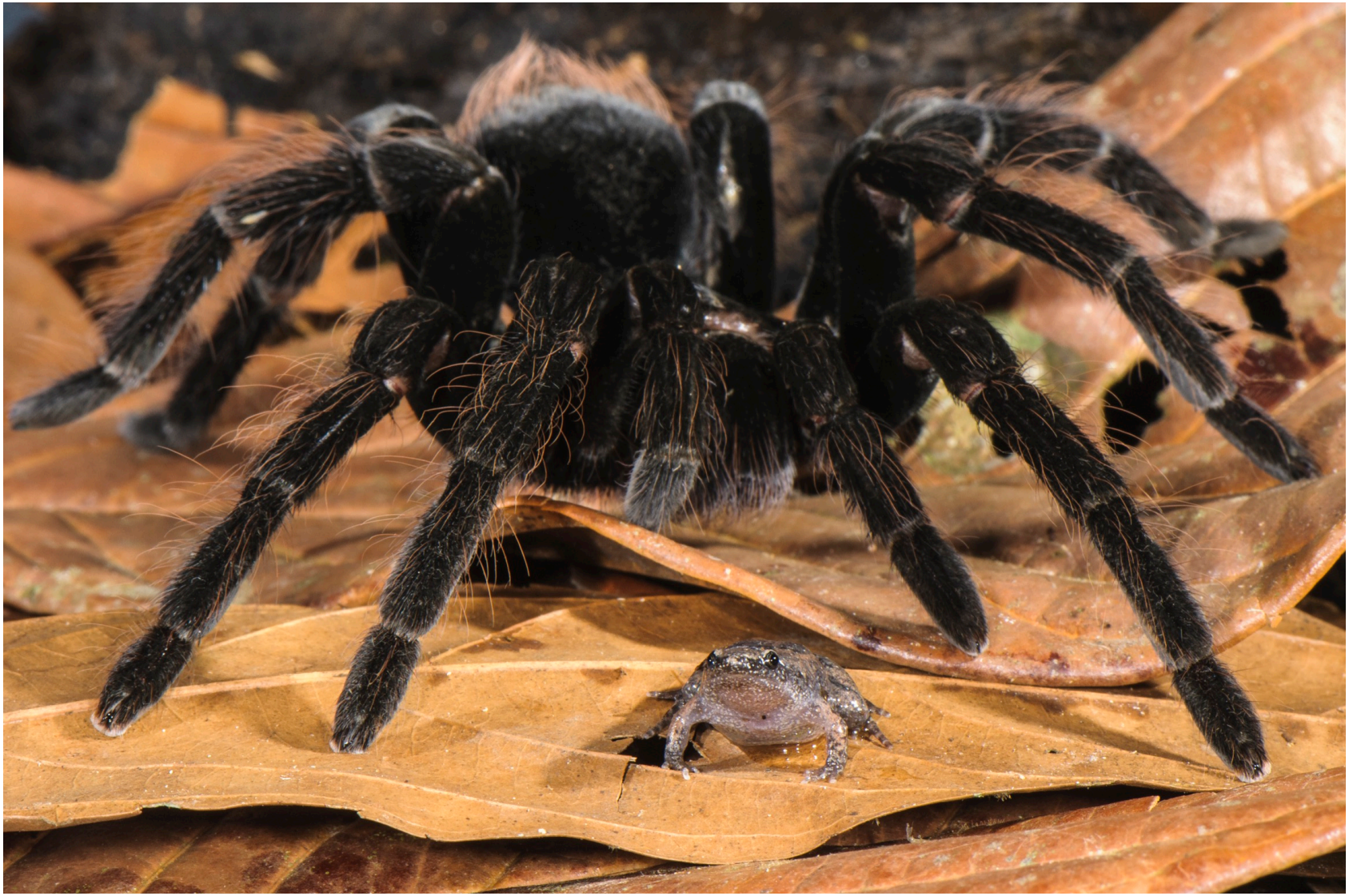
WILD LIFE | 08.14.2019

Enemy of My Enemy

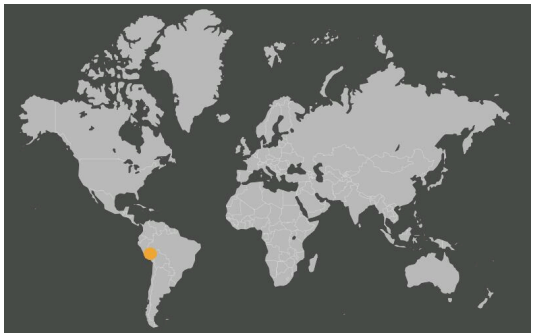
An Amazonian frog finds refuge under the watchful compound gaze of a surprising guardian.

Photograph by Emanuele Biggi

Story by Madison Pobis



As the pink glow of dusk filters through the Amazonian canopy, first one, then two, then three tiny humming frogs (*Chiasmocleis royi*) emerge from a burrow and settle onto the leaf-strewn understory. From the same dark tunnel, about a dozen tarantula spiderlings (*Pamphobeteus* sp.) spill out and skitter onto the surrounding litter. The fiercely protective mother of the brood follows soon after, her delicate high-stepping legs contrasted by massive fangs capable of subduing snakes, small opossums, and—more often than not—frogs. But rather than leap away from certain death, the humming frogs shuffle closer, mere inches from the spider's menacing mouth. And there the two species set up for the evening, each seemingly indifferent to—or in cahoots with—its unlikely forest-mate.



Madre de Dios, Amazonia, Peru

Photographer and naturalist Emanuele Biggi had staked out a prime viewing spot of this burrow with a team of researchers hoping to document the interactions between the spiders and their myriad prey. Seasoned in this type of work, Biggi was careful to avoid unnecessary movements, and even breathed into a towel to avoid disrupting any action that might transpire. Rather than witnessing high drama, though, he and the scientists watched as a bizarrely tranquil scene unfolded between two apparent foes. Over time, observations like these have revealed a symbiotic relationship between the two species in which at least one of the parties has gained a clear and imposing advantage.

Tarantulas are typically nocturnal ambush predators, waiting hours for an opportunity to pounce on virtually any animal they might be capable of subduing. Highly sensitive appendages, called pedipalps, near the spiders' jaws register pressure waves and faint chemical signals that hint at the whereabouts of potential prey. Yet, no matter how close to the tarantula a humming frog ventures, it seems immune,

and researchers now suspect that's simply because the frog's skin secretions taste bad. Juvenile tarantulas that haven't yet grown accustomed to their strange cohabitants have been observed pouncing on humming frogs, poised to sink their fangs into a juicy meal, only to drop them once they've had a taste.

Although it can be difficult to assess the relative advantages of such relationships, the humming frog clearly benefits from its association with the tarantula. Not only does the spider's burrow provide a cool, humid microclimate where both creatures can spend the hot Amazonian days, but the mother tarantula aggressively defends her nest from predators—including those that might also prey on frogs. Whether the spider benefits from the relationship is less clear, but the scientists think the frogs may help to rid the burrow and its surroundings of ants and fly larvae that might prey on her eggs and young.

Details aside, observations like these are powerful reminders of all that still remains unknown about the natural world, and all that's yet to be discovered. As Biggi describes it, "Seeing such a unique relationship is like being the first man to meet aliens—amazing and breathtaking."

ABOUT THE PHOTOGRAPHER

Emanuele Biggi is a scientist, photographer, and television presenter on the popular Italian series GEO, broadcast on Rai3. His photographs typically feature the world's small creatures, helping to raise awareness about the critical roles these organisms play in their environments and the threats they face. You can find more of his work at www.anura.it.

ABOUT THE WRITER

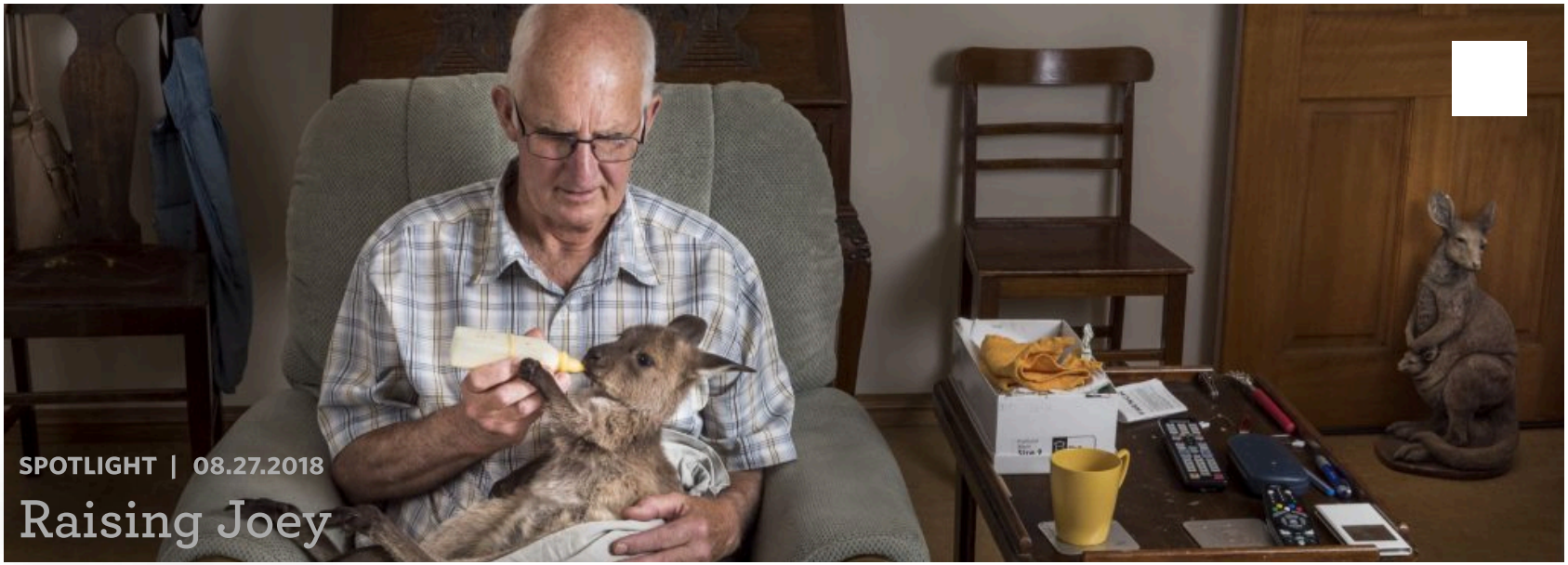
Madison Pobis is a science communicator and video producer based in Santa Cruz, California. Her multimedia content informs audiences about the scientific process, inspires wonder and appreciation for the ocean, and imagines creative solutions to environmental challenges. She holds a master's degree in Environmental Communication from Stanford University.

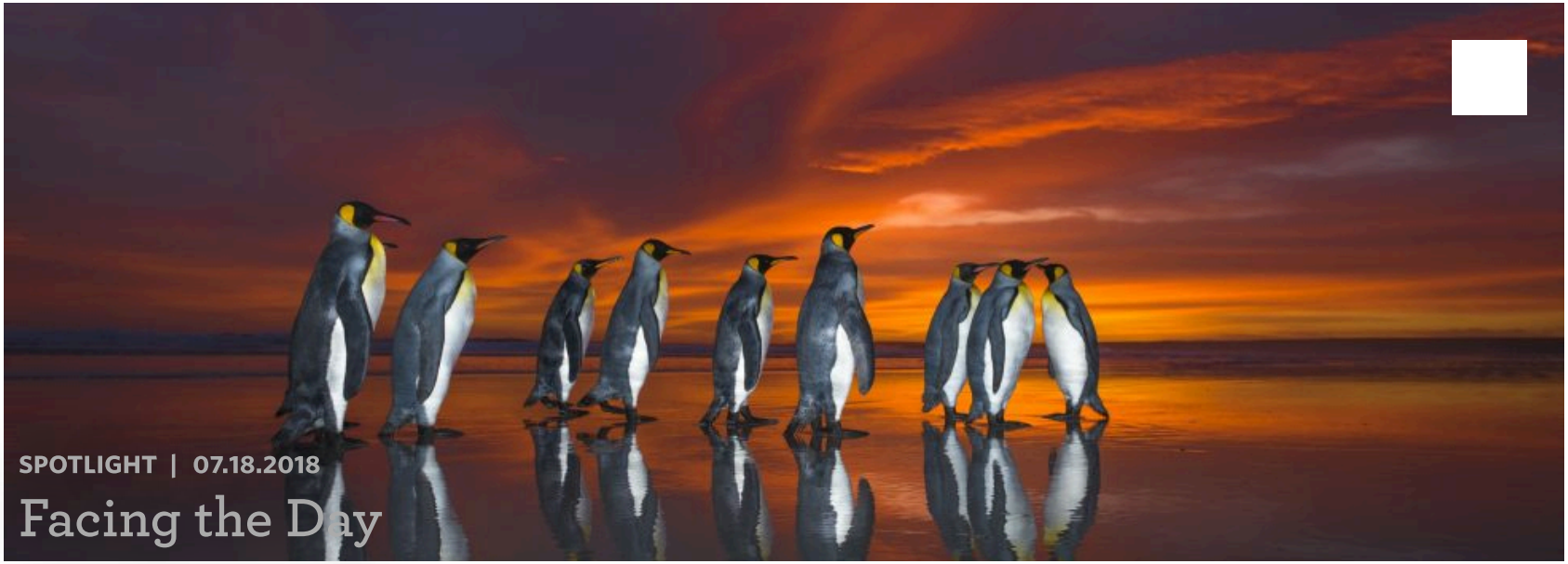
RELATED

TOPICS

AMAZON DISCOVERIES FROG PERU PREDATOR PREY SYMBIOSIS TARANTULA WILD LIFE

ARTICLES





SPOTLIGHT | 07.18.2018

Facing the Day

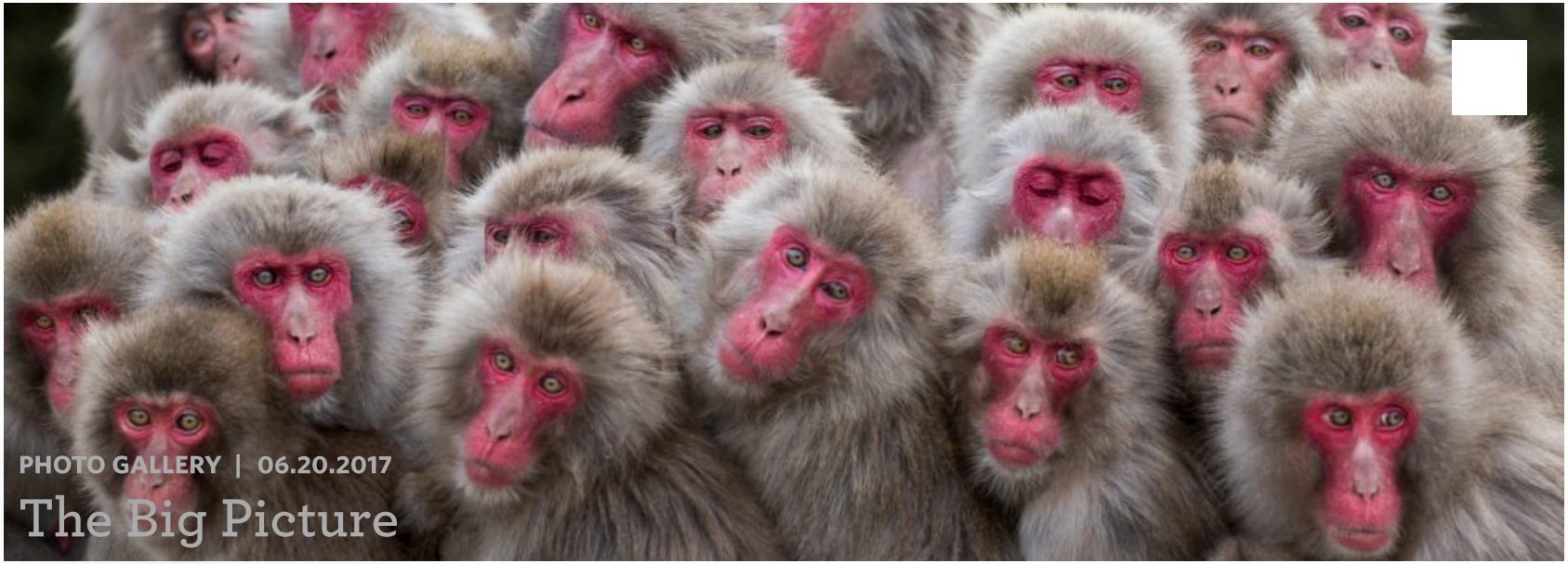


PHOTO GALLERY | 06.20.2017

The Big Picture

ABOUT

CONTACT

Email address

Subscribe

bioGraphic is powered by the California Academy of Sciences, a renowned scientific and educational institution dedicated to regenerating the natural world through science, learning, and collaboration.

Privacy Policy

Your California Privacy Rights

Terms of Use