Chattanooga Here We Come — California is so 2008!

by Rick Cech

Many butterfly enthusiasts travel long distances each year, searching for exotic rarities at remote observation posts. But as I first discovered while roaming about the East Coast in the 1990s, gathering photos for my 2005 book — and then again when visiting this year’s NABA conference site in 2012 and 2013 — exceptional butterfly habitats exist where you find them, and that’s not always along the southern border, in mountain enclaves, or along desert arroyos.

Take Chattanooga. Securely nestled along the Alabama border, this former native fishing village on the Tennessee River, occupied by humans since the Paleolithic, has an excellent butterfly pedigree, and for the uninitiated offers an unexpected array of attractions.

One hundred years ago, before there was any such thing as commercial air travel, Chattanooga was a strategic rail crossing-point over the southern Appalachian Mountains, accessible from the Cumberland Gap down the Tennessee Valley or overland from Atlanta and the Carolinas. During the Confederacy, its tracks connected eastern and western gray states, and Chattanooga became known as the “Gateway to the South,” or “where cotton meets corn.” It was not surprising, therefore, that although the city’s population is just over 170,000 it was celebrated in the popular song Chattanooga Choo Choo (in the 1940s), nor that it lies along the corridor of the nation’s proposed high-speed rail line.

Chattanooga’s historic role as a regional transit hub applies from other perspectives as well — including geographic, ecological, and (happily enough) lepidopteran. Situated near the southern end of the rich Appalachian Ridge and Valley province, it sits at the base of the Tennessee Valley (part of the long Great Appalachian Valley). The broad Cumberland Plateau extends to the northwest and the Great Smoky Mountains rise nearby, in the northeast. Several other exceptionally diverse and interesting butterfly habitats also are within easy reach, moreover, a mere car ride away.

Geological variety is typical of the Chattanooga region, and underlies much of the area’s subtle ecology.

After some discussion in the literature, Tennessee’s landscape is now divided into a series of more-or-less agreed-upon physiographic provinces, each encompassing a characteristic set of terrains, habitats and signature ecosystems. Alternative category systems have various differences: notably, some have as few as 6-9 categories and are quite high-level, whereas others are far more granular. The present discussion will keep to the higher-level end of this discussion. From the Mississippi River in the west, the state’s topography undulates eastward, gradually increasing in elevation. Most sites near the Members’ Meeting are located in the Cumberland Plateau, the Ridge and Valley province, the Highland Rim, or the Central (Nashville) Basin.

The Cumberland Plateau, a former hunting ground of Daniel Boone, is a broad tableland of sandstone and shale which the Nature Conservancy describes as “the world’s longest expanse of hardwood-forested plateau,”
and which “today is a labyrinth of rocky ridges and verdant ravines dropping steeply into gorges laced with waterfalls and caves, ferns and rhododendrons.” Those who study evolutionary history in eastern North America are aware of the immense biological diversity associated with the refugia of the southern Appalachians, and the region’s diversity is well-represented on the Cumberland Plateau today.

In northern Alabama, most habitats of interest to Members’ Meeting attendees are located in the Interior Low Plateau and upper Gulf Coastal Plain provinces. The northern plateau consists of rich, limestone-based ecosystems, replete with intriguing topographic features and specialized plant and animal species. The more southerly province is somewhat hilly, located in the upper reaches of southern Alabama’s broad and otherwise mainly flat coastal plain. Its habitats, as well as many of its species, can be reminiscent of ecosystems along the Atlantic Coastal Plain, such as the Great Dismal Swamp in southeastern Virginia.

But for many attendees, the Tennessee Members’ Meeting is all about one species, the Diana Fritillary. This spectacular butterfly, with distinctive male and female forms (both striking), is indigenous to the narrow, steep-

Opposite page:
Any butterflier worth her nectar will look at this photograph of a meadow — filled with blooming blazing star and butterfly milkweed — and make a butterfly-line for this location! It is Savage Gulf State Natural Area, a site that will be visited each day during the NABA Members Meeting. June 16, 2012.

Female Aphrodite Fritillaries in the southern Appalachians are often quite dark above. June 16, 2012.
sided valleys of the Cumberland Plateau and Appalachian Ridge and Valley province. And while Dianas often turn out in respectable numbers at prime locations, with males and females flying together if one has luck, they also enjoy the seclusion of their forested cloisters, and may require patience to locate.

The flight period for male Dianas begins earlier than the females’ by a week or so, and it is possible to miss one sex or the other on any given outing. But females are generally less obvious throughout the June flight, and they are also decidedly more skittish. It can require only a miniscule disturbance to send a nectaring female scurrying off to hide in deep cover, where she may remain for up to a half day, what else do you really need?

Moving west, some attendees may wish to visit Muscle Shoals, in northwestern Alabama, in the Interior Low Plateau province. This pilgrimage may be made in tribute to the Fame Recording Studio, where a parade of famous musicians have recorded songs since the late 1950s (Notables include Aretha Franklin, Otis Redding, Wilson Pickett, Duane Allman, Paul Simon, Paul Anka, Etta James, Bob Dylan, the Rolling Stones, Mac Davis, Andy Williams, Tom Jones, etc.). But for Members’ Meeting purposes, the objective is far more likely to be the Cane Creek Canyon Nature Preserve, a privately owned, 700-acre refuge that partners with the Nature Conservancy.

Many of the species found along with the Diana will be familiar to eastern observers, including woodland hairstreaks, several sought-after swallowtails (including Pipevine and Zebra), Tawny Emperor, and the like. But, to be honest, once you’ve seen a Diana for the day, what else do you really need?

Before leaving Cane Creek, it is possible to see a multitude of bird species (all photographed together in a single frame once; Creoles are common in season), Silvery Checkerspots, Harvester, and many other species. But the principle attraction for Cane Creek visitors is a lowland colony of Swamp Metalmarks, discovered on May 28, 2011 by Vitaly Charny, an active field naturalist and photographer, co-author of Butterflies of Alabama (2010). This is the southernmost known population of Swamp Metalmarks. The Cane Creek colony uses Tall Thistle, whereas Swamp Thistle and/or Soft Thistle are used at most other sites.

In the end, given their geographic separation and specific dietary preference, individuals may be found to have a distinct taxonomic identity. At present, the colony is being studied regularly by Sara Bright and Paulette Ogard, who together wrote Butterflies of Alabama: Glimpses into Their Lives (2010).

For present purposes, the ecological complexity of northern Alabama geology — or of its profound effects on ecological communities and butterfly occurrence — just ask Jim Lacefield, author of Lost Worlds in Alabama Rocks: A Guide to the State’s Ancient Life and Landscapes. Along with his wife Faye, Jim meticulously assembled the parcels that comprise Cane Creek, and the couple now oversees the property with dedicated personal attention.

Farther south, at the upper reaches of the Gulf Coastal Plain, the patient observer may locate yet another prized eastern butterfly, the Mitchell’s Satyr. NABA President Jeff Glassberg, and NABA Secretary/Treasurer Jane Scott, first discovered this population in 2000, to their surprise, while wandering into the Oakmulgee Ranger District in Talladega National Forest, just before Jane delivered the commencement address at Judson College in nearby Marion, Alabama (see American Butterflies, Winter 2000). As noted earlier, some of the habitats where Mitchell’s Satyrs fly in Alabama are reminiscent of Atlantic coastal plain habitats, complete with Lace-winged Roadside-Skippers, pearly-eyes, and Palamedes Swallowtails (see American Butterflies Winter 2009). But the butterfly fauna here also includes some distinctive local specialties, such as Twin-spot Skipper.

While waiting for a satyr to appear, moreover, visitors may be treated to the songs of nesting Swainson’s Warblers.

When coming or going from the conference area, attendees are advised to linger awhile near Nashville — and here again not just in homage to the Grand Ole Opry. Located in the state’s Central Basin, Nashville’s ecology is unexpectedly distinctive. The basin was formed when a central geological dome thrust upward, causing erosion that left behind a broad depression covered with limestone bedrock (dating from the Ordovician Period, some 480 million years ago, when the land was submerged). Because of this, it is observed that when leaving Nashville from any direction one must travel uphill.

For present purposes, the ecological upshot of Nashville’s basin geology is a series of Cedar (Limestone) Glades, which are rocky, low-growth habitats. Cedar glades have very little overlying soil. Visually, they present an interspersed patchwork of exposed bedrock, sparse, prairie-like grassland and dense cedar thickets, all reminiscent of the
alvars found along the Great Lakes. As with the alvars (and indeed, even more so), these highly specialized ecosystems have developed a cadre of endemic associated plant forms, most notably the showy Tennessee Purple Coneflower. Many disjunct prairie and arid-country species also flourish, such as blazing stars and pricklypears.

The cedar glades are an excellent place to observe an array of central Tennessee butterflies. Species of note during the Members’ Meeting period include Hackberry Emperor, Silvery Checkerspot, Variegated Fritillary, ‘Olive’ Juniper Hairstreak, Hoary Edge, Goatweed Leafwing, and a healthy population of Southern Dogfaces. To help in gaining familiarity with the area’s butterfly fauna, a new book will be available by conference time, written by Nashville resident and conference co-chair Rita Venable, *Butterflies of Tennessee: Field & Garden*.

Lastly, a word of caution. Many butterfly species develop distinctive local phenotypes or subspecies in the southern portion of their ranges, not illustrated in field guides. As a New Yorker, I first noticed this phenomenon when forced to re-learn familiar skipper species in northern Florida, around Gainesville. Similar i.d. challenges await visitors to Tennessee and northern Alabama. In some cases, local differences may be attributable to isolation in specialized Appalachian habitats. Thus, the dark, boldly marked ‘Appalachian’ Aphrodite Fritillary may confuse those familiar with its more typical forms to the north.

And in northern Alabama, a number of local species variants may look unfamiliar, including skippers such as Sachems and Crossline Skippers. Even female Dianas, at the southwestern tip of their range in south-central Alabama (e.g., in Alexander City) may lack most of the distinctive blue upper hindwing band seen farther north.

It is worth saving some time to explore Chattanooga itself, including the Tennessee Aquarium (meeting attendees will be given discount tickets) and its various historic monuments and museums. Also, the city has some highly advanced technology: Chattanooga is often referred to as Gig City, in recognition of its early installation of an ultrahigh-speed, optical internet service available to residents at low cost. In the off chance of rainy weather during the conference, members may be comforted to know that they should be able to download a full, 2-hour HD movie in just 33 seconds (versus 25-minutes at many other potential conference sites). Hey, what could be finer?

Enjoy Chattanooga!

All photos this article by Rick Cech, unless indicated otherwise.