THE PHOTOGRAPHIC EYE

column & photographs
by Tony Wu

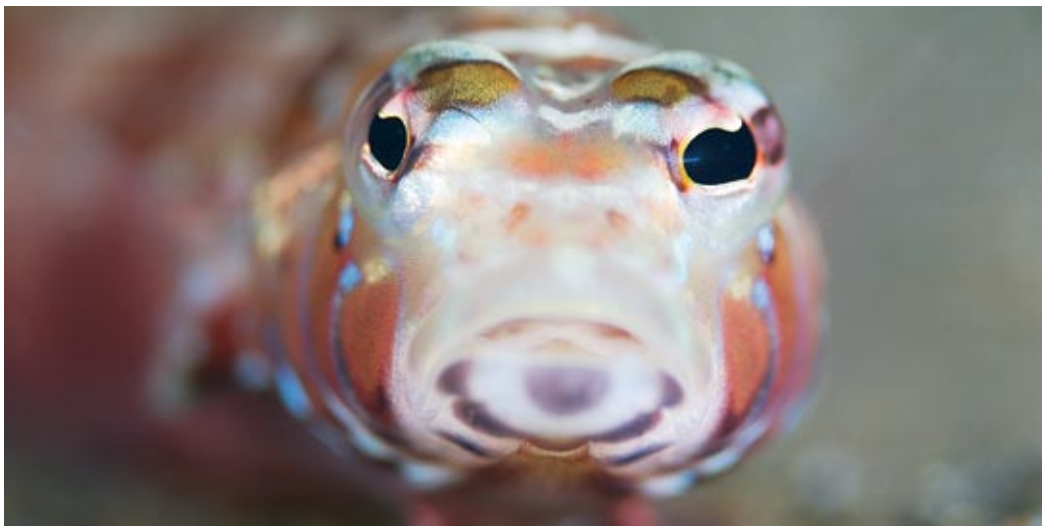
It occurred to me recently that taking super-macro underwater photographs (images involving greater than 1:1 magnification) has a lot in common with waging intergalactic battle. Let me explain.

When you see a great photograph, all you're looking at is an end result: a moment, an instant in time, a split-second when everything was just right—composition, lighting, mood—to produce a perfect picture. But there's much more involved than what you can see.

Consider the movie Star Wars ("Episode IV" to be exact). Toward the end of this classic sci-fi epic, Luke Skywalker flies his X-wing down a narrow trench on the Death Star and shoots missiles into a tiny passage, blowing up the Empire's big, bad destruction machine and saving the day.

Imagine for a moment that this is the only scene in the movie you watched—that you had not seen any of the action leading up to this final triumph. No doubt you would have shared the overwhelming joy of victory experienced by the good guys, but you probably would not have appreciated the moment as much as someone who had sat through all the scenes leading up to Luke's impossible shot because woven into the fabric of that final scene is all the information that came before—Obi-wan Kenobi's lessons for Luke, Princess Leia's role in the rebel uprising, the outright nastiness of Darth Vader and his cohorts, and so forth.

My point is that one of the best ways to appreciate and learn from a photo is to "sit through all the previous scenes"—in other words, to consider the things that contributed to the making of the photograph. As an example, let me highlight some of what I had to go through before I was able to successfully capture an image that I really wanted—a close-up portrait of a yellownose shrimp goby (*Stonogobiops xanthorhinica*).



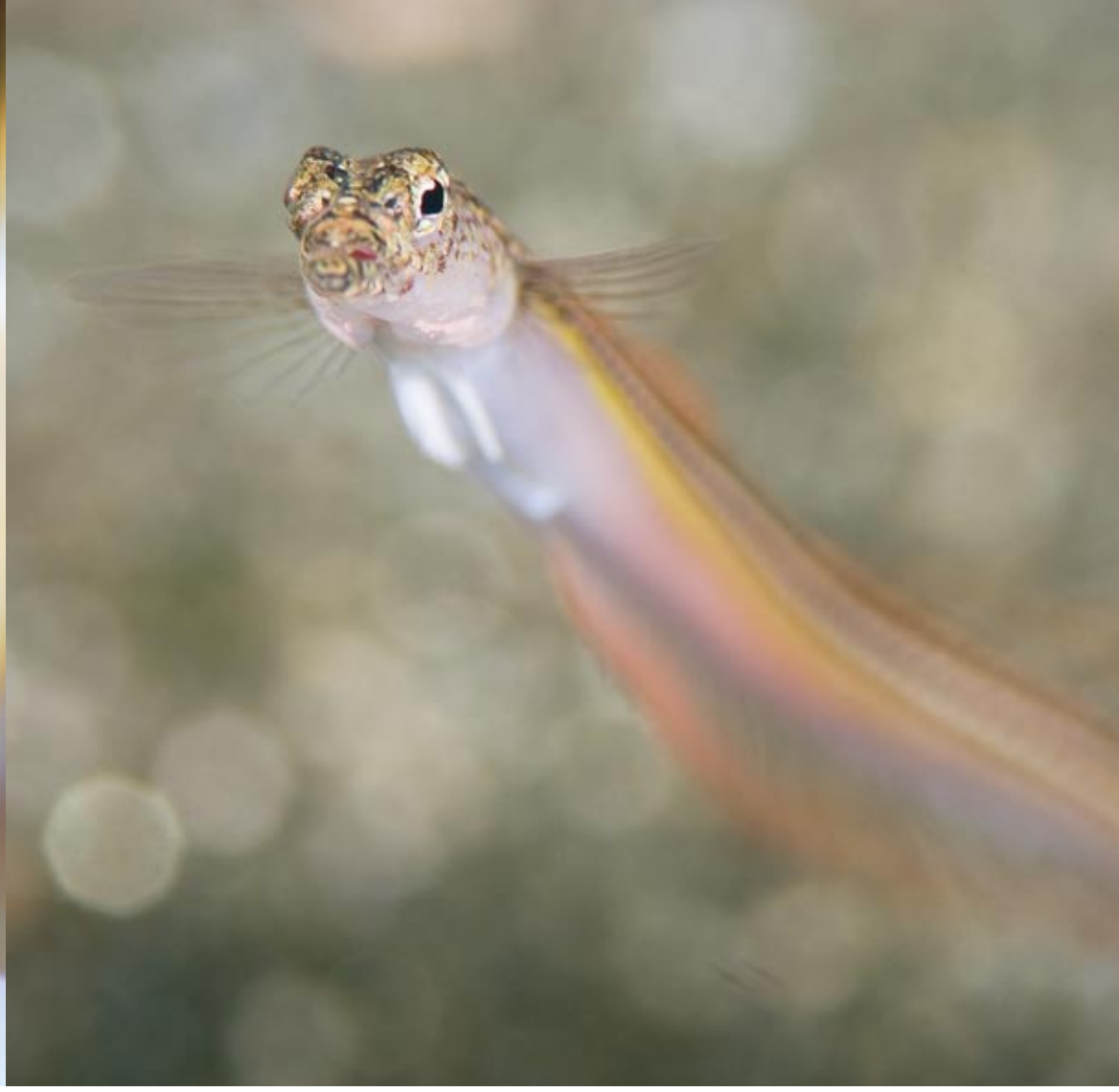
For super-macro shots, it's important to learn to use every available tool. Here, I used a 1.5x teleconverter coupled with 32mm of extension tubes.

GETTING THE RIGHT TOOLS:

To continue with the Star Wars metaphor, one of the first things Luke had to do before commencing his training as a Jedi Knight was to acquire the right hardware—in his case, a light saber. Similarly, to take a tack-sharp photograph of a goby in mid-water with its mouth open, I needed the right tools. And without the benefit of someone like Obi-wan to guide me, figuring out what would work required some trial and error.

Taking a close-up portrait of a yellownose shrimp goby entails, well, getting close. The obvious place to start was with a normal macro lens, but it didn't take long to figure out that this alone was insufficient for the task.

Eventually, I worked out how to use teleconverters, extension tubes, and diopters (along with attendant ports, extension rings, and focus gears) to take super-macro images at magnifications exceeding 1:1.For the goby shot I had in mind, teleconverters became my instruments of choice. They give me the magnification and reach I want (albeit at the cost of losing some light and image quality), and my eyes and hands are still good enough to perform the manual focusing that's generally required.



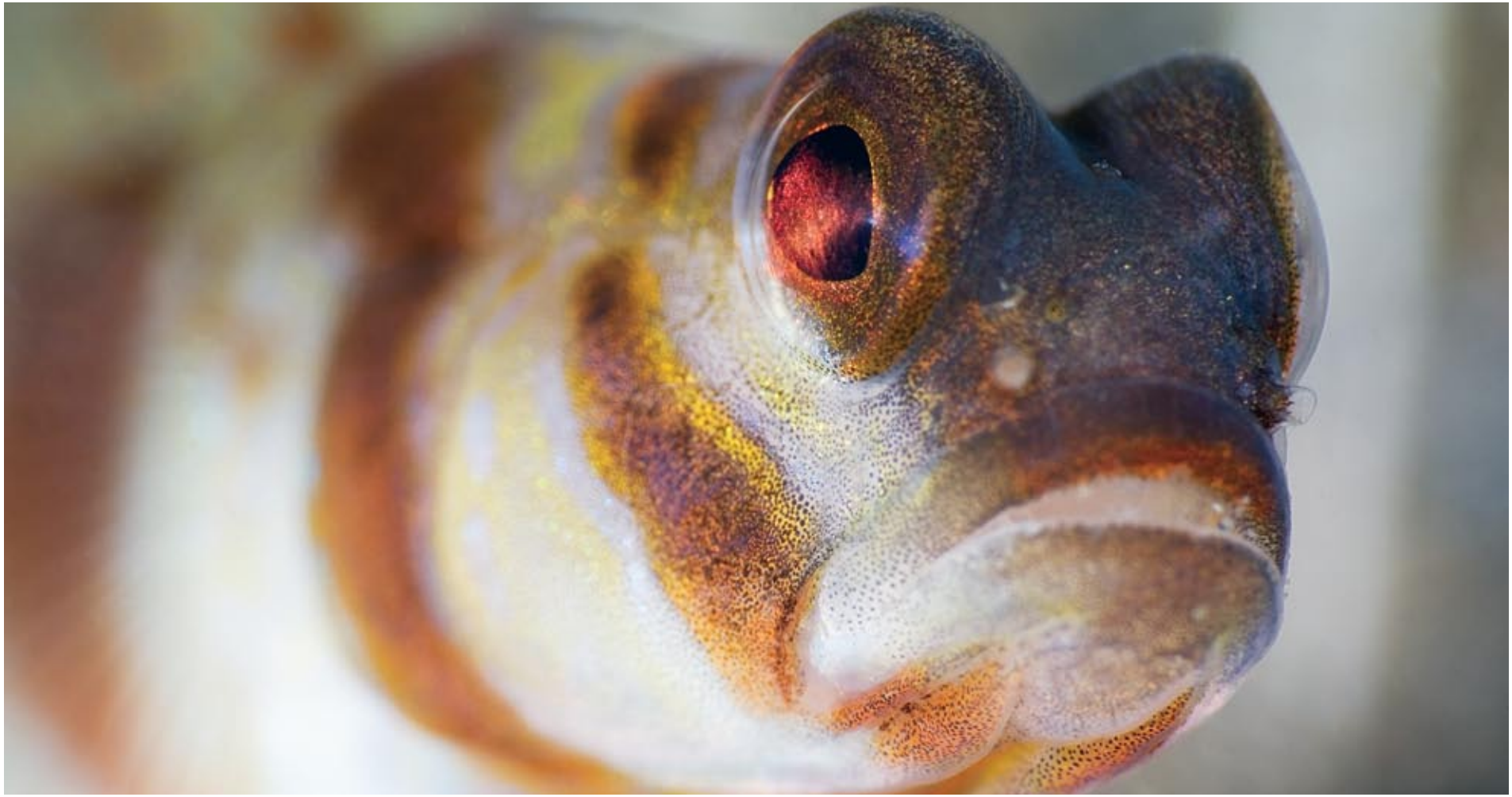
(left)
I practiced first with slow-moving subjects, figuring out how to work with manual focus and narrow depth of field.
(Nudibranch, *Hypselodoris bullocki*)

(right)
Later, I moved on to photographing more difficult subjects.
(Sand diver, *Trichonotus* sp.)

MASTERING THE TECHNIQUES:

Remember when Luke had to learn to use the Force in order to wield his light saber and fend off laser shots while blindfolded? My version of this training was to set up my macro lens plus teleconverter on land and practice in the comfort of my home. Just as it took Luke a while to figure out how to keep from getting zapped, I needed time and practice to develop the right feel for the nuances of an extreme macro set-up.

In the water, I practiced on stationary subjects first, before trying more challenging ones. Working with film cameras (as opposed to digital) meant a long cycle of making mistakes, processing and viewing the results, and trying again until I grew competent enough to nail a reasonably high percentage of shots.

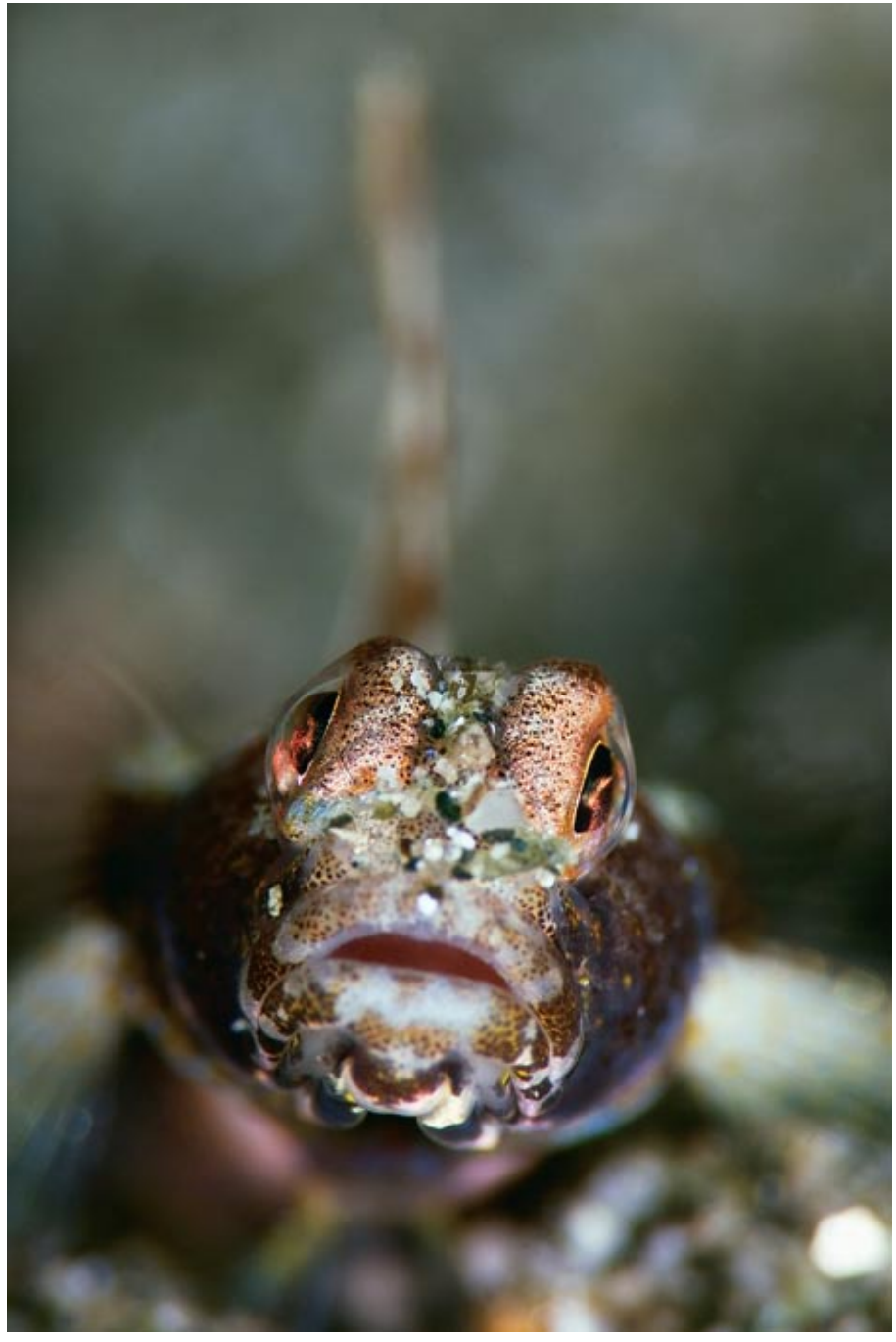


Spending enough time to get intimate knowledge of your desired subject stacks the odds in your favor. (*Amblyeleotris* sp.)

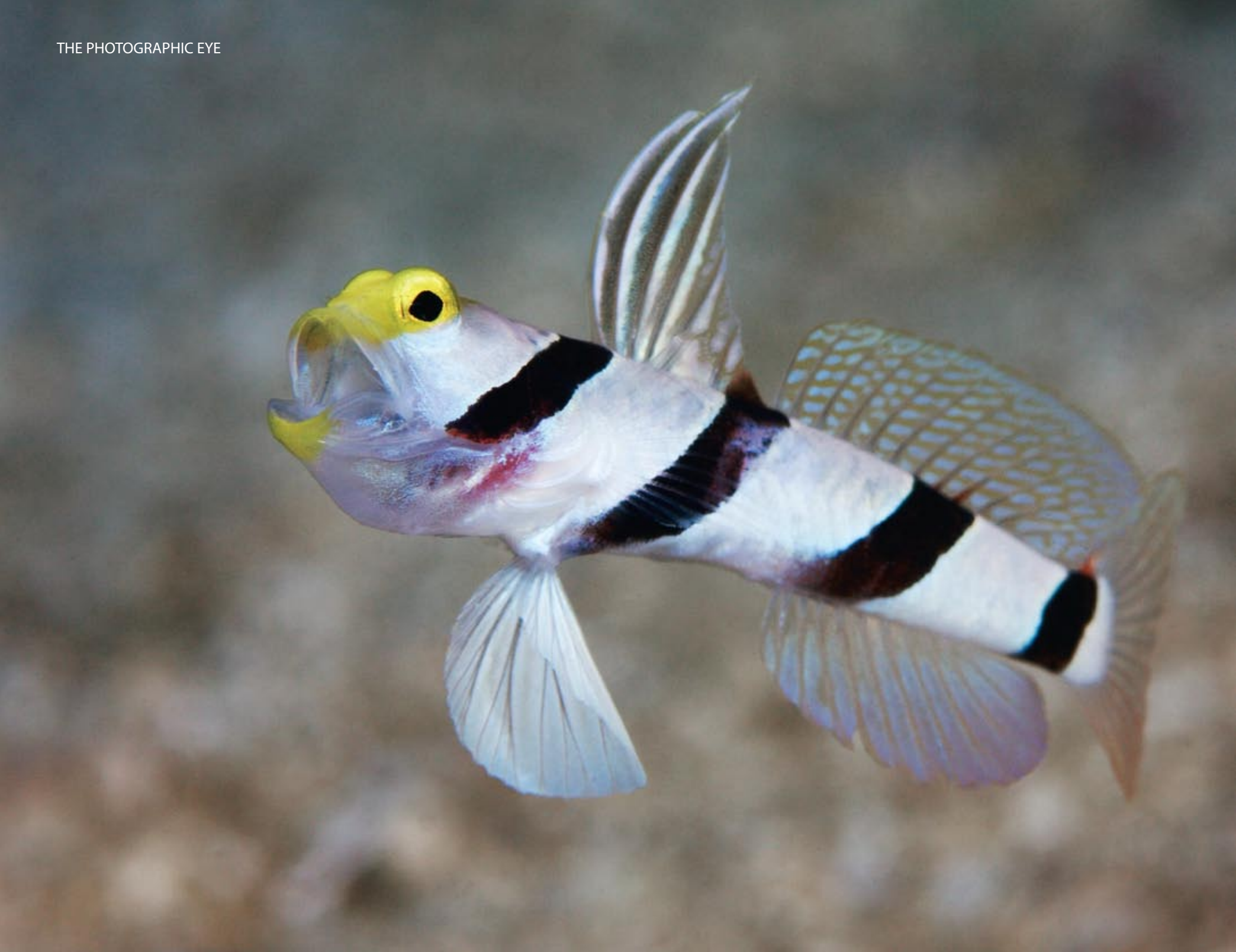
KNOWING THE SUBJECT:

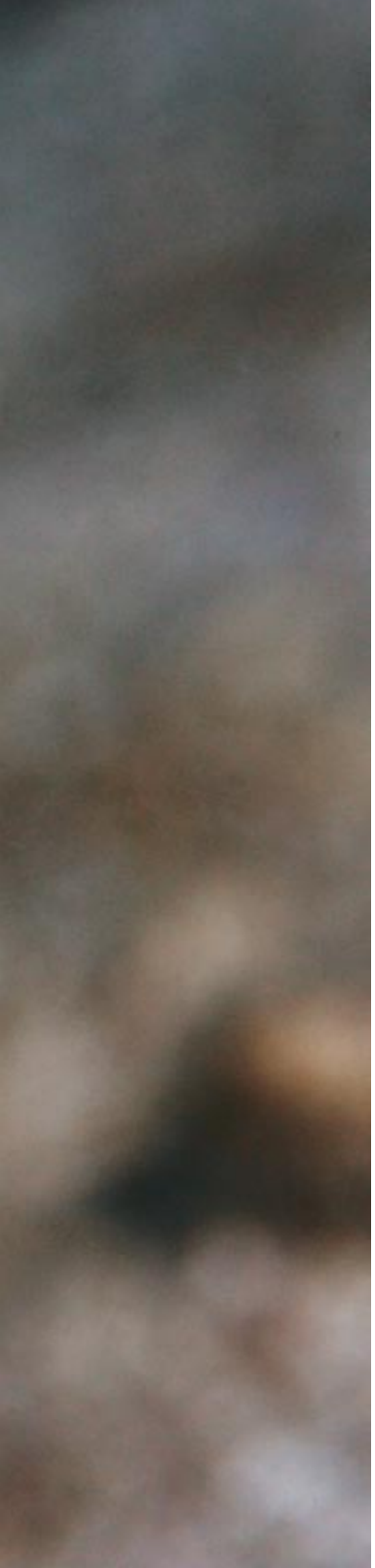
Whether preparing for interstellar battle or getting ready to photograph a skittish fish, it pays to find out as much as possible about your target. I read as much as I could about gobies in general, and the yellownose specifically. More importantly, I spent a lot of time watching my quarry—not photographing them, just observing how they move, when they hide, how long it takes them to peek out again, how they behave when divers swim past, how they swim in the current, and so on. This time invested in reconnaissance was vital to developing a sixth sense about goby behavior. Knowing what to expect and when to expect it can make all the difference between nailing a shot and just missing it.

LEARNING TO BE PATIENT: Like Luke, I'm incredibly impatient. Spending so much time fiddling with lenses and other hardware, practicing techniques, watching fish—doing everything but taking the photograph I envisioned—nearly drove me crazy sometimes. But learning to be patient was the single most important factor in capturing the goby image I wanted, as well as many other photographs. Had I "gone for gold" right away without putting in the time and effort to go through the steps explained above, I might have succeeded—but most likely not.



Learning to be patient is crucial, evidenced by the three hours it took me to gain the trust of this tiny fish.





Success at last—a yellownose shrimp goby with mouth wide open, fins flared and eye in focus.

SUPA-DUPA MACRO

My preferred set-up for gobies and similar subjects is a Canon EF 100mm f2.8 USM macro lens coupled with Kenko teleconverters, operated with manual focus. Some people argue against the use of teleconverters because they decrease light and degrade image quality. They do. But from personal experience, teleconverters are the most effective option for taking high-magnification photographs of relatively shy subjects, since they preserve working distance.

Diopters and extension tubes are excellent tools also, but both limit the far end of your focusing range, so they're best suited to subjects that won't duck for cover when you approach closely.

If you're interested in super-macro photography, try all three options—so you have the maximum number of tools at your disposal.

PUTTING IT ALL TOGETHER:

What I see when I look at this picture of a yellownose shrimp goby isn't just a fish photo. It's the many hours—both on land and in the water—I invested in experimenting with gear configurations, making mistakes, and scratching my head to figure out how to fix those mistakes. It's the many additional hours spent watching these gobies, as well as other related fish, to gain insight into how they behave and to develop a "feel" for when to pull the trigger. It's the many failed attempts, the times when I had the right fish with the wrong lens or the right lens with the wrong fish.

In other words—all the previous scenes that led to this one moment.

For more of Tony's work, visit: ***http://www.tony-wu.com***