

33 new trapdoor spider species discovered in the American southwest

December 20 2012



Female specimen of *Aptostichus atomarius* photographed live Credit: Jason Bond

A researcher at the Auburn University Museum of Natural History and Department of Biological Sciences has reported the discovery 33 new [trapdoor spider](#) species from the American Southwest. These newly

described species all belong to the genus *Aptostichus* that now contains 40 species, two of which are already famous – [Aptostichus stephencolberti](#) and [Aptostichus angelinajolieae](#).

The genus now includes other such notable species as *Aptostichus barackobamai*, named for [Barack Obama](#), the 44th President of the United States, and reputed fan of Spiderman comics; *Aptostichus edwardabbeyi*, named for environmentalist and author [Edward Abbey](#) (1927-1989); *Aptostichus bonoi* from Joshua Tree National Park, named for the lead singer of the Irish rock band [U2](#); *Aptostichus pennjillettei* named for illusionist and intellectual [Penn Jillette](#); *Aptostichus chavezii*, named for Mexican American and civil rights and labor activist [César Chávez](#) (1927-1993).

Other notable new species names include *Aptostichus anzaborrego*, known only from the Anza Borrego Desert State Park in southern California; and *Aptostichus sarlacc* from the [Mojave Desert](#), named for George Lucas' Star Wars creature, the [Sarlacc](#) from the fictional desert planet Tatooine.



Male specimen of *Aptostichus barackobamai* photographed live Credit: Jason Bond

The researcher, Prof. Jason Bond, who is a trapdoor spider expert and the director of the Auburn University Museum of Natural History was excited at the prospect of such a remarkable and large find of new species here in the United States and particularly California.

"California is known as what is characterized as a [biodiversity hotspot](#). Although this designation is primarily based on [plant diversity](#), the region is clearly very rich in its [animal diversity](#) as well. While it is absolutely remarkable that a large number of species from such a heavily populated area have gone unnoticed, it clearly speaks volumes to how little we know of the biodiversity around us and that many more species on the planet await discovery " Bond said.

Like other trapdoor [spider species](#), individuals are rarely seen because they live their lives in below-ground burrows that are covered by trapdoors, made by the spider using mixtures of soil, sand, and/or plant material, and silk. The trapdoor serves to hide the spider when it forages for meals at the burrow entrance, usually at night.

Aptostichus species are found in an amazing number of Californian habitats to include coastal sand dunes, chaparral, desert, oak woodland forests, and at high altitudes in the alpine habitats of the Sierra Nevada mountain range.

Bond said, "this particular group of trapdoor spiders are among some of the most beautiful with which I have worked; species often have gorgeous tiger-stripping on their abdomens. *Aptostichus* to my mind

represents a true adaptive radiation – a classical situation in evolutionary biology where diversification, or speciation, has occurred such that a large number of species occupy a wide range of different habitats".

Bond also noted that while a number of the species have rather fanciful names, his favorite is the one named for his daughter Elisabeth.

"Elisabeth's spider is from an incredibly extreme desert environment out near Barstow, California that is the site of a relatively young volcanic cinder cone. The spiders make their burrows among the lava tubes that extend out from the cone – it is a spectacular place to visit but the [species](#) is very difficult to collect because the spiders build rather deep burrow among the rocks".

More information: Bond JE (2012) Phylogenetic treatment and taxonomic revision of the trapdoor spider genus *Aptostichus* Simon (Araneae, Mygalomorphae, Euctenizidae). *ZooKeys* 252: 1. [doi: 10.3897/zookeys.252.3588](https://doi.org/10.3897/zookeys.252.3588)

Bond JE and AK Stockman. 2008. An Integrative Method for Delimiting Cohesion Species: Finding the Population-Species Interface in a Group of Californian Trapdoor Spiders with Extreme Genetic Divergence and Geographic Structuring. *Systematic Biology*, 57: 628-646, [doi: 10.1080/10635150802302443](https://doi.org/10.1080/10635150802302443)

Provided by Pensoft Publishers

Citation: 33 new trapdoor spider species discovered in the American southwest (2012, December 20) retrieved 27 April 2024 from <https://phys.org/news/2012-12-trapdoor-spider-species-american-southwest.html>

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