–VI

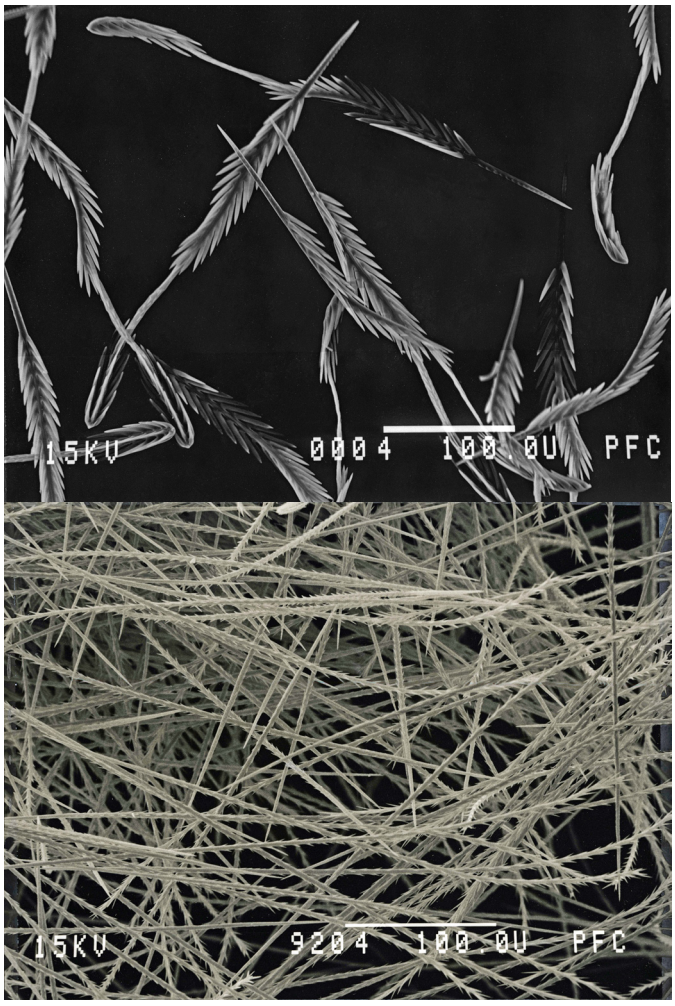

Figure 7. Electron micrographs of tarantula urticating hairs

Note: The urticating hairs pictured above were taken from a specimen of *Brachypelma emilia*. The scale bar is 100 microns (0.1 mm).

Safety, Handling and Examination

Safety

All tarantula spiders are venomous and, if provoked or mishandled, will bite defensively (Fig. 8). The toxicity of *Aphonopelma*, *Brachypelma* and *Sericopelma* venom is not reportedly life-threatening to humans. A bite is often painful, and is followed by redness, swelling and discomfort which can last for a few hours or more before it subsides (Fig. 9). In humans, anaphylaxis or an allergic reaction caused by a tarantula bite is extremely rare (Ahmed et al., 2009; Hauke & Herzig, 2017; Matabuey, 2016; Rahmani et al., 2014). Tarantula bites should be cleaned with antiseptic to reduce the transference of any pathogens, such as *Staphylococcus aureus*. Any bite from a venomous animal should be monitored and examined by a health professional, as appropriate.

When disturbed or threatened, specimens of *Aphonopelma*, *Brachypelma* and *Sericopelma* can quickly scrape their rear legs over the urticating hairs on the back of their abdomen, causing the hairs to detach and float on air currents (Cooke et al., 1972). If mishandled, or exposed to these hairs, they can penetrate the skin and cause varying degrees of discomfort or damage to the eyes (Hsu et al., 2007) (Fig. 10). Injury from these penetrating hairs is mechanical and can last between hours to months, depending on sensitivity to the hairs and how deep they penetrated. Wearing safety goggles, disposable dust mask, disposable gloves and long-sleeved clothing is recommended. If exposed to urticating hairs, work clothing should be washed separately from household clothing (R. West, pers. obs.).

Handling

Handling any species of tarantula is not recommended. Not only is it unnatural for the tarantula, but it can lead to injury to either the handler or the tarantula. Squeezing, pulling a limb or rough handling of a tarantula can cause it to bite or fall.

Examination

Not all species of *Aphonopelma*, *Brachypelma* and *Sericopelma* are docile in behavior. If a larger specimen needs to be examined, the examination should take place in a quiet escape-proof work area, away from bright sunlight and any strong air currents (breezes). Tarantulas are sensitive to both and will try to retreat away from them. Blowing on a tarantula should always be avoided.

Tarantulas are generally shipped in varying sizes of plastic vials, plastic bottles or plastic deli cups, packed inside a sturdy cardboard or Styrofoam box. The interior of their individual containers will be lined with paper toweling to cushion them from injury during transit, which obscures easy observation of a specimen. If a tarantula cannot be adequately viewed through its container, and has to be examined for species identification, the container should preferably be opened carefully inside a large plastic storage tub, or a large deep sink with the drain capped. Should the tarantula escape its container, it can be readily re-secured from the tub or sink. It should be noted that tarantulas are fragile and any fall or harsh jarring of their container can injure or kill the animal.

Tarantulas are best viewed in a clear plastic container, such as another deli cup or vial. If tarantula examinations have to be performed by removing them from their container(s), a supply of small clear deli cups and vials should be available, along with the aforementioned safety equipment.

A tarantula can be transferred to an examination container by aligning the shipping container (inside a tub or sink) mouth-to-mouth with an empty clear container of equal size. A blunt-ended object, such as a pencil, ruler or long thin paint brush, can then be used to *gently* nudge the tarantula into the opposing container, and the lid then secured. Care must be taken not to close the lid on any of the tarantula's legs or feet. The process can be repeated to transfer the tarantula back to its original container.

Collecting and preserving DNA samples

The majority of the tarantulas traded internationally are traded as young juveniles. These can be difficult to identify visually, as they typically do not exhibit the distinctive color patterns of adults. Furthermore, investigations and prosecutions of illegal trade may require preliminary visual identification of tarantulas to be supported by confirmatory forensic identification. Genetic analysis has the potential to quickly and efficiently provide these identifications (Chen et al., 2011; Hamilton et al., 2014). The removal of a single leg and cauterization of the wound, allows for the sampling of DNA without killing a specimen, and makes this approach quite feasible (Hamilton et al., 2014; Hendrixson et al., 2013; Longhorn, 2002).

Legs I and II have a sensory role (such as detecting prey) and leg IV is used defensively to brush off urticating hairs. Hence, leg III is the preferred leg for removal. If a leg is simply torn off, the wound will not seal because of poor coagulation properties and the tarantula will "bleed" to death. Instead, a voluntary fracture at the joint between the coxa and the trochanter should be induced, which results in the specimen naturally sealing the exposed joint. The following procedure should be followed for removing and preserving a leg:

- Restrain the tarantula in a clear plastic container. If necessary, it can be put in the refrigerator for one minute to slow down its movement.
- Hold the base of the leg III femur with forceps, near where it joins with the trochanter, and squeeze firmly but gently until the leg is voluntary released by the spider. It may be helpful to use a sponge or pad of tissue paper on top of the spider to secure it during the process.
- The isolated leg must be placed in 96%–100% ethanol and stored at -20°C during transportation.
- The natural sealing of the wound may be enhanced by coating the leg stump with cosmetic nail hardener or cyanoacrylate superglue. Care must be taken to not get this sealer on any other part of the spider's body.
- The tarantula should be placed in a ventilated container, with a dish of water, and observed for at least an hour to ensure that the wound has closed properly.
- Tissue samples can be stored for years if kept at -80°C.

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Figure 8. Tarantula biting a man's palm

Note: The specimen pictured is an adult male *Brachypelma vagans*. The arrow points to the tarantula's fang puncturing the skin.

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Figure 9. Tarantula bite on a man's palm

Note: The arrow points to one (of two) puncture wounds from the fangs of an adult male *Brachypelma vagans*.

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Figure 10. Eye injury caused by tarantula urticating hairs

Note: The source of the urticating hairs was a female *Brachypelma klaasi*.

The Genera *Aphonopelma*, *Brachypelma* and *Sericopelma*

There are relatively few morphological differences between specimens of *Aphonopelma*, *Brachypelma* and *Sericopelma* that are readily apparent visually. Confirmatory identification of these species requires microscopic examination of the genitalia and/or genetic analysis.

Differentiating *Aphonopelma* from *Brachypelma* is difficult due to the unresolved taxonomy of both genera. Ongoing research indicates that some *Brachypelma* species should be moved to a new genus (Mendoza & Francke, 2018; Turner et al., 2018) (see *Annex A*). Unfortunately, the genus *Aphonopelma* has long been a repository for unidentified tarantula taxa from North and Central America. Currently the genus *Aphonopelma* contains 61 valid species, 37 species that are synonymous with other species and 17 species that are of unknown or dubious validity (World Spider Catalog, 2018). Adding to the problem is that many species have been added to this genus based largely on artificial morphological traits. Genetic analysis suggests that the genus *Aphonopelma* should be revised into a number of separate genera (Turner et al., 2018). Currently, however, there are few morphological characters that are distinctive to the *Brachypelma* and *Sericopelma* and not found on any species of *Aphonopelma*.

It is difficult to differentiate between juveniles of *Aphonopelma* and *Brachypelma* as the morphological differences between species are not well-developed in young specimens (often referred to as "spiderlings"). The adult coloration develops as juveniles grow, making later instars easier to identify.

Distinguishing young *Sericopelma* juveniles from *Brachypelma* and *Aphonopelma* juveniles is not difficult as the *Sericopelma* are larger and distinctively black in color, sometimes with white metatarsi (J. Mendoza, pers. obs.). *Sericopelma* juveniles become more difficult to distinguish as they age, develop and lose this characteristic coloration (S. Longhorn, pers. comm.).

Aphonopelma are small to large-sized tarantulas with body lengths that range between 10–70 mm. Most species range between dull sandy brown to blackish in coloration (S. Longhorn, pers. comm.). The genus occurs from the Southwestern United States to Panama (World Spider Catalog, 2018).

Aphonopelma can be recognized via the following visible morphological features (Hamilton et al., 2016; Prentice, 1997):

- Both males and females possess only type I urticating hairs on the abdomen (Fig. 7) and lack a scopula on the inner side surface of the leg IV femur (Fig. 11).
- The carapace of both males and females is oblong (longer than wide) when viewed from above and has a higher cephalic (head) region when viewed from the side (Fig. 12). Stridulatory hairs are inconspicuous on the legs (Table 2). [2]
- Mature males possess spurs on the underside of the terminal end of the leg I tibia (Fig. 4 & Table 2). Males typically turn darker in color when mature.

[2] Hamilton et al. (2016) determined that specimens of *Aphonopelma* can be distinguished from specimens of all other tarantula genera by the lack of stridulation hairs. This appears to be true for species from the United States. However, some species from Mexico have weakly developed stridulating hairs on the leg I trochanter, but not on the femur (J. Mendoza, pers. obs.). It is likely that the two groups are actually separate genera.

Brachypelma are medium to large-sized tarantulas with body lengths that range between 35–70 mm, depending on the species. The genus occurs from Mexico to Costa Rica. Many species, especially from the Pacific side of Mexico, have colorful red-banded legs. These are referred to as the redleg *Brachypelma* (Fig. 13). Other species, mainly found on the Atlantic side of Mexico and down through Central America, are overall dark in coloration with long red hairs on the abdomen. These are the red abdomen (or redrump) *Brachypelma*.

Brachypelma can be can be recognized via the following visible morphological features (Mendoza & Francke, 2017; Valerio, 1980):

- Both males and females possess both type I and type III urticating hairs on the abdomen (Fig. 7) and lack a scopula on the inner side surface of leg IV femur (Fig. 11). Both possess feather-like stridulating hairs on the forward-facing surfaces of the trochanter and femur of leg I, and on the rear facing surface of the palp (Table 2). Both males and females exhibit similar color patterns, but mature males are typically brighter in color.
- The carapaces of both males and females appear round when viewed from above (Fig. 12).
- Mature males possess tibial spurs on leg I (Fig. 4 & Table 2). Mature males have thicker, stronger legs, and are generally more robust than male *Aphonopelma*.

Sericopelma are robust, large-sized tarantulas with body lengths that range between 45–100 mm, depending on the species. The genus occurs from Honduras to Panama (Gabriel & Longhorn, 2011; S. Longhorn, pers. comm.; Gabriel & Longhorn, 2015; Schmidt, 2003). Most species are very dark in color with long reddish hairs on the abdomen, similar to the red abdomen *Brachypelma*.

Sericopelma can be recognized via the following visible morphological features (Gabriel & Longhorn, 2015; Valerio, 1980):

- Both males and females possess both type I and type III urticating hairs on the abdomen (Fig. 7) and a thick scopula on the inner side surface of the leg IV femur (Fig. 11).
- The carapace of both males and females is oblong (longer than it is wide), with a deep transverse foveal groove and distinct striations radiating from that groove (Table 2).
- Mature males do not possess tibial spurs on leg I (unlike *Aphonopelma* and *Brachypelma* males) (Table 2).

Table 2. Distinguishing morphological characters of *Aphonopelma*, *Brachypelma* and *Sericopelma*

Character	*Aphonopelma*	*Brachypelma*	*Sericopelma*
Size (adult females)*	10–70 mm	35–70 mm	45–100mm
Urticating hairs	Present, type I	Present, type I and type III	Present, type I and type III
Scopula on leg IV inner femur face	Absent	Absent	Present
Carapace shape	Oblong from above with a high cephalic (head) region when viewed from the side.	Circular from above and cephalic region not noticably high when viewed from the side.	Oblong from above with distinct striations radiating from a deep transverse fovea groove.
Tibial spurs	Present on mature males	Present on mature males	Absent on mature males

* Males are smaller in body size and bulk but longer in leg than their female counterparts.

Figure 11. Comparison of *Aphonopelma*, *Brachypelma* and *Sericopelma* leg IV femurs

Note: These images show the inner face of the leg IV femur of representative specimens of each genus. The arrow points to the readily visible scopula that is present on the leg IV femur of all species of *Sericopelma* but absent on *Aphonopelma* and *Brachypelma*.

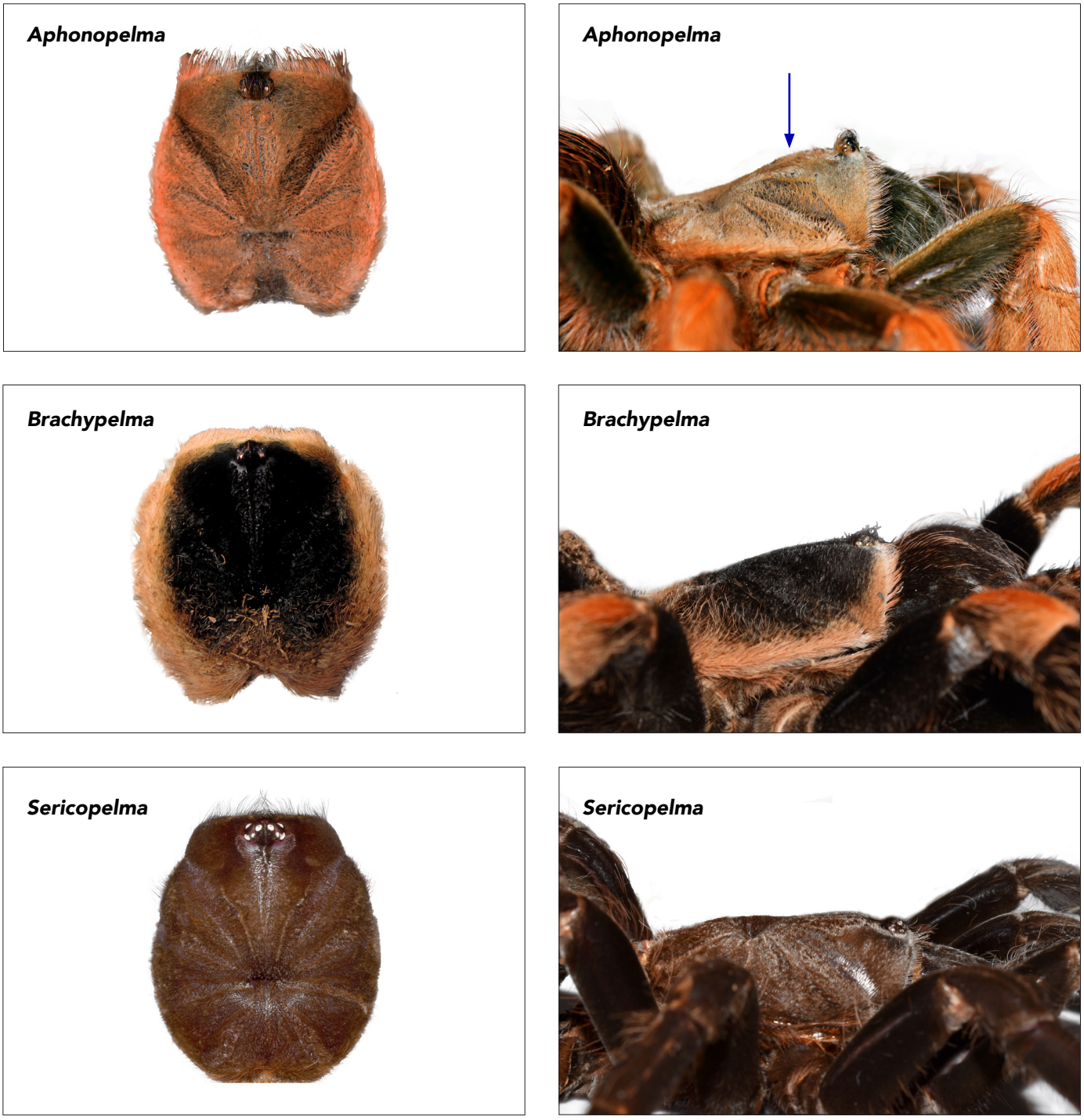

Figure 12. Comparison of *Aphonopelma*, *Brachypelma* and *Sericopelma* carapaces

Note: The carapace of an *Aphonopelma* looks oblong (longer than wide) from above and has a higher cephalic (head) region when viewed from the side (arrow). The carapace of a *Brachypelma* is more circular from above and has a cephalic region that is not noticeably high when viewed from the side. The carapace of a *Sericopelma* is oblong and has a cephalic region that is not noticeably high when viewed from the side.

Figure 13. Comparison of redleg *Brachypelma* legs

Note: Pictured are legs from the seven species of "redleg" *Brachypelma:* (A) *B. auratum* leg IV; (B) *B. baumgarteni* leg II; (C) *B. boehmei* leg II; (D) *B. emilia* leg I; (E) *B. hamorii* leg II; (F) *B. klaasi* leg II; and (G) *B. smithi* leg I. All of the legs of a particular species have similar coloration.

Red abdomen *Brachypelma*

Brachypelma albiceps

Brachypelma sabulosum

Brachypelma epicureanum

Brachypelma schroederi

Brachypelma kahlenbergi

Brachypelma vagans

Brachypelma verdezi

Brachypelma albiceps Pocock, 1903

CITES listing: Appendix II

Common names: Golden redrump tarantula (English)
Mygale dorée à abdomen rouge (French)
Tarántula trasero oxidado de Yucatán (Spanish)

Synonyms: *Eurypelma pallidum* F. O. Pickard-Cambridge, 1897 (part)
Aphonopelma albiceps (Pocock, 1903)
Brachypelmides ruhnaui Schmidt, 1997
Brachypelmides albiceps (Pocock, 1903)

Taxonomic note: As of August 2018, the transfer of this species to the genus *Brachypelma* by Locht et al. (1999) had not been reviewed by the CITES Parties, and Appendix II still listed the species in the genus *Aphonopelma* (CITES, 2018a).

Distribution: Endemic to Mexico and found in southern Mexico State, Morelos State northern and eastern Guerrero State and western Puebla State (Mendoza & Francke, 2018; R. West, pers. obs.).

Conservation status: In 2018, the IUCN assessed the status of *B. albiceps* and categorized the species as Least Concern (LC) (Fukushima et al., 2018).

Trade: Common in trade. According to the UNEP-WCMC CITES Trade Database, between 897–1,219 live specimens were traded internationally in the years 2006–2016. All were recorded as *Aphonopelma albiceps* and none were reported to be wild-caught. Almost all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 40 mm; females average 55 mm.

Carapace: Adult males and females have a golden-yellow carapace (Figs. 14 & 15) (Mendoza & Francke, 2018; R. West, pers. obs.).

Legs: Females have black legs. Older females typically have two lighter parallel longitudinal lines on the patellae (Fig. 14). Males have entirely black legs (Fig. 15) (Mendoza & Francke, 2018; R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are entirely covered in shorter black hairs, with scattered, longer red hairs (Figs. 14 & 15) (Mendoza & Francke, 2018; R. West, pers. obs.).

Juveniles: The carapace is a paler yellow than that of adults. The legs are gray-brown on younger juveniles, turning darker on older specimens. The abdomen is covered in shorter black hairs with scattered, longer rust-colored hairs. A black patch of urticating hairs is visible on younger juveniles (Figs. 16 & 17) (Mendoza & Francke, 2018; S. Longhorn & R. West, pers. obs.).

Similar CITES-listed species: *Aphonopelma pallidum*

Carapace: *B. albiceps* has a carapace that is a matte golden yellow, whereas the carapace of *A. pallidum* is golden brown and has a brassy, slightly glossy appearance (Mendoza & Francke, 2018; R. West, pers. obs.).

Legs: The legs of *B. albiceps* are thicker and stronger than those of *A. pallidum* (Mendoza & Francke, 2018; R. West, pers. obs.).

Abdomen: The longer scattered hairs on the abdomen are red in *B. albiceps*, while in *A. pallidum* they are shorter and rust-colored (Mendoza & Francke, 2018; R. West, pers. obs.).

Figure 14. *Brachypelma albiceps*, adult female from Guerrero State, Mexico

Note: This species has a distinctive matte golden yellow carapace that contrasts with the dark legs and abdomen.

Figure 15. *Brachypelma albiceps*, adult male from Guerrero State, Mexico

Figure 16. *Brachypelma albiceps*, captive-bred juvenile (8th instar, 42 months old)

Figure 17. *Brachypelma albiceps*, wild-caught juvenile from Guerrero State, Mexico (age unknown)

Brachypelma epicureanum (Chamberlin, 1925)

CITES listing: Appendix II

Common names: Yucatán rustrump tarantula (English)
Mygale à abdomen rouille du Yucatán (French)
Tarántula de trasero oxidado de Yucatán (Spanish)

Synonyms: *Eurypelma epicureana* Chamberlin, 1925
Dugesiella epicureana (Chamberlin, 1925)
Rhechostica epicureana (Chamberlin, 1925)
Avicularia epicureana (Chamberlin, 1925)
Aphonopelma epicureanum (Chamberlin, 1925)

Taxonomic note: Ongoing revisions of the genus *Brachypelma* indicate that this species belongs to different genus (Mendoza & Francke, 2018).

Distribution: Endemic to Mexico, occurring in northern Yucatán State and Quintana Roo State (Mendoza & Francke, 2018).

Conservation status: In 2018, the IUCN assessed the status of *B. epicureanum* and categorized the species as Least Concern (LC) (Fukushima et al., 2018).

Trade: Uncommon in international trade. According to the UNEP-WCMC CITES Trade Database, 52 live *B. epicureanum* were traded internationally in the years 2006–2016. All were reported to be captive-bred and all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 40 mm; females average 50 mm.

Carapace: Females have a black carapace, bordered with gray (Fig. 18). Males have a black carapace (Fig. 19) (J. Mendoza & R. West, pers. obs.).

Legs: Females have black legs. Older females typically have two lighter parallel longitudinal lines on the patellae (Fig. 18). Males have entirely black legs (Fig. 19) (J. Mendoza & R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are entirely covered in shorter black hairs intermixed with scattered longer red hairs that are usually curled upwards (Fig. 20). Males typically have more of the longer red hairs than do females. The number of scattered longer red hairs is reduced on the dorsal posterior area of the abdomen, creating a distinct circular black patch of the shorter hairs (Figs. 18 & 19) (J. Mendoza & R. West, pers. obs.).

Juveniles: The carapaces of juveniles range from bronze to black in color, largely dependent on age. The legs are black. The abdomen is entirely covered in shorter black hairs with scattered longer orange or reddish hairs (Fig. 21). The dorsal posterior black patch is not clearly evident until a juvenile reaches a later instar (J. Mendoza & R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma kahlenbergi, B. sabulosum, B. vagans*

Brachypelma epicureanum, *B. kahlenbergi*, *B. sabulosum* and *B. vagans* look almost identical to the naked eye. Although there are morphological differences between the species, they tend to be slight and somewhat inconsistent. Identification of specimens of these species is best confirmed through DNA analysis.

Carapace: *B. epicureanum* has a carapace that is matte in appearance and not slightly iridescent like the carapace of *B. kahlenbergi* (J. Mendoza pers. obs.).

Abdomen: The black patch on the dorsal posterior abdominal area of *B. epicureanum* is conspicuous and circular whereas the black patches exhibited by *B. kahlenbergi*, *B. sabulosum* and *B. vagans* are less distinct, with more scattered red hairs. The scattered longer red hairs on the abdomen are curled upwards whereas those of *B. kahlenbergi*, *B. sabulosum* and *B. vagans* are straight (Fig. 20) (J. Mendoza & R. West, pers. obs.).

Figure 18. *Brachypelma epicureanum*, adult female from Yucatán State, Mexico

Figure 19. *Brachypelma epicureanum*, adult male from Quintana Roo State, Mexico

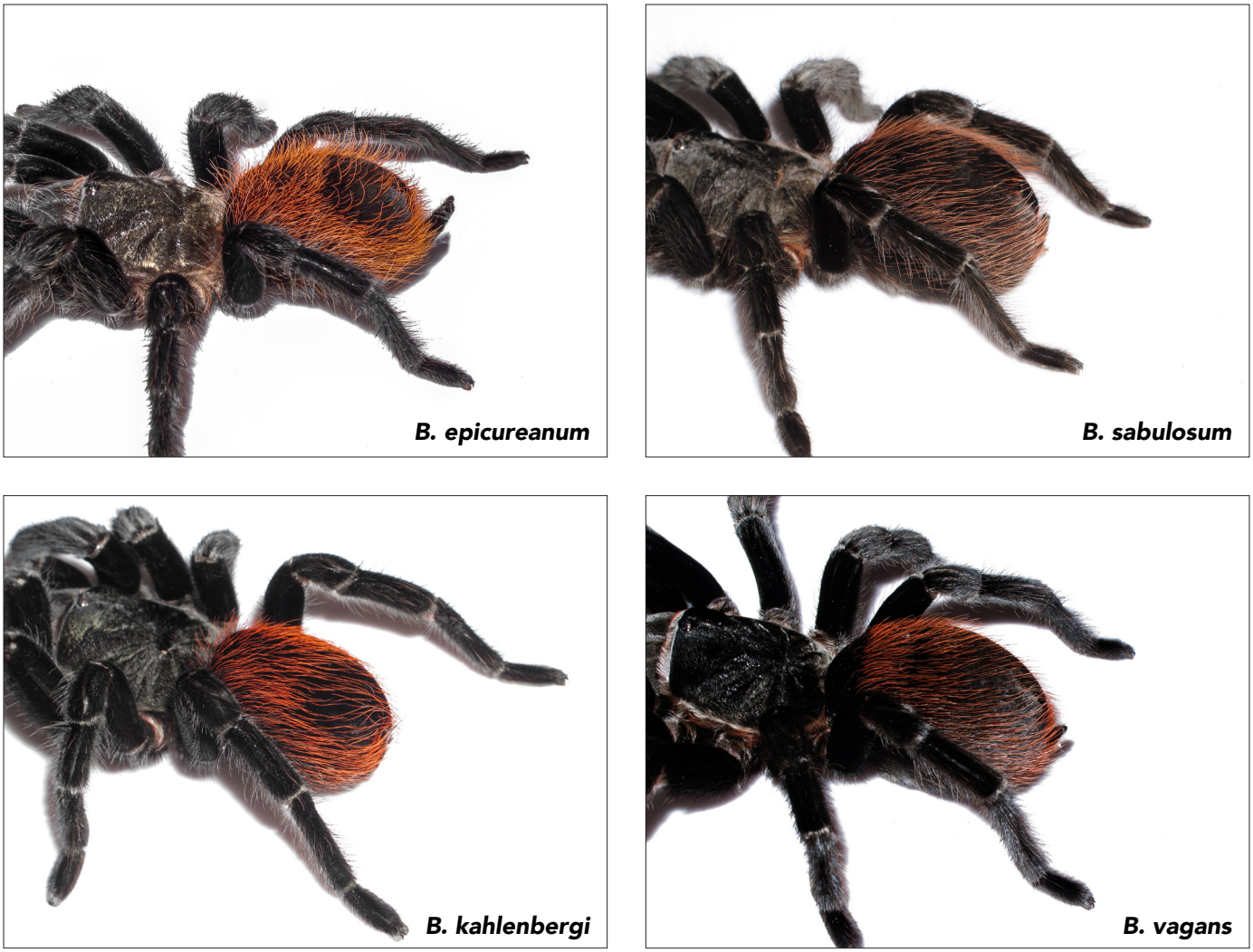

Figure 20. Comparison of *B. epicureanum*, *B. kahlenbergi*, *B. sabulosum* and *B. vagans* abdomens

Note: The black patch on the abdomen of *B. epicureanum* is more distinct and circular in shape than the black patches exhibited by *B. kahlenbergi*, *B. sabulosum* and *B. vagans*. The scattered longer red hairs on the abdomen of *B. epicureanum* are curved whereas the red or orange hairs of *B. kahlenbergi*, *B. sabulosum* and *B. vagans* are straight.

Figure 21. *Brachypelma epicureanum*, wild-caught juvenile from Yucatán State, Mexico (age unknown)

Brachypelma kahlenbergi Rudloff, 2008

CITES listing: Appendix II

Common names: New Mexican tarantula (English)
Nouvelle mygale du Mexique (French)
Nueva tarántula mexicana (Spanish)

Synonyms: None

Taxonomic note: Ongoing revisions of the genus *Brachypelma* indicate that this species belongs to different genus (Mendoza & Francke, 2018).

Distribution: Endemic to Mexico occurring east of the Sierra Madre Oriental in Veracruz State, eastern San Luis Potosi, Querétaro and Hidalgo States, and northeastern Puebla and Oaxaca States (Mendoza & Francke, 2018).

Conservation status: In 2018, the IUCN assessed the status of *B. kahlenbergi* and categorized the species as Least Concern (LC) (Fukushima et al., 2018).

Trade: Uncommon in international trade. According to the UNEP-WCMC CITES Trade Database, 25–35 live *B. kahlenbergi* were traded internationally in the years 2006–2016. None were reported to be declared as wild-caught and all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 45 mm; females average 50 mm.

Carapace: Females typically have a black carapace, which may be bordered with orange (Figs. 22 & 23). Large females may have a lighter (gray) carapace, but this is uncommon. Males have a black carapace (Fig. 24) In both sexes the carapace is slightly iridescent (J. Mendoza & R. West, pers. obs.).

Legs: Females have black legs. Older females typically have two lighter parallel longitudinal lines on the patellae (Figs. 22 & 23). Males have entirely black legs (Fig. 24) (J. Mendoza & R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are entirely covered in shorter black hairs and numerous scattered longer bright red hairs that are **not** curled upwards (Fig. 20). The number of scattered longer red hairs is reduced on the dorsal posterior area of the abdomen creating a poorly defined black patch of the shorter hairs (Figs. 21 & 22–24) (J. Mendoza & R. West, pers. obs.).

Juveniles: The carapace of juveniles is typically either gray or black and bordered with orange hairs, or completely light orange in color (Fig. 25) (J. Mendoza & R. West, pers. obs.). However, the color is variable and may sometimes have a slight metallic copper tone (S. Longhorn, pers. comm.). The legs range in color from grayish-brown with darker femurs to all black, depending on the specimen's age (S. Longhorn, pers. comm.). The abdomen is entirely covered in shorter black hairs with longer scattered orange or reddish hairs (Fig. 25) (J. Mendoza & R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma epicureanum, B. sabulosum, B. vagans*

Brachypelma epicureanum, *B. kahlenbergi*, *B. sabulosum* and *B. vagans* look almost identical to the naked eye. Although there are morphological differences between the species, they tend to be slight and somewhat inconsistent. Identification of specimens of these species is best confirmed through DNA analysis.

Carapace: *B. kahlenbergi* has a carapace that is slightly iridescent whereas the carapaces of *B. epicureanum*, *B. sabulosum* and *B. vagans* are matte in appearance (J. Mendoza pers. obs.).

Abdomen: The black patch on the dorsal posterior abdominal area of *B. kahlenbergi* is less distinct than the circular black patch exhibited by *B. epicureanum*. The scattered longer red hairs on the abdomen of *B. kahlenbergi* are not curled upwards like those of *B. epicureanum* and are more abundant and brightly colored than those of *B. sabulosum* and *B. vagans* (Fig. 20) (J. Mendoza & R. West, pers. obs.).

Figure 22. *Brachypelma kahlenbergi*, adult female from Veracruz State, Mexico

Note: This specimen has a black carapace that is typical of the species.

Figure 23. *Brachypelma kahlenbergi*, adult female from Veracruz State, Mexico

Note: This specimen has a black carapace that is bordered with orange, as is sometimes exhibited by the species.

Figure 24. *Brachypelma kahlenbergi*, adult male from Oaxaca State, Mexico

Figure 25. *Brachypelma kahlenbergi*, wild-caught juvenile from Oaxaca State, Mexico (age unknown)

Brachypelma sabulosum (F. O. Pickard-Cambridge, 1897)

CITES listing: Appendix II

Common names: Guatemalan redrump tarantula (English)
Mygale à abdomen rouge du Guatemala (French)
Tarántula guatemalteca de panza roja (Spanish)

Synonyms: *Eurypelma sabulosum* F. O. Pickard-Cambridge, 1897
Delopelma sabulosum (F. O. Pickard-Cambridge, 1897)
Rhechostica sabulosa (F. O. Pickard-Cambridge, 1897)
Avicularia sabulosa (F. O. Pickard-Cambridge, 1897)

Taxonomic note: Ongoing revisions of the genus *Brachypelma* indicate that this species belongs to different genus (Mendoza & Francke, 2018).

Distribution: Native to northern Guatemala and northeastern Chiapas State, Mexico (S. Longhorn pers. comm.; Mendoza & Francke, 2018).

Conservation status: In 2018, the IUCN assessed the status of *B. sabulosum* and categorized the species as Data Deficient (DD) (Fukushima et al., 2018).

Trade: Rare in international trade. According to the UNEP-WCMC CITES Trade Database, during 2006–2016, only one specimen of *B. sabulosum* was recorded in trade. The specimen was captive-bred and traded for the purpose of a circus or travelling exhibition (CITES, 2018b).

Description:

Size: Male average body length of 50 mm; females average 60 mm.

Carapace: Females have a black carapace, bordered with orange hairs (Fig. 26). Males have a black carapace, bordered with metallic gray hairs (Fig. 27) (J. Mendoza & R. West, pers. obs.).

Legs: Females have black legs. Older females typically have two lighter parallel longitudinal lines on the patellae (Fig. 26). Males have entirely black legs (Fig. 27) (J. Mendoza & R. West, pers. obs.).

Abdomen: Females have an abdomen that is entirely covered in shorter black hairs and numerous scattered longer pale orange hairs that are **not** curled upwards (Fig. 20). Males have an abdomen that is entirely covered in shorter black hairs and numerous scattered longer red hairs that are **not** curled upwards. The number of scattered longer red or orange hairs is reduced on the dorsal posterior area of the abdomen creating a poorly defined black patch of the shorter hairs (Figs. 20, 26 & 27) (J. Mendoza & R. West, pers. obs.).

Juveniles: The carapace of juveniles is dark in color and bordered with grayish or orange hairs. The legs are black. The legs range in color from dark gray in very young specimens to black in older juveniles (S. Longhorn, pers. comm.; J. Mendoza & R. West, pers. obs.). The abdomen is entirely covered in shorter black hairs and scattered longer orange or reddish hairs (J. Mendoza & R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma epicureanum, B. kahlenbergi, B. vagans*

Brachypelma epicureanum, *B. kahlenbergi*, *B. sabulosum* and *B. vagans* look almost identical to the naked eye. Although there are morphological differences between the species, they tend to be slight and somewhat inconsistent. Identification of specimens of these species is best confirmed through DNA analysis.

Carapace: *B. sabulosum* has a carapace that is bordered by orange hairs (on females) or metallic gray hairs (on males), whereas *B. vagans* does not. The carapace of *B. sabulosum* is matte in appearance and not slightly iridescent like the carapace of *B. kahlenbergi* (J. Mendoza & R. West, pers. obs.).

Legs: *B. sabulosum* has sparse longer reddish hairs on leg IV which are not exhibited by *B. vagans* (J. Mendoza & R. West, pers. obs.).

Abdomen: The black patch on the dorsal posterior abdominal area of *B. sabulosum* is less distinct than the circular black patch exhibited by *B. epicureanum*. The scattered longer hairs on the abdomen of *B. sabulosum* are pale orange rather than the red exhibited by *B. kahlenbergi*, and are not curled upwards like those of *B. epicureanum* (Fig. 20) (J. Mendoza & R. West, pers. obs.).

Figure 26. *Brachypelma sabulosum*, adult female from Chiapas State, Mexico

Note: This specimen has a black carapace, bordered with orange hairs, as is typical of females of the species.

Figure 27. *Brachypelma sabulosum*, adult male from Chiapas State, Mexico

Note: This specimen has a black carapace, bordered with metallic gray hairs, as is typical of males of the species.

Brachypelma schroederi Rudloff, 2003

CITES listing: Appendix II

Common names: Mexican blackvelvet tarantula (English)
Mygale de noir velours du Mexique (French)
Tarántula mexicana de terciopelo negro (Spanish)

Synonyms: None

Taxonomic note: Ongoing revisions of the genus *Brachypelma* indicate that this species belongs to different genus (Mendoza & Francke, 2018).

Distribution: Endemic to Mexico, occurring in the Central Valley region of Oaxaca State (Mendoza & Francke, 2018).

Conservation status: In 2018, the IUCN assessed the status of *B. schroederi* and categorized the species as Endangered (EN) (Fukushima et al., 2018).

Trade: Uncommon in international trade. According to the UNEP-WCMC CITES Trade Database, 36–42 live *B. schroederi* were traded internationally in the years 2006–2016. None were reported to be declared as wild-caught and all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 38 mm; females average 48 mm.

Carapace: Females have a black carapace (Fig. 28), which may fade to brown between molts. Males have a black carapace (Fig. 29) (J. Mendoza & R. West, pers. obs.).

Legs: Females have black legs. Older females typically have two lighter parallel longitudinal lines on the patellae (Figs. 28). Males have entirely black legs (Fig. 29) (J. Mendoza & R. West, pers. obs.).

Abdomen: Both males and females have an abdomen that is entirely covered in short black hairs (Figs. 28 & 29). Males may also have very few longer reddish hairs intermixed with the shorter black hairs on the abdomen (Fig. 29) (J. Mendoza & R. West, pers. obs.).

Juveniles: The carapace of young juveniles is light brown and darkens as the specimen ages. The legs of juveniles range from dark gray to grayish-brown with darker femurs, darkening with age. The abdomen is entirely covered in shorter black hairs and very few longer dark reddish-brown hairs (Fig. 30) (S. Longhorn pers. comm.; J. Mendoza & R. West, pers. obs.).

Similar CITES-listed species: None

Figure 28. *Brachypelma schroederi*, adult female from Oaxaca State, Mexico

Note: This specimen exhibits the distinctive completely black coloration typical for females of this species.

Figure 29. *Brachypelma schroederi*, adult male from Oaxaca State, Mexico

Note: This specimen has scattered longer reddish hairs on the abdomen that may be exhibited by males of this species, in contrast to the all black females.

Figure 30. *Brachypelma schroederi*, wild-caught juvenile from Oaxaca State, Mexico (age unknown)

Brachypelma vagans (Ausserer, 1875)

CITES listing: Appendix II

Common names: Mexican redrump tarantula (English)
Mygale à abdomen rouge du Mexique (French)
Tarántula mexicana cadera roja, tarántula de terciopelo, tarántula de trasero rojo (Spanish)

Synonyms: *Eurypelma vagans* Ausserer, 1875
Eurypelma dupontii Becker, 1879
Euathlus vagans (Ausserer, 1875)
Avicularia vagans (Ausserer, 1875

Taxonomic note: Ongoing revisions of the genus *Brachypelma* indicate that this species belongs to different genus (Mendoza & Francke, 2018)

Distribution: Native to Belize, Guatemala and Mexico. In Mexico, the species occurs in southern Yucatán State, southeast of Campeche State, northeastern Chiapas State and Quintana Roo State (Mendoza & Francke, 2018). An introduced population of *B. vagans* has become established in the St. Lucie County area of Florida, United States (Edwards & Hibbard, 1999; Edwards & Hibbard, 2003).

Conservation status: In 2018, the IUCN assessed the status of *B. vagans* and categorized the species as Least Concern (LC) (Fukushima et al., 2018).

Trade: Common in international trade. According to the UNEP-WCMC CITES Trade Database, 875–1,072 live *B. vagans* were traded internationally in the years 2006–2016. Only two specimens were reported to be wild-caught, and almost all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 45 mm; females average 60 mm.

Carapace: Females have a black carapace, which may be bordered with lighter colored hairs (Fig. 31). Males have a black carapace (Fig. 32) (J. Mendoza & R. West, pers. obs.).

Legs: Females have black legs. Older females typically have two lighter parallel longitudinal lines on the patellae (Fig. 31). Males have entirely black legs (Fig. 32) (J. Mendoza & R. West, pers. obs.).

Abdomen: Females have an abdomen that is entirely covered in shorter black hairs with numerous scattered longer pale orange hairs that are **not** curled upwards (Fig. 20). Males have an abdomen that is entirely covered in shorter black hairs with numerous scattered longer red hairs that are **not** curled upwards. The number of scattered longer red or orange hairs is reduced on the dorsal posterior area of the abdomen creating a poorly defined black patch of the shorter hairs (Figs. 20, 31 & 32) (J. Mendoza & R. West, pers. obs.).

Juveniles: The carapace of juveniles is typically black, sometimes bordered with pale yellow. The legs range from gray to black, depending on the age of the specimen. The abdomen is entirely covered in black hairs with scattered longer orange or reddish hairs (Fig. 33) (J. Mendoza & R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma epicureanum, B. kahlenbergi, B. sabulosum*

Brachypelma epicureanum, *B. kahlenbergi*, *B. sabulosum* and *B. vagans* look almost identical to the naked eye. Although there are morphological differences between the species, they tend to be slight and somewhat inconsistent. Identification of specimens of these species is best confirmed through DNA analysis.

Carapace: The carapace of *B. vagans* is matte in appearance and not slightly iridescent like the carapace of *B. kahlenbergi* (J. Mendoza & R. West, pers. obs.).

Legs: *B. vagans* does not have the sparse longer reddish hairs on leg IV that are exhibited by *B. sabulosum* (J. Mendoza & R. West, pers. obs.).

Abdomen: The black patch on the dorsal posterior abdominal area of *B. vagans* is less distinct than the circular black patch exhibited by *B. epicureanum*. The scattered longer hairs on the abdomen of *B. sabulosum* are pale orange rather than the red exhibited by *B. kahlenbergi*, and are not curled upwards like those of *B. epicureanum* (Fig. 20) (J. Mendoza & R. West, pers. obs.).

Figure 31. *Brachypelma vagans*, adult female from Campeche State, Mexico

Figure 32. *Brachypelma vagans*, adult male from Campeche State, Mexico

Figure 33. *Brachypelma vagans*, wild-caught juvenile from Campeche State, Mexico (age unknown)

Brachypelma verdezi Schmidt, 2003

CITES listing: Appendix II

Common names: Mexican rosegray tarantula (English)
Mygale rose-grise du Mexique (French)
Tarántula mexicana rosa-gris (Spanish)

Synonyms: None

Taxonomic note: Ongoing revisions of the genus *Brachypelma* indicate that this species belongs to different genus (Mendoza & Francke, 2018).

Distribution: Endemic to Mexico, mainly in the Sierra Madre del Sur region around Chilpancingo to Acapulco, Guerrero State and in the border with southwestern Oaxaca State (Mendoza & Francke, 2018).

Conservation status: In 2018, the IUCN assessed the status of *B. verdezi* and categorized the species as Near Threatened (NT) (Fukushima et al., 2018).

Trade: Uncommon in international trade. According to the UNEP-WCMC CITES Trade Database, 58–64 live *B. verdezi* were traded internationally in the years 2006–2016. None were reported to be wild-caught, and all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 50 mm; females average 55 mm.

Carapace: Females have a brown carapace, typically with black in a triangular shape extending from the anterior edge of the carapace back to the fovea (Figs. 34 & 35). Males have a black carapace (Fig. 36) (J. Mendoza & R. West, pers. obs.).

Legs: Both males and females have black legs with scattered longer buff-colored hairs on leg IV (Figs. 34–36). Older females typically have two lighter parallel longitudinal lines on the patellae (Fig. 34 & 35). (J. Mendoza & R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are entirely covered in shorter black hairs with evenly scattered longer buff-colored hairs (Figs. 34–36) (J. Mendoza & R. West, pers. obs.).

Juveniles: The carapace of juveniles is brown, sometimes with black in a triangular shape extending from anterior edge of the carapace back to the fovea. The legs range from gray (with darker femurs) to black, depending on the age of the specimen. Leg IV has scattered longer buff-colored hairs. The abdomen is entirely covered in shorter black hairs with scattered longer buff-colored hairs (Fig. 37) (J. Mendoza & R. West, pers. obs.).

Similar CITES-listed species: None

Figure 34. *Brachypelma verdezi*, adult female from Guerrero State, Mexico

Note: This specimen exhibits a brown carapace with black in a triangular shape extending from the anterior edge of the carapace back to the fovea, as is typical of females of the species.

Figure 35. *Brachypelma verdezi*, adult female from Guerrero State, Mexico

Note: This specimen exhibits the distinctive brown carapace typical of females of this species, but without the typical dark triangular shape extending from the anterior edge of the carapace back to the fovea. The scattered longer buff-colored hairs on leg IV (arrow) are characteristic of the species.

Figure 36. *Brachypelma verdezi*, adult male from Guerrero State, Mexico

Note: This specimen exhibits a black carapace typical for males of this species. The scattered longer buff-colored hairs on leg IV (arrow) are characteristic of the species.

Figure 37. *Brachypelma verdezi*, captive-bred juvenile (10th instar, 22 months old)

Redleg *Brachypelma*

Brachypelma klaasi

Brachypelma baumgarteni

Brachypelma boehmei

Brachypelma emilia

Brachypelma hamorii

Brachypelma auratum

Brachypelma smithi

Brachypelma auratum Schmidt, 1992

CITES listing: Appendix II

Common names: Mexican flameknee tarantula (English)
Mygale à genoux de feu du Mexique (French)
Tarántula mexicana rodilla de llama (Spanish)

Synonyms: None

Distribution: Endemic to Mexico, occurring mainly north of the Sierra Madre del Sur and south of the Transverse Neovolcanic Ranges in the Balsas River Basin, from eastern Jalisco State, southwestern Mexico State, northern Michoacán State and northwestern Guerrero State (Mendoza & Francke, 2018).

Conservation status: In 2018, the IUCN assessed the status of *B. auratum* and categorized the species as Near Threatened (NT) (Fukushima et al., 2018).

Trade: Common in international trade. According to the UNEP-WCMC CITES Trade Database, 1,008–1,059 live *B. auratum* were traded internationally in the years 2006–2016. None were reported to be wild-caught, and almost all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 45 mm; females average 60 mm.

Carapace: Both females and males have a black carapace, bordered with buff or orange (Figs. 38 & 39). In some female specimens there is a buff or orange area posterior to the fovea (Fig. 40) (Mendoza & Francke, 2018; R. West, pers. obs.).

Legs: The patellae of both males and females has a central reddish or orange flame-shaped area, with a white ring on the patella, tibia and metatarsi joints (Figs. 13 & 38–40) (Mendoza & Francke, 2018; R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are covered in black hairs and scattered longer orange hairs (Figs. 38–40) (Mendoza & Francke, 2018; R. West, pers. obs.).

Juveniles: The carapace of juveniles is buff with a darker cephalic area. The patellae have a central reddish or orange flame-shaped area, with white rings on the patella and tibiae. A white ring may also be evident on the metatarsi joints. The abdomen is covered in shorter black hairs and scattered longer orange hairs (Fig. 41) (Mendoza & Francke, 2018; R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma hamorii, B. smithi*

Legs: *B. auratum* has legs that are entirely black except for the orange or red flame-shape in the center of the patellae, and does not have the orange or yellow colors on the tibia or metatarsi that are exhibited by *B. hamorii* and *B. smithi* (Mendoza & Francke, 2018; R. West, pers. obs.).

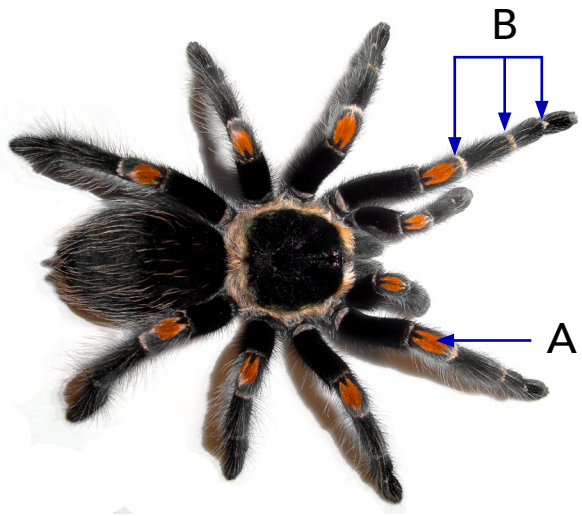

Figure 38. *Brachypelma auratum*, adult female from Michoacán State, Mexico

Note: This specimen exhibits the black carapace, bordered with buff (or orange) that is typical of both females and males of the species. The legs of both males and females have a central reddish or orange flame-shaped area (A) on the patellae and white rings on the patella, tibia and metatarsi joints (B).

Figure 39. *Brachypelma auratum*, adult male from Michoacán State, Mexico

Figure 40. *Brachypelma auratum*, adult female from Guerrero State, Mexico

Note: This specimen exhibits the black carapace with a buff (or orange) area posterior to the fovea that is seen on some females of the species.

Figure 41. *Brachypelma auratum*, captive-bred juvenile (6th instar, 24 months old)

Brachypelma baumgarteni Smith, 1993

CITES listing: Appendix II

Common names: Mexican orangebeauty tarantula (English)
Mygale orange du Mexique (French)
Tarántula mexicana naranja (Spanish)

Synonyms: None

Distribution: Endemic to Mexico with a very small distribution in the coastal region of the Sierra Madre del Sur range, west of the Balsas River Basin, in southeastern Michoacán State (Mendoza & Francke, 2018).

Conservation status: In 2018, the IUCN assessed the status of *B. baumgarteni* and categorized the species as Endangered (EN) (Fukushima et al., 2018).

Trade: Common in international trade. According to the UNEP-WCMC CITES Trade Database, 960–1,108 live *B. baumgarteni* were traded internationally in the years 2006–2016. None were reported to be wild-caught, and almost all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 50 mm; females average 65 mm.

Carapace: Females have a black carapace that is bordered with yellow or orange (Fig. 42). In some female specimens the black is reduced to a triangular shape extending from the anterior edge of the carapace back to the fovea (Fig. 43). Males have an orange carapace (Fig. 44) (Mendoza & Francke, 2018; R. West, pers. obs.).

Legs: The patellae of males and females are yellowish with a central flame-shaped reddish area (Figs. 42–44). The tibiae and metatarsi are pale orange with grayish areas and a distinctive diagonal yellowish line on the metatarsi (Fig. 45) (Mendoza & Francke, 2018; R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are covered in black hairs with scattered longer, yellowish hairs (Figs. 42–44) (Mendoza & Francke, 2018; R. West, pers. obs.).

Juveniles: The carapace of juveniles exhibits the same color patterns as adult females, but much paler. The patellae are buff with a noticeable reddish-orange flame-shape. The tibiae and metatarsi are yellowish. The abdomen is covered in shorter black hairs with scattered longer yellowish hairs (Fig. 46) (Mendoza & Francke, 2018; R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma boehmei*

Legs: *B. baumgarteni* has yellowish legs with a deep orange flame-shape in the center of the patellae in contrast to the completely orange legs of *B. boehmei* (Mendoza & Francke, 2018; R. West, pers. obs.).

Figure 42. *Brachypelma baumgarteni*, adult female from Michoacán State, Mexico

Note: This specimen exhibits the black carapace that is bordered with yellow/orange that is typical of females of the species.

Figure 43. *Brachypelma baumgarteni*, adult female from Michoacán State, Mexico

Note: On this specimen the black on the carapace is reduced to a black triangular shape extending from the anterior edge of the carapace back to the fovea, as is seen on some females of the species.

Figure 44. *Brachypelma baumgarteni*, adult male from Michoacán State, Mexico

Note: This specimen exhibits the orange carapace characteristic of males of the species.

Figure 45. Comparison of *Brachypelma baumgarteni* and *Brachypelma boehmei* legs

Note: *B. baumgarteni* (A) has yellowish legs with a deep orange flame-shape in the center of the patellae and a distinctive diagonal yellowish line on the metatarsi (indicated by the arrow) in contrast to the completely orange legs of *B. boehmei* (B).

Figure 46. *Brachypelma baumgarteni*, captive-bred juvenile (9th instar, 14 months old)

Brachypelma boehmei Schmidt & Klaas, 1993

CITES listing: Appendix II

Common names: Mexican fireleg tarantula (English)
Mygale à pattes rouille du Mexique (French)
Tarántula mexicana pierna de fuego (Spanish)

Synonyms: None

Distribution: Endemic to Mexico with a very small distribution in the coastal region of the Sierra Madre del Sur range and east of the Balsas River Basin in western Guerrero State (Mendoza & Francke, 2018).

Conservation status: In 2018, the IUCN assessed the status of *B. boehmei* and categorized the species as Endangered (EN) (Fukushima et al., 2018).

Trade: Very common in international trade. According to the UNEP-WCMC CITES Trade Database, 7,810–10,021 live *B. boehmei* were traded internationally in the years 2006–2016. None were reported to be wild-caught, and all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 50 mm; females average 60 mm.

Carapace: Both females and males have an orange carapace (Figs. 47 & 48). Some female specimens may have black patches on either side of the eyes (Fig. 49) (Mendoza & Francke, 2018; R. West, pers. obs).

Legs: Both males and females have completely reddish-orange patellae, tibiae and metatarsi on all legs (Figs. 13 and 47–49). In females, when the skin is old, the patellae may appear buff with a central pale orange flame-shaped area (Mendoza & Francke, 2018; R. West, pers. obs.). The color of this flame shape is similar to the rest of the patella but darker (Figs. 13 and 47–49) (S. Longhorn, pers. comm.).

Abdomen: Both males and females have abdomens that are covered in black hairs and scattered longer orange hairs (Figs. 47–49) (Mendoza & Francke, 2018; R. West, pers. obs.).

Juveniles: The carapace of juveniles exhibits the same color patterns as adult females, but much paler. The legs have a noticeable orange flame-shape on the patellae. The tibiae and metatarsi are light orange. The abdomen is covered in shorter black hairs with scattered longer, yellowish hairs (Fig. 50) (Mendoza & Francke, 2018; R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma baumgarteni*

Legs: *B. boehmei* has completely orange legs whereas *B. baumgarteni* has pale orange legs with a distinctive deep orange flame-shape in the center of the patellae (Mendoza & Francke, 2018; R. West, pers. obs.).

Figure 47. *Brachypelma boehmei*, adult female from Guerrero State, Mexico

Note: This specimen exhibits the orange carapace characteristic of males and females of the species.

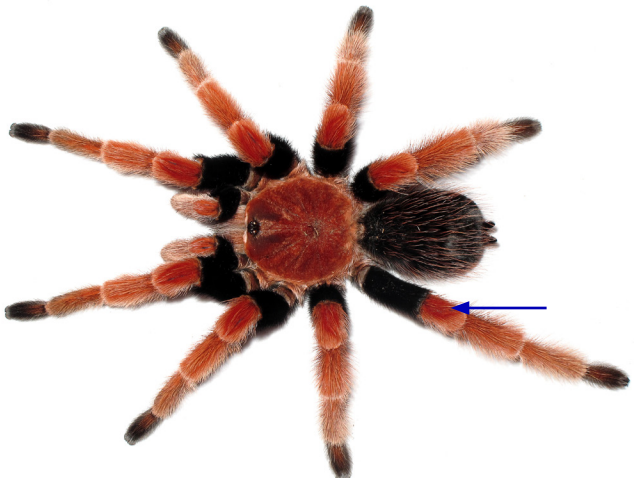

Figure 48. *Brachypelma boehmei*, adult male from Guerrero State, Mexico

Note: Both males and females have completely reddish-orange patellae, tibiae and metatarsi on all legs. The color of the flame shape on the patella (arrow) is similar to the rest of the patella but darker.

Figure 49. *Brachypelma boehmei*, adult female from Guerrero State, Mexico

Note: This specimen exhibits the orange carapace with black patches on either side of the eyes that is seen on some females of the species.

Figure 50. *Brachypelma boehmei*, captive-bred juvenile (9th instar, 3 years old)

Brachypelma emilia (White, 1856)

CITES listing: Appendix II

Common names: Mexican redleg tarantula (English)
Mygale à pattes rouges du Mexique (French)
Tarántula mexicana patas rojas (Spanish)

Synonyms: *Mygale emilia* White, 1856
Eurypelma emilia (White, 1856)
Brachypelma aemilia (White, 1856)
Euathlus emilia (White, 1856)

Distribution: Endemic to Mexico, occurring on the coastal plain west of the Sierra Madre Occidental from southern Sonora State, Sinaloa State, northwestern Nayarit State and inland to western Durango State (Mendoza & Francke, 2018; R. West, pers. obs).

Conservation status: In 2018, the IUCN assessed the status of *B. emilia* and categorized the species as Least Concern (LC) (Fukushima et al., 2018). *Brachypelma emilia* is listed as a Threatened Species in Mexico (DOF, 2010).

Trade: Very common in international trade. According to the UNEP-WCMC CITES Trade Database, 6,133–7,496 live *B. emilia* were traded internationally in the years 2006–2016. None were reported to be wild-caught, and almost all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 40 mm; females average 55 mm.

Carapace: Both males and females have an orange carapace with a dark triangular shape extending from the anterior edge of the carapace back to the fovea (Figs. 51 & 52) (Mendoza & Francke, 2018; R. West, pers. obs).

Legs: Both males and females have black patellae and orange tibiae on all legs. The metatarsus of leg IV is orange (Figs. 13, 51 & 52) (Mendoza & Francke, 2018; R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are covered in shorter black hairs and scattered longer, reddish hairs (Figs. 51 & 52) (Mendoza & Francke, 2018; R. West, pers. obs.).

Juveniles: The carapace and legs of juveniles exhibit the same color patterns as adults, but much paler. The carapace and patellae of recently molted specimens may be yellowish. The abdomen is covered in shorter black hairs with scattered longer reddish-colored hairs (Fig. 53) (Mendoza & Francke, 2018; R. West, pers. obs.).

Similar CITES-listed species: None

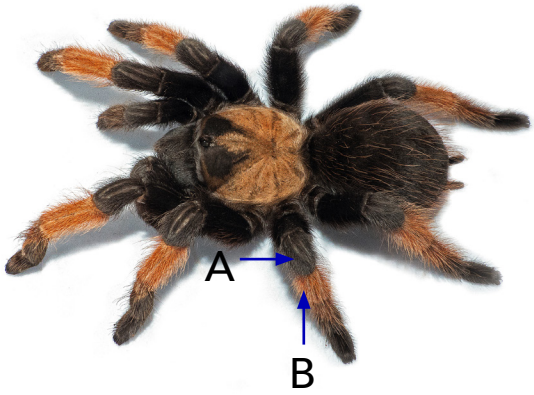

Figure 51. *Brachypelma emilia*, adult female from Nayarit State, Mexico

Note: This specimen exhibits the orange carapace with a dark triangular shape, extending from the anterior edge of the carapace back to the fovea, that is characteristic of both males and females of the species. Both males and females have black patellae (A) and orange tibiae (B) on all legs.

Figure 52. *Brachypelma emilia*, adult male from Nayarit State, Mexico

Figure 53. *Brachypelma emilia*, wild-caught juvenile from Nayarit State, Mexico (age unknown)

Brachypelma hamorii Tesmoingt, Cleton & Verdez, 1997

CITES listing: Appendix II

Common names: Mexican orangeknee tarantula (English)
Mygale à genoux orange du Mexique (French)
Tarántula mexicana de rodillas anaranjadas (Spanish)

Synonyms: None

Taxonomic note: Mendoza and Francke (2017) completed a morphological and molecular review of three "red-kneed" *Brachypelma* species (*B. annitha*, *B. hamorii* and *B. smithi*). The authors subsequently redescribed *B. hamorii* and *B. smithi* and determined that *B. annitha* was synonymous with *B. smithi*. The similar-looking species *B. hamorii* and *B. smithi* were found to be separated by the Balsas River (Atoyac River) basin in Guerrero State, Mexico, with *B. smithi* populations concentrated in Guerrero and *B. hamorii* populations primarily concentrated more northerly in Colima and Michoacán States.

Distribution: Endemic to Mexico, occurring southwest of the Sierra Madre Occidental and south of the Transverse Neovolcanic ranges from southeastern Jalisco State, through coastal Colima State, to the northwestern coastal region of Michoacán State (Mendoza & Francke, 2017).

Conservation status: In 2018, the IUCN assessed the status of *B. hamorii* and categorized the species as Vulnerable (VU) (Fukushima et al., 2018).

Trade: Prior to the early 1980's, most (if not all) "*Brachypelma smithi*" were collected and exported from Colima State until that trade was curtailed by the Mexican government (R. West, pers. obs.). As noted previously, specimens from Colima State are now known to be *B. hamorii*. Hence, specimens of *B. hamorii* have erroneously been sold as *B. smithi* in the international commercial tarantula pet trade for many years. It is likely that a large proportion of the *B. smithi* traded are actually *B. hamorii* (J. Mendoza & R. West, pers. obs.).

No trade in specimens of *B. hamorii* was recorded in the UNEP-WCMC CITES Trade Database during 2006–2016 (CITES, 2018b). However, the prevalence of *B. hamorii* in international trade was not understood during this period as the taxonomic revision of *B. hamorii* and *B. smithi* by Mendoza and Francke was not published until 2017.

Description:

Size: Males have an average body length of 48 mm; females average 55 mm.

Carapace: Females have a carapace that is either mainly black and bordered with pink or orange (Fig. 54); or with a black radiating pattern bordered with pale orange-yellow (Fig. 55). Males have a

carapace that is black anterior to the fovea, pale yellow posterior to the fovea, and bordered with pale yellow (Fig. 56). Rare variants may have a carapace that is mostly yellowish (Mendoza & Francke, 2017; J. Mendoza & R. West, pers. obs.).

Legs: Males and females exhibit the same pattern of leg coloration. The femora are black with a pale ring at the joint with the patellae. The patellae are pale orange with a brighter yellow-orange flame-shape on the dorsal sides, and typically black on the lateral sides. The half of each tibia closest to the body is black while the terminal half is pale orange. The metatarsi are black with a pale yellow ring at the terminal end. The patellae, tibiae and metatarsi exhibit numerous prominent, long light gray hairs (Figs. 13, 54–56) (Mendoza & Francke, 2017; R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are covered in black hairs and scattered longer reddish hairs (Figs. 54–56) (Mendoza & Francke, 2017; R. West, pers. obs.).

Juveniles: The carapace of juveniles is black and bordered with light pink or orange. The legs exhibit a color pattern similar to that of adults, but paler. The abdomen is colored in shorter black hairs and scattered longer yellowish hairs (Figs. 57 & 58) (Mendoza & Francke, 2017; R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma smithi*

Legs: The yellow-orange patellae of *B. hamorii* are not as brightly colored as the orange-red patellae exhibited by *B. smithi*. The sides of the patellae are typically black rather than the pale orange exhibited by *B. smithi*. The longer hairs on the legs of *B. hamorii* are light gray whereas the same hairs are yellowish on *B. smithi* (Fig. 59) (Mendoza & Francke, 2017; R. West, pers. obs.).

Chelicera: *B. hamorii* typically have longitudinal lines of lighter contrasting hairs on the chelicera, which are not exhibited by *B. smithi* (Fig. 60). Rare variant specimens of *B. hamorii* do not have this character (Mendoza & Francke, 2017; J. Mendoza & R. West, pers. obs.).

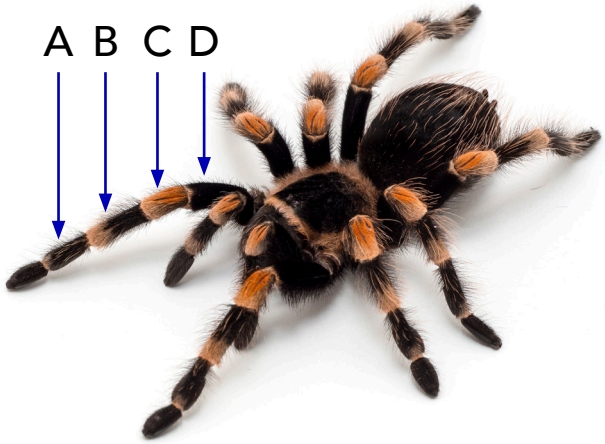

Figure 54. *Brachypelma hamorii*, captive-bred subadult female

Note: This specimen exhibits the mainly black carapace bordered with pink or orange that is typical of females of the species. Both males and females have metatarsi (A) that are black with a pale yellow ring at the terminal end; tibia (B) that are half black (closest to the body) and half pale orange (furthest from the body); patellae (C) that are pale orange with a brighter yellow-orange flame-shape on the dorsal sides, and are typically black on the lateral sides; and femora (D) that are black with a pale ring at the joint with the patellae.

Figure 55. *Brachypelma hamorii*, adult female from Michoacán State, Mexico

Note: This specimen exhibits the black radiating pattern bordered with pale orange-yellow that may be seen on some females of the species.

Figure 56. *Brachypelma hamorii*, adult male from Colima State, Mexico

Note: This specimen exhibits a carapace that is black anterior to the fovea, pale yellow posterior to the fovea, and bordered with pale yellow, as is typical of males of the species.

Figure 57. *Brachypelma hamorii*, captive-bred juvenile (8th instar, eight months old)

Figure 58. *Brachypelma hamorii*, captive-bred juvenile (10th instar, 26 months old)

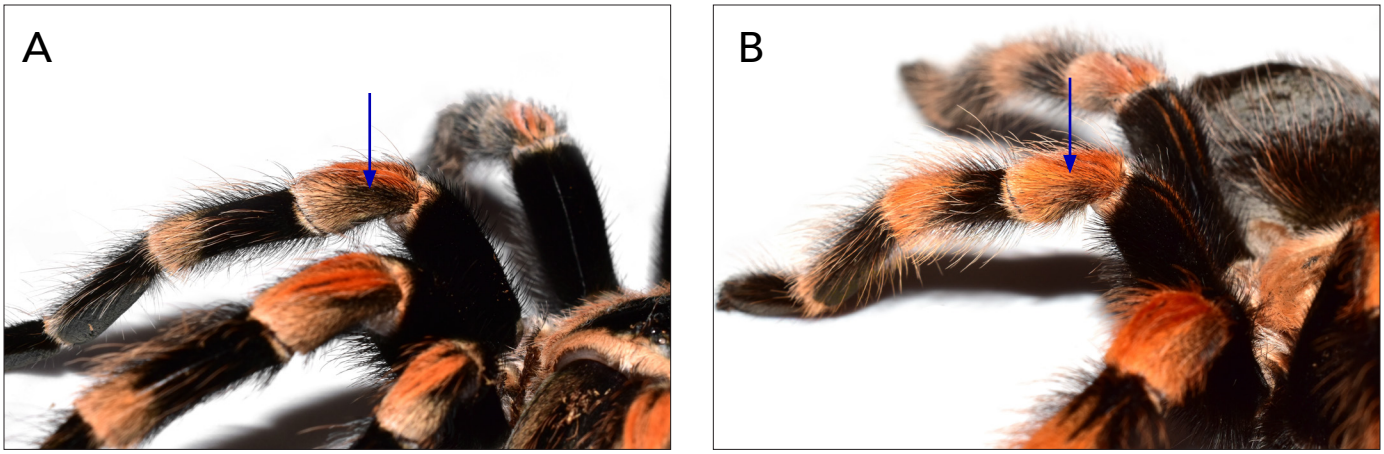

Figure 59. Comparison of *Brachypelma hamorii* and *Brachypelma smithi* legs

Note: The arrows in these photos point to the sides of the patellae which are typically black on *B. hamorii* (A) rather than the pale orange exhibited by *B. smithi* (B). The longer hairs on the legs of *B. hamorii* are gray in color whereas the same hairs are yellowish on *B. smithi*.

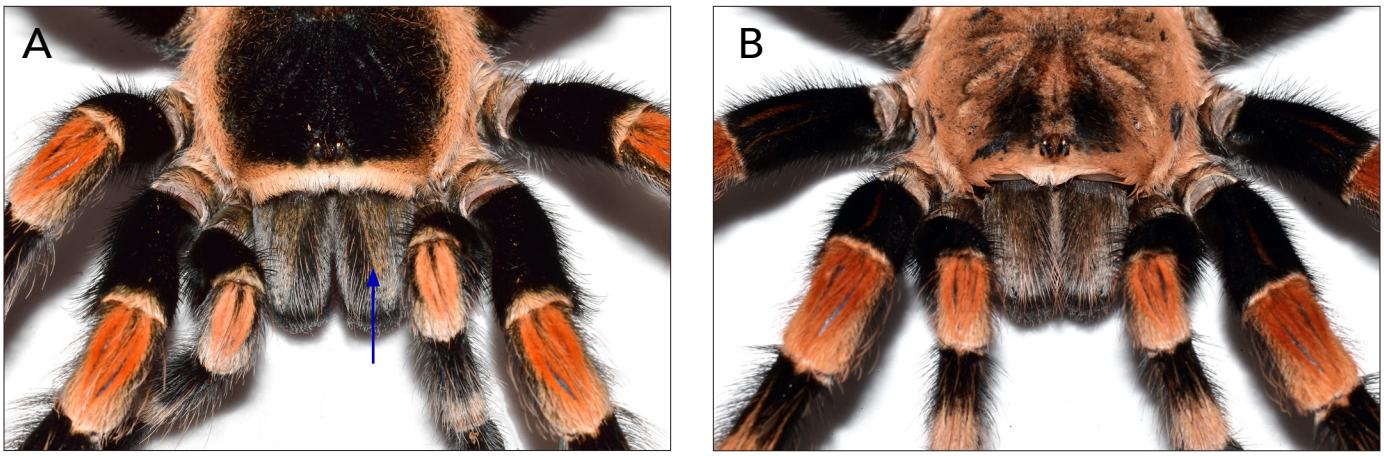

Figure 60. Comparison of *Brachypelma hamorii* and *Brachypelma smithi* chelicera

Note: *B. hamorii* (A) typically have longitudinal lines of lighter contrasting hairs on the chelicera (indicated by the arrow) which are not exhibited by *B. smithi* (B). This character may be missing on rare specimens of *B. hamorii*.

Brachypelma klaasi (Schmidt & Krause, 1994)

CITES listing: Appendix II

Common names: Mexican pink tarantula (English)
Mygale rose du Mexique (French)
Tarántula rosa mexicana (Spanish)

Synonyms: *Brachypelmides klaasi* Schmidt & Krause, 1994

Distribution: Endemic to Mexico, occurring on the coastal side of the Sierra Madre Occidental range in western Jalisco State to western Colima State (Mendoza & Francke, 2018; R. West, pers. obs.).

Conservation status: In 2018, the IUCN assessed the status of *B. klaasi* and categorized the species as Near Threatened (NT) (Fukushima et al., 2018).

Trade: Common in international trade. According to the UNEP-WCMC CITES Trade Database, 492–512 live *B. klaasi* were traded internationally in the years 2006–2016. None were reported to be wild-caught, and almost all were traded for commercial purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 50 mm; females average 60 mm.

Carapace: Both males and females have a black carapace that is bordered with light pink or orange (Figs. 61 & 62) (Mendoza & Francke, 2018; R. West, pers. obs.).

Legs: Both males and females have black femora, and patellae, tibiae and metatarsi that are covered in longer, pinkish hairs (Figs.13, 61 & 62) (Mendoza & Francke, 2018; R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are covered in shorter black hairs and scattered longer, red hairs. Red hairs are more abundant in adult males (Figs. 61 & 62) (Mendoza & Francke, 2018; R. West, pers. obs.).

Juveniles: The carapace of juveniles is dark, but paler than that of adults. The patellae, tibiae and metatarsi are pinkish. The abdomen is covered in shorter black hairs and scattered longer orange hairs (Fig. 63) (Mendoza & Francke, 2018; R. West, pers. obs.).

Similar CITES-listed species: None

Figure 61. *Brachypelma klaasi*, adult female from Jalisco State, Mexico

Note: This specimen exhibits the black carapace, bordered with light pink (or orange) that is typical of both males and females of the species.

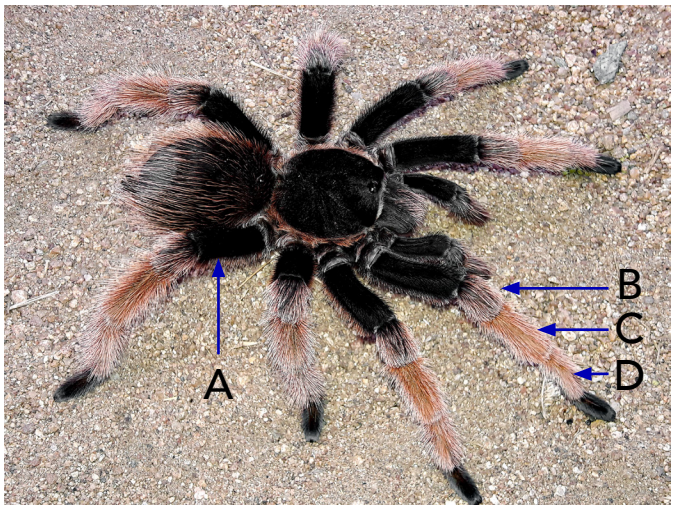

Figure 62. *Brachypelma klaasi*, adult male from Jalisco State, Mexico

Note: Both males and females have black femora (A), and patellae (B), tibiae (C) and metatarsi (D) that are covered in longer, pinkish hairs.

Figure 63. *Brachypelma klaasi*, captive-bred juvenile (9th instar, 16 months old)

Brachypelma smithi (F. O. Pickard-Cambridge, 1897)

CITES listing: Appendix II

Common names: Mexican redknee tarantula (English)
Mygale à genoux rouges du Mexique (French)
Tarántula mexicana de rodillas rojas (Spanish)

Synonyms: *Eurypelma smithi* F. O. Pickard-Cambridge, 1897
Euathlus smithi (F. O. Pickard-Cambridge, 1897)
Avicularia smithi (F. O. Pickard-Cambridge, 1897)
Brachypelma annitha Tesmoingt, Cleton & Verdez, 1997

Taxonomic note: Mendoza and Francke (2017) completed a morphological and molecular review of three "red-kneed" *Brachypelma* species (*B. annitha*, *B. hamorii* and *B. smithi*). The authors subsequently redescribed *B. hamorii* and *B. smithi* and determined that *B. annitha* was synonymous with *B. smithi*. The similar-looking species *B. hamorii* and *B. smithi* were found to be separated by the Balsas River (Atoyac River) basin in Guerrero State, Mexico, with *B. smithi* populations concentrated in Guerrero and *B. hamorii* populations primarily concentrated more northerly in Colima and Michoacán States.

Distribution: Endemic to Mexico, occurring along the coastal side of the Sierra Madre del Sur east of the Balsas River Basin to the Acapulco region, Guerrero State (Mendoza & Francke, 2017).

Conservation status: In 2018, the IUCN assessed the status of *B. smithi* and categorized the species as Near Threatened (NT) (Fukushima et al., 2018). *Brachypelma smithi* is listed as a Threatened Species in Mexico (DOF, 2010).

Trade: Very common in international trade. According to the UNEP-WCMC CITES Trade Database, 21,198–25,482 live *B. smithi* were traded internationally in the years 2006–2016. Of these, only 100 specimens, exported from the USA to Canada, were reported as being wild-caught (and originating in Mexico). All others were reported as being captive-bred or captive-born. Almost all were traded for commercial purposes (CITES, 2018b). *B. smithi* was the most commonly traded species of *Brachypelma* in the years 2006–2016. However, prior to the early 1980's, most (if not all) "*Brachypelma smithi*" were collected and exported from Colima State until that trade was curtailed by the Mexican government (R. West, pers. obs.). As noted previously, specimens from Colima State are now known to be *B. hamorii*. Hence, specimens of *B. hamorii* have erroneously been sold as *B. smithi* in the international commercial tarantula pet trade for many years. It is likely that a large proportion of the *B. smithi* traded are actually *B. hamorii* (J. Mendoza & R. West, pers. obs.).

Description:

Size: Males have an average body length of 60 mm; females average 70 mm.

Carapace: Females have a carapace that is either black and bordered with buff or orange (Fig. 64); with a black radiating pattern and bordered with buff or orange (Fig. 65); or, almost all buff or orange with black around the eyes (Fig. 66). Males normally have an orange carapace (Fig. 67), but rare variants can be mostly black, similar to a female (Mendoza & Francke, 2017; J. Mendoza & R. West, pers. obs.).

Legs: Males and females exhibit the same pattern of leg coloration. The femora are black, sometimes with a pale yellow ring at the terminal end. The patellae are pale orange with a brighter red-orange flame-shape on the dorsal sides. The lateral sides of the patella are typically pale orange. The tibiae are partially black with the terminal half light orange. The metatarsi are black with a pale yellow ring at the terminal end. The patellae, tibiae and metatarsi exhibit numerous prominent, long light yellow hairs (Figs. 13, 64–68) (Mendoza & Francke, 2017; R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are covered in shorter dark brown to black hairs and scattered longer orange hairs (Figs. 64–67) (Mendoza & Francke, 2017; J. Mendoza & R. West, pers. obs.).

Juveniles: The carapace of juveniles is brownish black bordered with light brown. The femora are brownish black. The patellae are yellowish with a pale orange flame-shape on the dorsal side. The half of each tibia closest to the body is brownish while the terminal half is pale orange. The metatarsi are brownish with a paler ring on the joint with the tarsus. The abdomen is covered in dark brown hairs and very few longer yellowish hairs (Fig. 69 & 70) (Mendoza & Francke, 2017; R. West, pers. obs.).

Similar CITES-listed species: *Brachypelma hamorii*

Legs: The red-orange patellae of *B. smithi* are more brightly colored that the orange-red patellae exhibited by *B. hamorii*. The sides of the patellae are pale orange rather than black as typically exhibited by *B. hamorii*. The longer hairs on the legs of *B. smithi* are yellowish rather than the light gray hairs exhibited by *B. hamorii* (Fig. 59 & 68) (Mendoza & Francke, 2017; R. West, pers. obs.).

Chelicera: *B. smithi* do not have the longitudinal lines of lighter contrasting hairs on the chelicera that are typically exhibited by *B. hamorii* (Fig. 60) (Mendoza & Francke, 2017; R. West, pers. obs.).

Figure 64. *Brachypelma smithi*, adult female from Guerrero State, Mexico

Note: This specimen exhibits the black carapace, bordered with buff (or orange) that is typical of females of the species.

Figure 65. *Brachypelma smithi*, adult female from Guerrero State, Mexico

Note: This specimen exhibits a carapace with a black radiating pattern, as seen on some females of the species.

Figure 66. *Brachypelma smithi*, adult female from Guerrero State, Mexico

Note: This specimen exhibits a carapace that is almost all buff (or orange) with black around the eyes, as seen on some females of the species.

Figure 67. *Brachypelma smithi*, adult male from Guerrero State, Mexico

Note: This specimen exhibits the orange carapace that is typical of males of the species.

Figure 68. *Brachypelma smithi*, adult female from Guerrero State, Mexico

Note: Both males and females have metatarsi (A) that are black with a pale yellow ring at the terminal end; tibia (B) that are half black (closest to the body) and half light orange (furthest from the body); patellae (C) that are pale orange with a brighter red-orange flame-shape on the dorsal sides, and typically pale orange on the lateral sides; and femora (D) that are black, sometimes with a pale ring at the joint with the patellae.

Figure 69. *Brachypelma smithi*, captive-bred juvenile (5th instar, nine months old)

Figure 70. *Brachypelma smithi*, captive-bred juvenile (10th instar, 36 months old)

Other CITES-listed tarantulas

Aphonopelma pallidum

Sericopelma embrithes

Brachypelma albopilosum

Brachypelma fossorium

Aphonopelma pallidum (F. O. Pickard-Cambridge, 1897)

CITES listing: Appendix II

Common names: Mexican gray tarantula (English)
Mygale grise du Mexique (French)
Tarántula mexicana gris (Spanish)

Synonyms: *Eurypelma pallidum* F. O. Pickard-Cambridge, 1897 (part)
Brachypelma pallidum (F. O. Pickard-Cambridge, 1897)
Euathlus pallidus (F. O. Pickard-Cambridge, 1897)
Avicularia pallida (F. O. Pickard-Cambridge, 1897)

Distribution: Endemic to Mexico and found mainly in the highlands around Chihuahua city to the Mapimi Basin region of Chihuahua State with small populations ranging into northern Durango State (J. Mendoza, pers. obs.).

Conservation status: In 2018, the IUCN assessed the status of *A. pallidum* and categorized the species as Least Concern (LC) (Fukushima et al., 2018).

Trade: No trade in specimens of *A. pallidum* was recorded in the UNEP-WCMC CITES Trade Database during 2006–2016 (CITES, 2018b).

Description:

Size: Males have an average body length of 38 mm; females average 45 mm.

Carapace: Both males and females have a slightly glossy, golden-brown carapace (Figs. 71 & 72) (J. Mendoza, pers. obs.).

Legs: Both males and females have entirely black legs (Figs. 71 & 72) (J. Mendoza, pers. obs.).

Abdomen: Both males and females have abdomens that are covered in shorter black hairs with scattered longer, orange hairs (Figs. 71 & 72) (J. Mendoza, pers. obs.).

Juveniles: The carapace of juveniles is a paler brown than the adults. The legs are entirely black. The abdomen is covered in shorter black hairs with few scattered, longer, rust-colored hairs (J. Mendoza, pers. obs.).

Similar CITES-listed species: *Brachypelma albiceps*

Carapace: *A. pallidum* has a slightly glossy, golden-brown carapace, in contrast to the dull, golden-yellow carapace of *B. albiceps* (Mendoza & Francke, 2018; R. West, pers. obs.).

Legs: *A. pallidum* has thinner, weaker legs than *B. albiceps* (Mendoza & Francke, 2018; R. West, pers. obs.).

Abdomen: The scattered longer hairs on the abdomen of *A. pallidum* are rust-colored in contrast to the longer, bright red hairs exhibited by *B. albiceps* (Mendoza & Francke, 2018; R. West, pers. obs.).

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Figure 71. *Aphonopelma pallidum*, adult male from Chihuahua State, Mexico

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Figure 72. *Aphonopelma pallidum*, adult male from Chihuahua State, Mexico

Note: This was an older specimen with faded colors, and was likely nearing the end of its life.

Brachypelma albopilosum Valerio, 1980

CITES listing: Appendix II

Common names: Curlyhair tarantula (English)
Mygale à poils frisés (French)
Tarántula de pelo rizado (Spanish)

Synonyms: *Brachypelma albopilosa* Valerio, 1980
Euathlus albopilosus (Valerio, 1980)

Taxonomic note: Ongoing revisions of the genus *Brachypelma* indicate that this species belongs to different genus (Mendoza & Francke, 2018).

Distribution: Native to southeastern Nicaragua and northeastern Costa Rica (Gabriel & Longhorn, 2015). According to some sources *B. albopilosum* may also be found in northern Honduras, although this may be a similar, but different species (S. Longhorn, pers. comm.; J. Mendoza pers. obs.).

Conservation status: In 2018, the IUCN assessed the status of *B. albopilosum* and categorized the species as Least Concern (LC) (Fukushima et al., 2018).

Trade: Very common in international trade. According to the UNEP-WCMC CITES Trade Database, 3,101–4,784 live *B. albopilosum* were traded internationally in the years 2006–2016. However, 95% of these animals were traded in 2015–2016. None were reported to be wild-caught, and almost all were traded for commercial purposes (CITES, 2018b). Anecdotal information suggests that many of the specimens were adults or subadults and were actually wild-caught (S. Longhorn, pers. comm.).

Description:

Size: Males have an average body length of 48mm; females average 55 mm.

Carapace: Both males and females have a brown or dark brown carapace which may exhibit metallic tones or appear "brassy" (Figs. 73–76) (J. Mendoza & R. West, pers. obs.).

Legs: Both males and females have black legs that are covered in abundant, curly white hairs (Figs. 73–76) (Mendoza & Francke, 2017; J. Mendoza & R. West, pers. obs.).

Abdomen: Both males and females have abdomens that are covered in shorter black hairs and scattered curly white hairs (Figs. 73–76) (Mendoza & Francke, 2017; J. Mendoza & R. West, pers. obs.).

Juveniles: The carapace of juveniles is gray. The legs are black and are covered in abundant curly white hairs. The abdomen is covered in shorter black hairs with scattered curly hairs that range in color from white to brownish (Fig. 77) (Mendoza & Francke, 2017; J. Mendoza & R. West, pers. obs.).

Similar CITES-listed species: None

Figure 73. *Brachypelma albopilosum*, adult female from Alajuela Province, Costa Rica

Note: Both males and females have a brown or dark brown carapace which may exhibit metallic tones and black legs that are covered in abundant, curly white hairs.

Figure 74. *Brachypelma albopilosum*, adult female from Alajuela Province, Costa Rica

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Figure 75. *Brachypelma albopilosum*, adult female from Nicaragua

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Figure 76. *Brachypelma albopilosum*, adult male from Nicaragua

Figure 77. *Brachypelma albopilosum*, wild-caught juvenile from Alajuela Province, Costa Rica (age unknown)

Brachypelma fossorium Valerio, 1980

CITES listing: Appendix II

Common names: Costa Rican rustbrown tarantula (English)
Mygale rouille-brune du Costa-Rica (French)
Tarántula rojo óxido de Costa Rica (Spanish)

Synonyms: *Brachypelma fossoria* Valerio, 1980
Euathlus fossorius (Valerio, 1980)

Taxonomic note: Ongoing revisions of the genus *Brachypelma* indicate that this species belongs to different, unique genus (Longhorn & Gabriel, 2018; Mendoza & Francke, 2018).

Distribution: Native to northwestern Costa Rica (on the western side of the Guanacaste mountains) (S. Honsa & S. Longhorn pers. comm.; Valerio, 1980) and western Nicaragua (S. Longhorn, pers. comm.).

Conservation status: In 2018, the IUCN assessed the status of *B. fossorium* and categorized the species as Least Concern (LC) (Fukushima et al., 2018).

Trade: Rare in international trade. According to the UNEP-WCMC CITES Trade Database, during 2006–2016, only one specimen of *B. fossorium* was recorded in trade. The specimen was wild-caught and traded for personal purposes (CITES, 2018b).

Description:

Size: Males have an average body length of 30 mm; females average 40 mm.

Carapace: Females have a gray carapace, bordered with light gray hairs (Fig. 78). The colors may fade to brown between molts. Males have a slightly glossy brown carapace (Fig. 79) (V. Honsa, V. Šejna & Longhorn, pers. comm.; J. Mendoza, pers. obs.).

Legs: Females have dark brown femora. Legs I and II are covered in light gray hairs from the patellae to the tarsi, and legs III and IV are covered in dark gray hairs from the patellae to tarsi (Fig. 78). The colors may fade to brown between molts. Males have dark brown femora, and all legs are covered in dark gray hairs from the patellae to tarsi (Fig. 79) (V. Honsa, V. Šejna & S. Longhorn, pers. comm.; J. Mendoza pers. obs.).

Abdomen: Both males and females have abdomens that are covered in shorter brown hairs and scattered longer reddish hairs (Figs. 78 & 79). The colors may fade to brown with red-brown hairs between molts (V. Honsa, V. Šejna & S. Longhorn, pers. comm.; J. Mendoza pers. obs.).

Juveniles: The carapace of juveniles is light gray. The legs have dark brown femora. Legs I and II are covered in brownish hairs from the patellae to the tarsi, and legs III and IV are covered in dark gray hairs from the patellae to the tarsi. The abdomen is covered in shorter brown hairs with very sparse longer reddish hairs (Fig. 80) (Mendoza & Francke, 2017; J. Mendoza & R. West, pers. obs.).

Similar CITES-listed species:

Brachypelma fossorium does not closely resemble any other *Brachypelma* species. Unfortunately, *B. fossorium* is the most "generic" looking species described in this guide, and is similar to many species of non-CITES-listed tarantulas—far too many to discuss within the constraints of this publication. However, there is little interest in this species within the pet trade and enforcement officers are unlikely to encounter specimens.

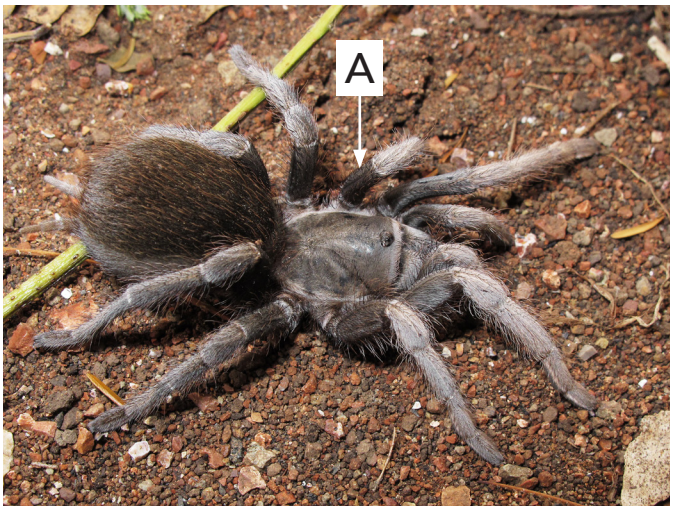

Figure 78. *Brachypelma fossorium*, adult female from Guanacaste Province, Costa Rica

Note: This specimen exhibits the gray carapace, bordered with light gray hairs, that is typical of females of the species. Both males and females have dark brown femora (A).

Figure 79. *Brachypelma fossorium*, adult male from Guanacaste Province, Costa Rica

Figure 80. *Brachypelma fossorium*, juvenile wild-caught in Nicaragua (age unknown)

Sericopelma angustum (Valerio, 1980)

CITES listing: Appendix II

Common names: Costa Rican red tarantula (English)
Mygale rouge du Costa Rica (French)
Tarántula roja de Costa Rica (Spanish)

Synonyms: *Brachypelma angusta* Valerio, 1980
Brachypelma angustum Valerio, 1980
Euathlus angustus (Valerio, 1980)

Taxonomic note: As of August 2018, the transfer of this species to the genus *Sericopelma* by Gabriel and Longhorn (2015) had not been reviewed by the CITES Parties, and Appendix II still listed the species in the genus *Brachypelma* (CITES, 2018a).

Distribution: Endemic to Costa Rica, only known from the east side of the Guanacaste mountains, around San Pedro de Arenal, Cantón San Carlos, Alajuela Province (Gabriel & Longhorn, 2015).

Conservation status: In 2018, the IUCN assessed the status of *B. angustum* and categorized the species as Data Deficient (DD) (Fukushima et al., 2018).

Trade: According to the UNEP-WCMC CITES Trade Database, 23 live specimens of *B. angustum* were traded internationally in the years 2006–2016 (CITES, 2018b). However, these specimens were not true *B. angustum.* Apparently, the name "*angustum*" was used in error by hobbyists, and that stock was actually hobby-bred hybrids of different species. Specimens are still occasionally traded as *Brachypelma* sp. '*angustum*' (S. Longhorn, pers. comm.). No specimens of *B. angustum* were traded internationally after Gabriel and Longhorn (2015) moved the species to the genus *Sericopelma*. No trade was recorded for *S. angustum* in any year (CITES, 2018b).

Description:

Sericopelma angustum is known from a single female specimen described by Valerio (1980). This specimen had been collected in 1974 by E. Vargas. The preserved specimen was not examined and described by Valerio until 1980 (Gabriel & Longhorn, 2015). The description below, therefore, is based on a single preserved specimen (Fig. 81). Whether the described colors accurately represent those of a live specimen is unknown (Valerio, 1980).

Size: The female body length is approximately 59mm; the male is unknown (Valerio, 1980).

Carapace: Females have a dark brown carapace (Valerio, 1980).

Legs: Females have entirely brown legs, with scattered longer reddish hairs on legs III and IV (Gabriel & Longhorn, 2015; Valerio, 1980).

Abdomen: Females have an abdomen that is covered in shorter dark brown hairs and scattered longer, reddish hairs (Valerio, 1980).

Juveniles: Unknown.

Similar CITES-listed species: *Brachypelma epicureanum, B. kahlenbergi, B. sabulosum, B. vagans*

Sericopelma angustum have a scopula that runs the full length of the inner surface of the femur of leg IV. This scopula is absent from all *Brachypelma* species (Gabriel & Longhorn, 2015; Hamilton et al., 2016; Mendoza & Francke, 2017; Valerio, 1980).

Figure 81. *Sericopelma angustum*, single known specimen (preserved)

Sericopelma embrithes (Chamberlin & Ivie, 1936)

CITES listing: Appendix II

Common names: Barro island brown tarantula (English)
Mygale brune de l'île de Barro (French)
Tarántula marrón de la isla de Barro (Spanish)

Synonyms: *Eurypelma embrithes* Chamberlin & Ivie, 1936
Brachypelma embrithes (Chamberlin & Ivie, 1936)
Avicularia embrithes (Chamberlin & Ivie, 1936)
Aphonopelma embrithes (Chamberlin & Ivie, 1936)

Taxonomic note: As of August 2018, the transfer of this species to the genus *Sericopelma* by Gabriel and Longhorn (2015) had not been reviewed by the CITES Parties, and Appendix II still listed the species in the genus *Brachypelma* (CITES, 2018a).

Distribution: Endemic to Panama and only known from Barro Colorado Island, Panamá Province (Gabriel & Longhorn, 2015).

Conservation status: In 2018, the IUCN assessed the status of *S. embrithes* and categorized the species as Data Deficient (DD) (Fukushima et al., 2018).

Trade: No trade in specimens of *S. embrithes* (or *Brachypelma embrithes*) was recorded in the UNEP-WCMC CITES Trade Database during 2006–2016 (CITES, 2018b).

Description:

Size: female body length 58 mm; the male is unknown (Gabriel & Longhorn, 2015).

Carapace: Females have a black carapace bordered with gray hairs (Fig. 82). The color fades to light brown between molts (Gabriel & Longhorn, 2015).

Legs: Females have black legs with gray hairs on the dorsal side of the trochanters, and two lighter parallel longitudinal lines on the patellae (Fig. 82). The color fades to brown between molts (Gabriel & Longhorn, 2015).

Abdomen: Females have an abdomen that is covered in short black hairs with scattered longer, red hairs (Fig. 82). The color fades to brown with longer russet hairs between molts (Gabriel & Longhorn, 2015).

Juveniles: Unknown

Similar CITES-listed species: *Brachypelma epicureanum, B. kahlenbergi, B. sabulosum, B. vagans*

Sericopelma embrithes have a scopula that runs the full length of the inner surface of the femur of leg IV and is absent from all *Brachypelma* species (Gabriel & Longhorn, 2015; Hamilton et al., 2016; Mendoza & Francke, 2017; Valerio, 1980).

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Figure 82. *Sericopelma* cf *embrithes*, adult female from Barro Colorado Island, Panama

Note: The specimen in this photograph appears to be *S. embrithes* species, however, the identification is provisional.

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Annex A: Tarantulas listed on Appendix II of CITES

The species of tarantulas listed in CITES Appendix II (as of August 2018) are listed in column A of Table 3. The currently accepted nomenclature for these species (as of August 2018) is provided in column B of Table 3.

In the future, ongoing revisions of the genus *Brachypelma* are expected to move a number of *Brachypelma* species to new genera (Mendoza & Francke, 2018; S. Longhorn pers. comm.). These anticipated changes are listed in column C of Table 3.

Table 3. CITES Appendix II vs. current and anticipated nomenclature, as of August 2018

(A) CITES Appendix II	(B) Current nomenclature	(C) Anticipated nomenclature
Aphonopelma albiceps	*Brachypelma albiceps*	*Brachypelma albiceps*
Aphonopelma pallidum	*Aphonopelma pallidum*	*Aphonopelma pallidum*
Brachypelma albopilosum	*Brachypelma albopilosum*	n.g. *albopilosum*
Brachypelma angustum	*Sericopelma angustum*	*Sericopelma angustum*
Brachypelma annitha	*Brachypelma smithi*	*Brachypelma smithi*
Brachypelma auratum	*Brachypelma auratum*	*Brachypelma auratum*
Brachypelma baumgarteni	*Brachypelma baumgarteni*	*Brachypelma baumgarteni*
Brachypelma boehmei	*Brachypelma boehmei*	*Brachypelma boehmei*
Brachypelma embrithes	*Sericopelma embrithes*	*Sericopelma embrithes*
Brachypelma emilia	*Brachypelma emilia*	*Brachypelma emilia*
Brachypelma epicureanum	*Brachypelma epicureanum*	n.g. *epicureanum*
Brachypelma fossorium	*Brachypelma fossorium*	n.g. *fossorium*
Brachypelma hamorii	*Brachypelma hamorii*	*Brachypelma hamorii*
Brachypelma kahlenbergi	*Brachypelma kahlenbergi*	n.g. *kahlenbergi*
Brachypelma klaasi	*Brachypelma klaasi*	*Brachypelma klaasi*
Brachypelma sabulosum	*Brachypelma sabulosum*	n.g. *sabulosum*
Brachypelma schroederi	*Brachypelma schroederi*	n.g. *schroederi*
Brachypelma smithi	*Brachypelma smithi*	*Brachypelma smithi*
Brachypelma vagans	*Brachypelma vagans*	n.g. *vagans*
Brachypelma verdezi	*Brachypelma verdezi*	n.g. *verdezi*

Note: n.g.= "new genus."

Index to Scientific Names

Aphonopelma

Avicularia

Brachypelma

Brachypelmides

Delopelma

Dugesiella

Euathlus

Eurypelma

Mygale

Rhechostica

Sericopelma

Staphylococcus

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