Beautiful Beasts

Two green orbs glow, separated by arcs of shimmering flecks in blue, purple, magenta, and chartreuse, on a black background. The image resembles a faraway galaxy or magical realm. In truth, it’s a fluorescence microscopy image of the eyes of a daddy longlegs spider.

Igor Siwanowicz is a scientist and photographer who captures his subjects in extreme close-up with a digital camera and creates haunting, fluorescent images of others with a confocal microscope. He aims to reveal the beauty of nature’s tiniest beasts. “People have been socialized to be afraid of and revolted by insects and spiders. But that isn’t what I see.”

A gallery at the Janelia Farm Research Campus offers a sampling of Siwanowicz’s view of the world, including the daddy longlegs image, which won the 2010 Olympus BioScapes Digital Imaging Competition. Other striking photographs include one that captures red-eyed tree frogs twirling around a twig, a colorful sequence of kelly-green backs, blue and yellow legs, orange toes, and white bellies. Nearby, a pair of praying mantis rear up on their hind legs, flashing red “defensive colors” and displaying the “peacock eye” on their striated wings.

The praying mantis, with its fluid movements and stunning colors, is Siwanowicz’s favorite model. “Jumping spiders are pretty endearing, too,” he notes of the arachnids with prominent eyes. “They are the kittens of the spider world—fuzzy and very aware.”

Siwanowicz took up photography 10 years ago as a means to keep the winter blues at bay. It provided an outlet for his “quirky” sense of humor. “I wanted to show insects as celebrities,” he laughs. He treated them like miniature supermodels, employing the lighting and background techniques of fashion photography.

As his image library grew, Siwanowicz began posting them on a photo.net site. Soon, Olympus invited him to enter its BioScapes contest (five of his images—a record—earned recognition in 2012). The attention was gratifying, but Siwanowicz really knew he was onto something when people started asking permission to tattoo his images—like a devil’s flower mantis, front legs lifted high—on their bodies. “That’s a pretty big reward: seeing a full sleeve or back with your images,” he says. “I wouldn’t do it!”

As a member of Anthony Leonardo’s Janelia lab group since 2011, Siwanowicz studies the intricacies of dragonfly behavior as it hunts for prey. Specifically, he’s trying to suss out how a fruit fly’s position is communicated from the dragonfly’s brain to its flight muscles.

His science informs his art without question, but the converse has happened as well. Intrigued by the challenge of creating a three-dimensional microscopic image of a tick’s mouth, Siwanowicz used the same technique to explore the architecture of the joints between a dragonfly’s neck and wings.

“I’ve found the perfect marriage of art and science,” he says. “So many people think the beauty of nature is wasted on scientists. But, it’s all so beautiful at any scale.”

—Lisa Chiu

WEB EXTRA: To see more of Siwanowicz’s beautiful beasts, visit www.hhmi.org/bulletin/spring2013.