

## Project Update: October 2016

### Activities achieved:

1. We achieved a long field trip to Sierra de los Organos, on Pinar del Río Province for collection of both ecological data and tissue samples for DNA studies. During this trip we visited nearly 30 localities and completed about 120 tissue samples, ranging from 2-5 samples per locality. This number already exceeds the 100 samples initially anticipated and there are still several localities to be visited before the completion of the project.
2. We distributed additional colour field guides on the “Scorpions from the Guaniguanico Mountain Range” in the most important protected areas we visited during the above mentioned trip.
3. We also visited additional localities on Sierra del Rosario, Artemisa Province, for collection of tissue samples.
4. Observations of captive specimens allowed us to confirm our hypothesis that at least some *Tityopsis* populations are in fact parthenogenetic. As predicted, this imposes an additional threat due to low genetic diversity within populations.



Landscape at Sierra de Los Organos, Pinar del Río Province, showing the typical flat-topped karstic hillocks called “mogotes” surrounded by extensive disturbed valleys devoted to agriculture and livestock farming. The forests of these mountains shelter several *Tityopsis* species. Photo by Raimundo López-Silvero.



Landscape at Sierra del Rosario, Artemisa Province, habitat of at least one *Tityopsis* species. Photo by Raimundo López-Silvero.



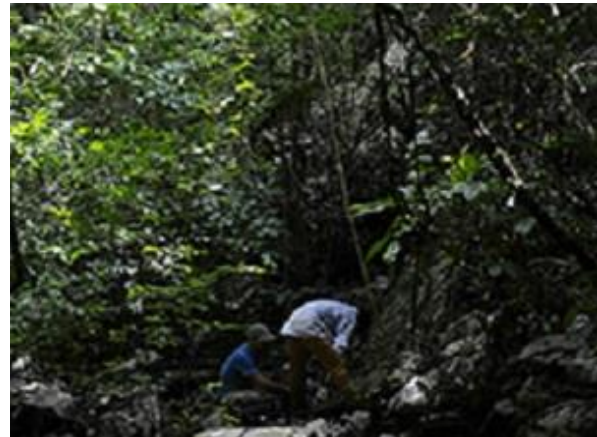
Forest habitat of *Tityopsis* at the base of “mogotes” of Sierra de Sumidero, Pinar del Río Province. Photo by Raimundo López-Silvero.



Forest habitat of *Tityopsis* at the base of “mogotes” of Sierra de Paso Real, Pinar del Río Province. Photo by Raimundo López-Silvero.



Forest habitat of *Tityopsis* at the base of “mogotes” of Sierra de Guacamaya, Pinar del Río Province. Photo by Raimundo López-Silvero.



The project leader and a colleague collecting *Tityopsis* at Sierra de Paso Real, Pinar del Río Province. Photo by Raimundo López-Silvero.



The project leader collecting *Tityopsis* at Sierra de Guane, Pinar del Río Province. Photo by Raimundo López-Silvero (1).



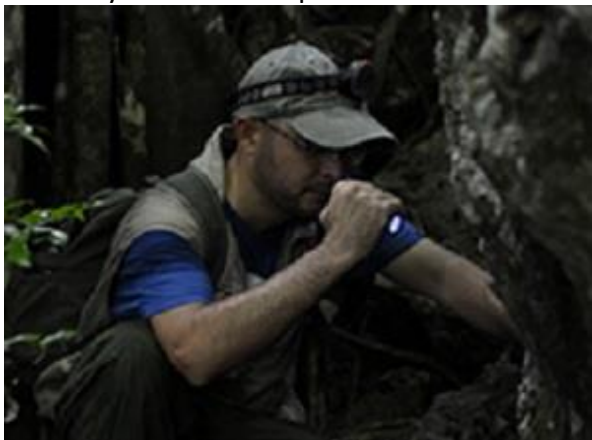
The project leader collecting *Tityopsis* at Sierra de Guane, Pinar del Río Province. Photo by Raimundo López-Silvero (2).



The project leader collecting *Tityopsis* at Sierra de Guacamaya, Pinar del Río Province. Photo by Raimundo López-Silvero.



The project leader collecting *Tityopsis* at Sierra de Viñales, Pinar del Río Province. Photo by Raimundo López-Silvero.



The project leader collecting *Tityopsis* at Las Yeguas, Sierra del Rosario, Artemisa Province. Photo by Raimundo López-Silvero.



The project leader with an adult female of a new species of *Tityopsis* from Sierra de Sumidero, Pinar del Río Province. Photo by Raimundo López-Silvero.



Feral pig heavily disturbing the forest soil at Sierra de Viñales, Pinar del Río Province. This is one of the most serious threats currently facing populations of scorpions in the genus *Tityopsis*. Photo by Raimundo López-Silvero.



Captive colony of *Tityopsis* for observations of reproductive biology. Photo by Tomás M. Rodríguez.



Freshly-molted female of *Tityopsis* from Guanahacabibes Peninsula, Pinar del Río Province, kept at the captive colony since the beginning of the project. Photo by Tomás M. Rodríguez.



Adult female of *Tityopsis* from Guanahacabibes Peninsula, Pinar del Río Province, showing clear signs of full pregnancy (arrow) without being in contact with males before: a strong evidence of parthenogenesis at least in this species. Photo by Raimundo López-Silvero.



Adult female of *Tityopsis* from Sierra de Guane, Pinar del Río Province, carrying its offspring before their first molt. Photo by Tomás M. Rodríguez.



Adult female of *Tityopsis* from Sierra del Infierno, Pinar del Río Province, carrying its offspring after their first molt. Photo by Tomás M. Rodríguez.



Adult pregnant female of *Tityopsis* from Sierra del Infierno, Pinar del Río Province. Photo by Raimundo López-Silvero.



Adult female of a new species of *Tityopsis* from near Sierra de Sumidero, Pinar del Río Province. Photo by Raimundo López-Silvero.



Adult female of *Tityopsis inaequalis* from the type locality at Mogote Dos Hermanas, Viñales, Pinar del Río Province. Photo by Raimundo López-Silvero.



Comparison between a new species of *Tityopsis* from Sierra de Los Organos (left) and *Tityopsis inaequalis* (right). Photo by Raimundo López-Silvero.



Freshly-molted male of *Tityopsis* in its natural habitat from Sierra de Gramales, Pinar del Río Province. Photo by Raimundo López-Silvero.



*Rhopalurus junceus*, a large (ca. 10 cm) endemic scorpion living sympatric with the different *Tityopsis* species across their geographic range. Photo by Raimundo López-Silvero.



*Mastigoproctus pelegrii*, an endemic vinegaroon living sympatric with *Tityopsis* across the Guaniguanico Mountain Range and Guanahacabibes Peninsula. Photo by Raimundo López-Silvero.



Whip spiders living sympatric with *Tityopsis* across the Guaniguanico Mountain Range: *Phrynus pinarensis*. Photo by Raimundo López-Silvero.



Whip spiders living sympatric with *Tityopsis* across the Guaniguanico Mountain Range: *Phrynus marginemaculatus*, female carrying its offspring. Photo by Raimundo López-Silvero.



Whip spiders living sympatric with *Tityopsis* across the Guaniguanico Mountain Range: *Paraphrynus viridiceps*. Photo by Raimundo López-Silvero.