

Digiscope

("Digiscoping")

Dr. Nicholas Hellmuth



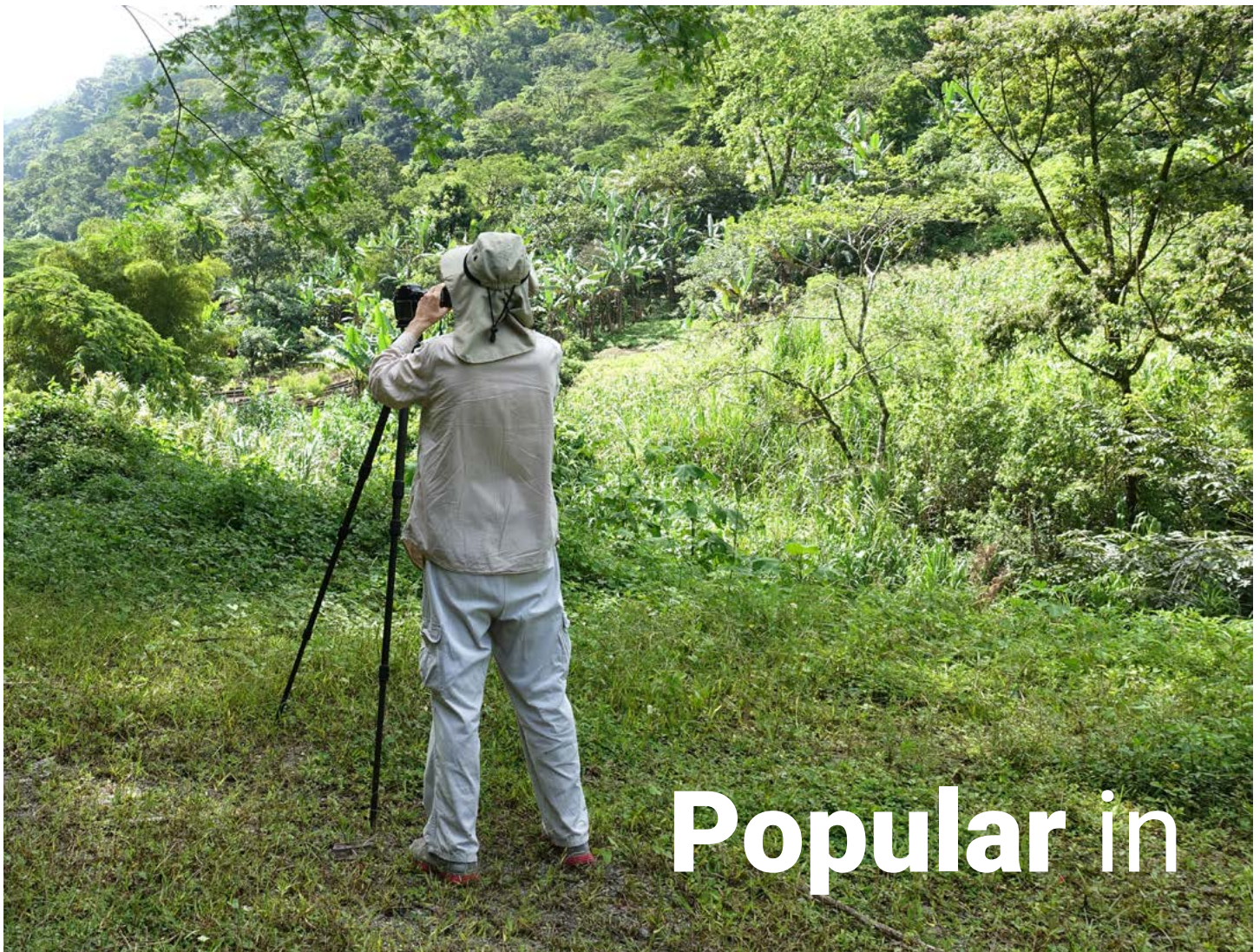
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Digiscoping *photography*

as a telephoto lens replacement???

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Popular in

Where in the world is Dr Nicholas this week?

Many people all around the world have birdwatching as a hobby. Lots of these birders also like to photograph the birds they have found. Most birdwatchers have learned that a digiscope is more realistic than a prime lens.

We have experimented with 180mm, 200mm, 300mm, and 400mm telephoto lenses to photograph birds. But for most birds (at least out in the Neotropical rain forests in Guatemala) they tend to fly away when they notice people. So even a 400mm lens is not enough to fill the frame with the bird.

Several people have suggested I use the 1.4x tele-extender more often. But my experience (54 years doing photography in Guatemala, Mexico, Belize, El Salvador and Honduras) is that the 1.4x tele-extendors are barely an advantage.

We will try a 600mm Nikkor prime lens in late July. A 800mm lens is too large and expensive, and even that will not reach a lot of birds. So birders use digiscopes; Zeiss, Leica, Nikon, and Swarovski Optic make professional quality digiscopes.



Birdwatching

In the photo on the previous page, our team is alongside the main highway from San Julian to Tamahu to Tucuru (Alta Verapaz, Guatemala; which then continues via La Tinta, Teleman, Panzos, El Estor, etc to Rio Dulce (Izabal). Yes, it literally is the main highway of this area. Sure helps to have 4WD. The team consists of minimally two Q'eqchi' Mayan photography assistants (each of whom have about three years experience on field trips and in the photo studio back at the main office in Guatemala City). Since a double-cabin 4WD pickup truck can hold five people, there are usually two additional assistants.

But there are other aspects of photography where digiscoping has not yet “arrived.” This aspect is flower photography. I estimate there are more millions of people who photograph flowers than there are birdwatchers who try to photograph birds. Very simple: most flowers are in front of you. And flowers do not fly away!

Let's dissect the first assumption: that flowers are close to you! We at the research institute FLAAR have been photographing Neotropical flowers of utilitarian plants of Guatemala intensively for the last several years. We have macro lens (5X Canon MP-E 65mm); we have tele-macro: EF 180mm f/3.5L Macro USM for Canon; AF Micro-NIKKOR 200mm f/4D IF-ED for Nikon). For obvious reasons we do not use Tamron or Tokina).



Nikon D810, AF Micro Nikkor 200 mm f/4 IF-ED lens, speed 1/320, f /10.0, ISO 8,000

This is the day that Senaida discovered this plant, growing high on a steep slope overlooking a curve in the dirt-gravel road between Tucuru and Tamahu, Alta Verapaz. We were in a hurry, so I used no tripod (since the pickup truck has no canopy, all the equipment is buried beneath a tarp, all tied down to eight places (for on each side). To get at the tripod requires untying the entire tarp; finding the tripod, and then covering the tarp back up with the tripod is replaced.

There is no way to use a van on these roads; and a GMC Suburban (or Tahoe) has a reputation of not surviving out on rough roads (my 1985 survived for years; my current 1995 is also robust). But everyone we have spoken with who has a new GMC 4WD full size says it's for light outdoors; not for serious rough roads.

No other vehicle is large enough (none of the Ford 4WD equivalents to the GMC Suburban are sold in Guatemala; so no spare parts in remote areas). Anyone who needs a serious 4WD has a double-cabin pickup: there are thousands and thousands and thousands of these everywhere in Guatemala: Toyota, Mazda, Mitsubishi, Nissan, Isuzu, and 1% Honda; plus VW Amarok (more than Nissan).



Nikon D810, AF Micro Nikkor 200 mm f/4D IF-ED lens, speed 1/320, f /10.0, ISO 8,000

This is a photograph taken two days later with a tripod (same lens, same flower, but with a tripod).



Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR Lens, speed 1/250, f /7.1, ISO 400

400mm lens photo



Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR Lens, speed 1/250, f /7.1, ISO 1,000

Here is a photograph taken with a 400mm lens with 1.4x tele-extender.

The difference between 400mm with and without the tele-extender is barely noticeable. This is why I decided to get a 600mm prime lens (on which of course you can also use a tele-extender).



200mm lens, no tripod.



200mm lens, with tripod.



400mm lens, with tripod



400mm lens, 1.4x tele-extender, tripod.



SWAROVSKI optical booth, Photokina 2014

Learning about SWAROVSKI OPTIK

I got my PHD from a university in Austria, Karl-Franzens-Universität Graz, also known as University of Graz. So I am familiar with the Austrian company Swarovski. Besides, if you hike through any of the airports in Moscow you see how popular Swarovski's other (non optics) products are with women (and their boyfriends). Same if you walk down any main street of Paris, New York, etc, and of course in Dubai: you see the Swarovski crystal jewelry.

But my interest is digital photography, so I see Swarovski at Photokina, every two years, especially Photokina 2014 and Photokina 2016.



SWAROVSKI optical booth, Photokina 2014



Dr Nicholas talking with Dale Forbes, head of Strategic Business Development, SWAROVSKI OPTIK, Austria. Booth of SWAROVSKI OPTIK, Photokina 2016



SWAROVSKI optical booth, Photokina 2016

At the Photokina booth, the hospitable and helpful Swarovski person said that a new accessory was coming for Spring 2017, for full-frame cameras (TLS APO adapter).

We have a Canon EOS 1DX Mark II and a Nikon D5, the top camera bodies of each brand. We have both brands for two reasons: we can better understand the pros and cons of each, and we can provide the university students who work for FLAAR Mesoamerica in Guatemala the brand they prefer: 90% prefer Canon EOS. I have been using Nikon cameras for decades (Leica since 1961, but gave up once the digital era arrived, since Canon and Nikon invested deeply in the software and electronics needed for digital photography).

Leica was a specialist for outstanding lenses; but in the digital world what counts is how the image is processed by the firmware.

Leica has advanced in recent years, and what I saw in their booth in Photokina 2016 was impressive. But I would prefer their "medium format" as a system that should be able to beat both Nikon and Canon. But with no 1:1 macro lens, would be tough to beat Nikon (lots of 1:1 macro) and Canon (1:1 and 5X with the MP-E 65mm macro).

Exploring the Worldwild Potential

For using Digiscopes for flower photography

Thousands of people use digiscopes for bird photography. But how many millions of people love to see and photograph flowers? Obviously it is considered that all the flowers are close to you, so at most you need a 200mm lens.

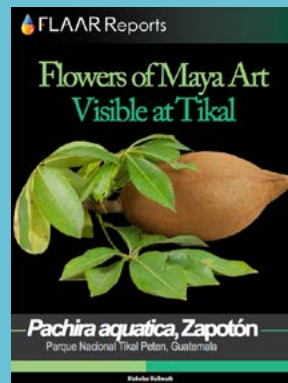
But... but out in the mountains, jungles, deserts, and swamps there are flowering vines flowering so high up in giant trees that you can't even see the flowers with your eyes (Smilax species is a good example). We raise Smilax in our Mayan ethnobotanical garden so we know how high up a Smilax vine can climb.

But where we find the most need for digiscoping is to record and document flowers and fruits which are on mountainsides that you can't access yourself: the hill is across a canyon, or across a roaring river.

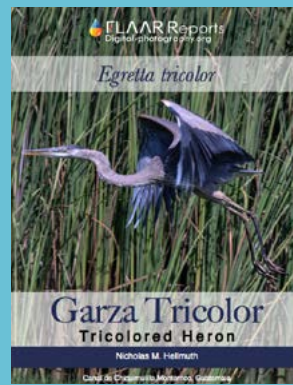
In the case of the *Heliconia spissa*, the flowers were so high up a steep slippery hill that there was no way we could get closer. But with an appropriate SWAROVSKI OPTIK digiscoping system, we can record the rare Neotropical flowers of Guatemala (and show the world the benefits of digiscoping for botanical research plus for flower lovers on vacation).

The forests of Guatemala are being destroyed by commercial plantations: for teak, Brazilian rubber trees, and African oil palm plantations. This kind of "farming" has destroyed more of Guatemala in the last 15 years than even clear-cut mining.

With the help of a SWAROVSKI OPTIK digiscoping system, we can bring the remarkable eco-systems of Guatemala to the forefront, and help document the need for conservation.



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