British Tarantula Society Journal

February 2007
Vol. 22
No. 2

BRITISH TARANTULA SOCIETY COMMITTEE

Head Office - membership enquiries & renewals - changes of address	Angela Hale 3 Shepham Lane Polegate East Sussex BN26 6LZ	01323 489047 angehale@thebts.co.uk
Chairman	Andrew Smith	andrew.m.smith@thebts.co.uk
Vice Chairman **Treasurer**	Paul Carpenter	01386 49747 paulcarpenter@thebts.co.uk
Secretary & Minutes Secretary	Angela Hale	01323 489047
Journal Editor **Study Group Administrator**	Richard Gallon	01492 878377 richardgallon@thebts.co.uk
Editorial Support Team	Michael Conabeer	07850 123145 mikeconabeer@thebts.co.uk
	Peter Kirk	020 8252 3373 or 07984 175349 peterkirk@thebts.co.uk
	Guy Tansley	01914 820584 guy.tansley@thebts.co.uk
Webmaster	Mark Pennell	0117 3775953 mark@thebts.co.uk
BTS Lectures Organiser	Kim Pennell	kim@thebts.co.uk
Exhibition Organisers	Ray & Angela Hale	01323 489047 exhibition@thebts.co.uk
Reference Library	Ray Hale	rayhale@thebts.co.uk
Friendship Scheme **Web-site Secretary**	Angela Hale	angehale@thebts.co.uk
Business Manager - BTS merchandise sales	Martin Nicholas	01749 689261 martinnicholas@thebts.co.uk
Breeding Directory	Visit the BTS website	
European Representative	Thomas Ezendam	thomas.ezendam@thebts.co.uk
North American Representatives	Michael Jacobi	michael.jacobi@thebts.co.uk
	Scott Scher	scott.scher@thebts.co.uk
Scorpion Consultant	Mark Titterton	01270 651261 mark.titterton@thebts.co.uk
Additional Committee Members	Mark Allison	01909 721566 markallison@thebts.co.uk
Founding Honorary Members	Ann & Frank Webb	
Honorary Members	John Murphy, Roy Dunn, John & Kathleen Hancock	

Membership

All membership dues (cheques, Visa, Master-card) should be sent to the head office.

You can now join on-line

UK & Europe - Paper & Electronic Journal (Cheque, postal order, Visa or Mastercard)	£15.00
Rest of the World – (Visa or Mastercard – e-mail or telephone Angela Hale for details)	
Paper & Electronic Journal	£20.00
Electronic Journal only	£10.00

Front cover: *Chromatopelma cyaneopubescens* with egg-sac © Mikhail Bagaturov.

Hobby Jewellery – *Chromatopelma cyaneopubescens*: First Detailed Breeding in Captivity with Notes on the Species

Mikhail F. Bagaturov, Saint-Petersburg, Russia

Introduction

When I first began keeping tarantulas about 15 years ago, I found some internet resources related to information about theraphosid spiders (mind you, there were very few websites on the subject in those days). I was amazed how many species there are, and particularly how many beautiful ones.

The first picture of *Chromatopelma cyaneopubescens* I saw put me in a stupor – I did not realize that such a beautiful creature could be found in our world. Since that time it has been one of my favourite tarantula species! I received my first *Chromatopelma cyaneopubescens* about eight years ago. At that time accurate

Plate 1: *Chromatopelma cyaneopubescens* pair, male on right © Mikhail Bagaturov.

information about them was not available anywhere. Sadly, I kept mine too humid out of fear of dehydration, and they died as a result.

In 2001 I suddenly found information about this tarantula inhabiting arid desert areas in Northern Venezuela. There are also many reports of this tarantula successfully kept on dry substratum with only a water dish available, and people experienced no problems with the spiders moulting. This sounded very interesting, especially since this new information also verified the semi-arboreal tendencies of *C. cyaneopubescens*.

Having kept lizards for a long time, including some desert species like *Teratoscincus scincus* or *Phrynocephalus* spp., I knew that they kept their water balance by sitting deep in the burrow and becoming active only in the evenings. Also, they received additional water from their food source and by licking dew off the ground surface.

Analyzing all those factors, *C. cyaneopubescen*s predilection for living out in the open at the base of bushes in silk – not in a shady burrow like other arid area tarantulas (*Pterinochilus* spp., *Eucratoscelus* spp., etc.) – is an amazing feat of adaptation.

I received three more spiderlings of this species about two years ago. They were tiny, colourful jewels in their second instar. This time I kept them absolutely dry, only providing a shallow water bowl. They ate very well, grew quickly, and became mature males within 1.8 years. This is a sort of bad luck many hobbyists experience with their favourite pets – they always became males, but not females. Luckily I had acquired a sub-adult female from my friends Julia and Anton Labunsky (Moscow) and I started to think about breeding these spiders.

After I noticed the spiderlings were male, I stopped feeding them as much, and put them in the coolest place in my room to slow down their growth rate and as a result to delay the approach of maturation. I fed the female frequently and kept her warm to increase her growth to speed up maturation. I gave one of the males to my friend who wanted to breed them with the female which he owned. This male matured and was consumed by the female with no observed mating and still no egg-sac at the end of the story. The other two, I kept to breed with my female.

General information with keeping conditions

Chromatopelma cyaneopubescens (Strand, 1907) has become one of the most popular "pet" tarantulas since it was introduced into the hobby in 1993 (first in the USA). The etymology of the name: "*chroma*" (from Greek) = colour, "*pelma* (from Latin) = foot (sole); "*cyaneo*" (from the Greek "kyaneos") = blue, "*pubescere*" (from Latin) = covered with hairs.

It got its status as a monotypic genus by the German arachnologist Günter Schmidt in 1995, and is still the only species included in this genus. It has a distinct, unique coloration with the combination of dense orange abdominal hairs, blue legs, and a bottle-green carapace (hence the common name − "Greenbottle Blue"). The absence of aggression (it is a bit skittish, but generally just kicks urticating hairs) and dislike for using retreats makes it a good display tarantula and it can even be recommended to beginners. Additionally, the amazing colour changes from juvenile to adult must be noted. The spiderling and adult look like totally different species. During their first few feeding instars, the coloration and pattern resemble juvenile representatives of the genus *Avicularia*. After several moults, adult coloration gradually becomes more prominent.

As a taxon it is characterised by the presence of type IV urticating hairs and its spermathecal shape, which is similar to members of the genus *Brachypelma* Simon, 1890. It also differs from the somewhat similar theraphosine genus *Cyriocosmus* Simon, 1903 by the following: absence of a branch on male embolus, scopulation of metatarsus and tarsus IV not divided, tarsus III finely divided longitudinally. Tibial spurs of the male are also present.

In nature *Chromatopelma cyaneopubescens* lives near the Paraguana River, Falcon state, North Venezuela, occupying xeric (dry) sites of bush and woods

Plate 2: *Chromatopelma cyaneopubescens* egg laying © Mikhail Bagaturov.

where they live in superficial holes or silk-lined hammock-type retreats at the base of prickly scrub bushes and tree trunks (www.spidercity.ch).

Adult females reach 5 to 7 cm in body length; males are smaller but they are more leggy in appearance. This species is presumed to live in captivity over 12 years. Males mature within 1.5–3 years, females after about 2 years of age.

It is an easy-to-keep species if you follow the general rule – "not much water and humidity". The adult specimens must be kept on the dry side with only a water dish establishing humidity in the enclosure. If fed regularly, a water dish is not even necessary. Juveniles can be provided with slightly (partly) humidified substrate because they need a somewhat more humid environment than adults. This species is fond of webbing – both juveniles and adults heavily web the entire space of their terraria.

Chromatopelma cyaneopubescens is a very hardy species. Some wild caught specimens may refuse food for several months, and withstand short periods of temperature as low as 15°C. Also, daytime temperatures over 40°C are not unusual in its natural habitat.

Breeding

I knew that cases of successful captive breeding of this species were very rarely recorded. Some people consider *C. cyaneopubescens* (as well as some other theraphosid spiders like *Theraphosa blondi*, *T. apophysis*, *Megaphobema robustum*, etc.) among the hardest species to breed. In spite of that, a lot of spiderlings sell for reasonable prices in Europe (presumed to be captive raised from gravid wild caught females).

However, several reports of successful breeding are confirmed by different hobbyists, so it is not impossible. The question is – why is it so difficult to breed and what conditions must be created for success? It seems there is no breeding methodology established for this particular species (as well as for many other tarantulas, except some Asian species like *Haplopelma* spp.) to say what will definitely work.

Like I've done with breeding reptiles at home without any valid information on the species, I started to analyse the conditions this species experiences in the wild – this must be the 'key'. Luckily nowadays, access to the WWW makes finding information concerning weather and any other required data easy. Venezuela is no

Plate 3: *Chromatopelma cyaneopubescens* with egg-sac © Mikhail Bagaturov.

exception to the rule. I quickly found the necessary information on the internet and realised that some seasonality, with changes in humidity/temperature levels, must be established for successfully breeding this species. But exactly what variation and duration were required?

To answer these questions an active internet community is an excellent resource to discover first-hand reports on successes and failures. I knew some of my colleagues and friends around the world were also trying to find the correct environmental conditions to breed *Chromatopelma cyaneopubescens.* My friends Garrick Odell and Ota Zimmermann started their *C. cyaneopubescens* breeding projects at about the same time, and shared their information with me. Furthermore, at the *T-Store Forum* of Phil Messenger (www.the-t-store.co.uk/forum/index.php), Graeme Wright shared his experience with his trials of breeding this species. Paul Towler, who successfully bred *Chromatopelma cyaneopubescens* twice (on the T-Store Forum), mentioned raising the humidity during the breeding process. That information, especially with Paul's annotation about a high level of humidity, appeared to be very useful and also corroborated Venezuelan climatic data.

Together with the climatic issues, there was another problem – females of this tarantula are renowned for their tendency to kill males, sometimes even instead of mating with them. In most cases you'll have to leave a male in the female's enclosure, because the mating can take hours after introducing a male. This makes it difficult to determine if a mating occurred or not. After all that, a successful mating does not guarantee the production of a fertile sac. Fortunately I had two adult males available, thereby increasing my odds. I planned to try my best to save at least one of them, as I'm a very patient man (oh, how I was mistaken!) who would oversee the mating.

The first thing I did was to remove the female from her standard 15x20x15 (l/w/h, in cm) box and re-house her in a larger enclosure (25x40x40) with limited ventilation. I used well-humidified coconut substrate in a 5–6 cm layer. No decoration or artificial retreats were used, and temperature was average room temperature; 24–25°C by day, 20–21°C by night. I fed the female heavily with 2 imago brown crickets (*Gryllus assimilis*) per day for 2 weeks before the first introduction. The humidity level was so high that condensation was often seen on the box walls. All introductions of males to the female's enclosure were done at night after the lights were turned off for at least one hour (this is a common rule in my case of mating tarantulas).

Here are the data characterising all five mating attempts (**Plate 1**):

First introduction: Male-1 introduced on 14 August 2005.
Male body and front leg shaking behaviour was observed with no response from the female at all. Finally, female attacked with chelicerae open, male escaped with my assistance 1 hour 20 minutes after being introduced.

Second introduction: Male-1 introduced on 21 August 2005.
No action between specimens for 40 minutes, despite the fact that I gently pushed the male to the female several times. I gave up; male was removed.
Male-1 found dead on 25 August 2005 without any sign of external damage or apparent reason for his demise.

Third introduction: Male-2 introduced on 3 September 2005.
Male body and front leg shaking behaviour was observed, as well as drumming behaviour from the female. Male left in female's enclosure for a day after about 1 hour observation. No mating observed.
4 September 2005 evening: Male-2 found sperm-webbing, several hours after being removed from female's enclosure.

Fourth introduction: Male-2 introduced on 12 September 2005.
No action between the specimens was observed for the first half an hour. Male left in female's enclosure for a day and removed. Found one leg was chewed by female and autotomised. The male's leg loss did not seem to trouble him; he was still healthy and ate a cricket after two days.

Fifth introduction: Male-2 introduced on 17 September 2005.
No action between specimens was observed in the first half hour. Male left in female's enclosure for a day. 18 September 2005, female found consuming Male-2.

I was unable to observe the mating, so am unsure exactly when it happened. It is also interesting to note that for the entire time the female was in her new enclosure, no webbing occurred on her part. After several days I re-housed the female back to her previous box with a wide piece of "Amurean barhat" (*Phellodendron amurense*) bark and a shallow water dish, maintaining the humidity at a high level.

At this point I must note a few issues about the weather in Russia. At the end of September – beginning of November it gets colder. When night falls, temperatures drop down below zero some years. This year was not so cold, and the need for home heating was thus somewhat delayed. However, the night-time temperatures were rather low, resulting in huge differences between day and night-time climates.

During the next month she was not very active and soon rejected all food for 3 weeks or so, but her abdomen was definitely getting bigger; this was a positive sign. Soon she started feeding again, and on the evening of 1 November 2005 I found her webbing all around the entire space of her box. Early the next morning, before I went to work, I was able to see and photograph the egg-laying process. Upon my return that evening I finally found her guarding a huge egg-sac.

She was looking very thin and I tried to feed her with a pre-killed cricket. I always try to feed females during egg-sac care. I usually drop or entwine a cricket near the

Plate 4: *C. cyaneopubescens* spiderlings © Mikhail Bagaturov.

female. In the cases of *Psalmopoeus cambridgei* and *Nhandu coloratovillosus*, the food item is always consumed. I was informed that females of *Lasiodora parahybana* and *Pterinochilus chordatus* do the same (Kirill Kravchenko, St. Petersburg, pers. comm.). I know many keepers do not feed their females during the incubation period to avoid disturbance, however I do not think pre-killed food items cause a great deal of disturbance. The first cricket I put in female's enclosure was found untouched the next day at the opposite side of the box – she simply left it alone. The second cricket was introduced near her after a week and was found chewed by the female several hours later; she accepted the third one as well.

I stopped worrying about her condition and started to wonder whether the egg-sac was fertile or not. The only thing I could do was wait for about 3 weeks; I usually remove the cocoon from the female for artificial incubation, following the advice of Ray Gabriel (by this time eggs have usually developed into nymph-2). But believe me this is not an easy wait!

At day-22, after a long wait (22 November 2005), I decided to remove the sac and opened it to check development. I'm not superstitious, but I invited my friend Kirill Kravchenko to assist me with this. I opened the female's box and started to push her to divert her from the cocoon. She acted like I never saw before – taking up the classic threat pose, opening the chelicerae widely and attacking the tweezers like a *Pterinochilus* spp.

After some hesitation (my mistake!) I took the cocoon from the female, but she suddenly attacked the cocoon and thrust both fangs into it. That came as a surprise to me – I had never seen this happen when taking a cocoon from a female before. It was very bad because 6 nymphs were destroyed by this action.

As I mentioned above, the cocoon was rather larger than I expected. I photographed the cocoon with the ruler to relay the size and finally opened it. Inside I found about 80 in total – 62 nymph-1s mixed with eggs (some of them were crushed by the female's fangs, others were already dead). The undeveloped eggs all died. I don't know why this happened, but I think that my female is still small and not fully grown (about 2 years old). Others report broods of between 120–150 for this species (Paul Towler & Eric Reynolds, 2005, pers. comm.).

I put the developing eggs and nymph-1s into a small perforated plastic container, which was set-up as an incubator: 5 cm of vermiculite on the bottom and hammock-type paper towel above secured at the edges with adhesive tape and covered with a lid (ventilated with small holes).

During the incubation I made a second mistake. After about a week of re-housing the nymphs, I found the temperature of my living room somewhat lower than I think is needed for successful incubation, so I put the box in my heated cricket incubator tank. I checked the box every day and on the 4th or 5th day found one micro-cricket had managed to get inside the box and destroy 3 nymph-2s. I also found several nymphs killed by an invasion of Diptera larvae during the incubation period.

I decided to return the box to the safety of my living room, and also take some photos of the nymph-2s. When I looked closer I found nymphs, which were previously uncoloured, beginning to look different – the abdomen became hairy and the carapace patterned and femora darkened. This was very interesting to observe, as I was not expecting them to moult into spiderlings for another 2–3 weeks. They got darker and darker, almost black at the end. The first spiderling was found during the night of the 3 January 2006. All nymph-2s had moulted into spiderlings within 2 days. The offspring were rather large, about 9 mm in body length and 1.8 cm in leg-span. I was surprised by this – I did not expect such a great size – they were a little bigger than the *Avicularia versicolor* spiderlings I bred the previous year.

It is also interesting to note that one of the nymph-2s was found consumed by one of the freshly moulted spiderlings. I did not separate them and found no further cases of cannibalism. I wonder, as others do, why this happens; any guesses?

Summary of incubation data

01 November 2005: egg-laying (**Plate 2**).
02 November 2005: egg-sac constructed (**Plate 3**).
22 November 2005: most eggs at nymph-1 stage.
02 December 2005: moulted into nymph-2 stage.
11 December 2005: nymphs found darker and became hairy and some patterned.
Losses during incubation:

by Diptera larvae invasion	8 nymph-1/2
nymphs cannibalised by sling	1 nymph-2
nymphs destroyed by micro-cricket	3 nymph-1s
spiderlings	1 after moult

All nymphs moulted into spiderlings on 04 January 2006 (only one on 08 January 2006); in total 49 spiderlings (**Plate 4**). All spiderlings were re-housed into their own containers and within several days started to feed.

I do not pretend that the above methodology is definitive for breeding *Chromatopelma cyaneopubescens* in captivity. Neither am I entirely sure that increasing the humidity stimulates the female to produce a healthy egg-sac. Eric Reynolds reported that he successfully bred two females which were kept totally dry throughout the breeding period (except for access to a water dish). However, I hope this article will at least offer some useful guidance for those contemplating breeding this species.

I want to give my deepest gratitude and thanks to my friends and colleagues who helped me with this project and article: Garrick Odell (USA; www.eightlegs.org/), Ota Zimmermann (Czech Republic; www.sklipkani.cz/), Graeme Wright (UK; www.gwrightstarantulacare.co.uk), Paul Towler (UK), Eric Reynolds (USA), and all other people not listed here who share their thoughts and discuss tarantulas with me on the internet. And, as always, my great thanks to the Editor, Richard Gallon, who makes my English readable.

References & useful further reading

Bastiaansen, M. 2002. Kweek van *Chromatopelma cyaneopubescens*. *Tijdschrift van Vogelspinnen Vereniging Nederland,* **10**(35).

Frenay, J. 1999. *Chromatopelma cyaneopubescens*. *Tijdschrift van Vogelspinnen Vereniging Nederland,* **7**(26).

Klatter, F. 1998. *Chromatopelma cyaneopubescens*. *Tijdschrift van Vogelspinnen Vereniging Nederland,* **6**(22).

Ockert, A. & Ockert, R. 1994. ?*Delopelma cyanopubescens* (Strand, 1907) (Venezuelan green-bottle blue) (Araneida: Theraphosidae: Theraphosinae). Eine für Deutschland neue Vogelspinne aus Venezuela. *Arachnologisches Magazin*, **2**(11): 8–11.

Schmidt, G. 1995. *Chromatopelma* gen. n.: Eine neue Gatt. der Theraphosidae (Arachnida: Araneida: Theraphosidae: Theraphosinae). *Arthropoda*, **3**(2): 25–26.

Schmidt, G. 1995. *Eurypelma cyanopubescens* Strand, 1907 ist keine *Aphonopelma*. *Arachnologisches Magazin*, **3 (4)**: 8–9.

Schmidt, G. 2000. Die spermathek von *Chromatopelma cyanopubescens* (Strand, 1907) (Araneae: Theraphosidae: Theraphosinae). *Arachnologisches Magazin*, **8**(7/8): 11–13.

Schmidt, G. & Herzig, V. 1997. Das Männchen von *Chromatopelma cyanopubescens* (Strand, 1907) (Araneae: Theraphosidae: Theraphosinae). *Arthropoda*, **5**(3) 11–14.

Strand, E. 1907. Avicullariidae und Atypidae des Kgl. Naturalienkabinetts in Stuttgart. *Jahresh. Ver. Naturk. Württbg.,* **63**: 1–100.

Striffler, B. & Weinmann, D. 2003. Vogelspinnen in Venezuela von der Karibik bis zu den Tepuis. *DRACO*, **4**(16): 70–76.

West, R. C. 2005. Desert 'Blues'. *Arachnoculture,* **1**(1): 22–28.

www.spidercity.ch/allgemeines/ausgesuchtearten/chromatopelma/index.html
Chromatopelma cyaneopubescens natural habitat photos in the wild (in German).

Additional photos and information on this species are available at my website:
http://tarantulas.tropica.ru/en/main