

**SCOOP!**

# THE INCREDIBLE **TARANTULA MOTH**

A RARE ENCOUNTER  
**IN THE BRAZILIAN  
ATLANTIC FOREST**  
WITH ONE OF ITS MOST  
SECRETIVE AND  
UNIQUE SPECIES

A frontal  macro close-up of *Trichopassus giganteus* shows how well this South American moth can mimic large tarantulas - a *Grammostola* sp. is used for comparison here.



TEXT AND PHOTOS  
BY DR. EDELICIO MUSCAT (\*)

Brazil's Atlantic Rainforest has a very significant diversity, both in flora and fauna, and harbors a great variety of micro-ecosystems. This happens due to the characteristics of its vegetation, formed by various vertical strata that form successive layers from the ground to the treetops. Its biome is the result of the formation of two forest ecosystems, mainly dense woodlands: the dense humid ombrophilous forest and the semideciduous seasonal forest. The ombrophilous forest covers mostly the coastal plains, extending above 1,000 meters high, where the climate is moist the whole year

round. The semideciduous forest is found where the climate has two distinct seasons: rainy and dry. This environment's micro-ecosystems host many animal species, especially insects and amphibians. Even a bromeliad can be home.

The preservation of fauna in forested areas is known to be of vital importance to biological stability, to the maintenance of biodiversity, to the biological control of pests and to the process of renovation of flora in nature reserves. Worried about the importance of preserving the natural environment, the journalist and veterinary doctor Elsie Rotenberg decided to become part of that parcel of humanity that effectively does something about it – not only in the poetic sense, but really hands-

on. She founded a non-governmental organization called Dacnis that counts with a 17 hectares permanent preservation area within the Atlantic Rainforest in Ubatuba, a municipality located in the north coast of the state of São Paulo.

Since the good example begins right at home, one night Dacnis' biologist Edelcio Muscat goes into the NGO's area to see what he can find. Watchful of any movement, he notices two green dots reflected in the bright light of his torch. Years of field experience tell him it is an invertebrate. He walks in its direction and, coming close, what he encounters surprises him immensely: a fantastic moth he's never heard of, much less seen.

Camera, macro lens, flash, Edelcio begins recording the specimen for future identification. From the first shots he knows this is an interesting night. Not only is the moth new to him, it is also very odd: it presents characteristics both of camouflage and mimicry.

The moth's camouflage resides in its patterns and colors, which make it nearly invisible against the tree trunks on which it often rests. Mimicry is similar to camouflage, except that animals tend to appear similar to other animals. In the moth's case, to a tarantula! Its head and two pairs of forelegs resemble the spider's, giving it the appearance of predator instead of prey. The third pair of legs is tiny and almost hidden in its abdomen.



Above, *Trichophassus* shows the mottled leaf-like camouflage of its wings and the spider mimicry of its frontal legs. Right, two frontal close-ups show how faithfully the 12cm-long moth can imitate the posture of a tarantula's pedipalps and raised front legs.



More comparison shots between *Trichophassus* and *Grammostola*. Notice how the moth doesn't limit itself to superficially look like a large spider, but actually mimics a tarantula's unmistakable aggressive stance, adopted in self-defense when threatened, making its unique ruse even more convincing to the observer.



He calls Elsie and another colleague, Alberto Cecchi, to the scene so that they can all examine the insect. All of them look closely and are dumbfounded by the moth's beauty and strangeness. Edelcio finishes his photo shoot and the moth flies off.

From that moment, a long journey begins. Email exchanges between Edelcio and entomologists from different universities lead nowhere until, finally, Prof. Dr. Olaf Hermann Hendrik Mielke, from the Federal University of the state of Paraná, identifies the moth: it is a *Trichophassus giganteus*.

*Trichophassus* is a monotypic moth genus of the family *Hepialidae*, and *giganteus* is the only described species. It is endemic to Brazil – where it is called “*mariposa fantasma*”, or “ghost moth” – and all sources state that it is easier to find it in stormy nights (this, luckily for Edelcio, wasn't one!).

(\* *Edelcio Muscat* is a biologist that works for *Dacnis*. He is a researcher who also develops projects about fauna and environmental education involving the communities that live in close contact with Brazil's Atlantic Rainforest. Besides that, he specializes in macro photography to record his findings.