Heard it through the Pipevine

May / June 2006

Newsletter of the Austin Butterfly Forum • www.austinbutterflies.org

We have another packed newsletter. Ro Wauer graciously allowed us to print an article he wrote on—get this!—cave butterflies. Jeff Taylor reports on our butterfly gardening workshop and tells us about the Southern Dogface, while Julia Marsden tells us about the Dogface host plant. Inspired by last month's amazing cave talk by Dr. Jean Krejca (we thank you!), Joe Lapp tells us the story of how Central Texas' cave life evolved.

Club Meeting

Monday May 22, 7:00 pm

Zilker Botanical Garden Center

Rob Plowes speaks on "**Butterfly wing patterns: more than just decoration**." He will review ideas about how wing patterns are formed and the genetics of pattern formation. Rob is in the graduate program in biology at the University of Texas at Austin and is researching butterflies in Costa Rica. Rob spoke to our club years ago on the Butterflies of South Africa.

Thank You!

Our first Butterfly Gardening Workshop had a great turn out, raising $200 for the club, excluding expenses. Thank you forum members for donating plants, and thank you **Dan Hardy**, **Doris Hill**, **Mike Quinn**, and **Jeff Taylor** for organizing the workshop.

Membership Reminder

Membership is now paid per calendar year with quarterly prorating after the first quarter. The cost is $20 per household. If your membership has expired please don't forget to renew.

Butterfly Gardening Workshop (M. Quinn)

Our First Butterfly Gardening Workshop

by Jeff Taylor

The Forum's first Butterfly Gardening Workshop was held Saturday, May 6, 2006, from 1:00-5:00pm at Zilker Botanical Garden. Its purpose was to inform participants of ways to encourage butterflies and other beneficial insects to visit their garden and yard. A wide variety of host and nectar plants were discussed. Participants also learned techniques for raising caterpillars. Black swallowtail, Gulf Fritillary, Dogface, Cloudless sulfur, and cecropia moth caterpillars were available as demonstrations of raising caterpillars. An adult Gulf Fritillary took the opportunity to emerge from its chrysalis during the workshop.

Each of seven participants was provided at least 14 nectar and/or host plants in four inch pots or larger to get them started with enhancing their garden. The cost was $30 per person.

The workshop's success was due to the many Forum members that donated plants and to Dan Hardy, Doris Hill, Mike Quinn, and Jeff Taylor for organizing and conducting the workshop.

El Salto cave and Ro Wauer

Cave Bugs at El Salto, Mexico

by Ro Wauer and Betty Wauer

We had followed the dirt track to near the base of the great travertine cliff where the once proud Rio El Salto had poured into a blue-green pool below. The morning was still cool and overcast; we had seen very few butterflies along our quarter-mile route to the end of the track. From there we could look into the diminished pool below, and to our immediate right was an entrance to a small cave in the shrub-covered hillside. Knowing that some butterflies roost in such protected locations, Ro suggested that we check out the cave for what might be present.

So, without the aid of a flashlight, Ro, Joe, and Betty walked into the cave, and almost immediately startled a number of butterflies that had been perched on the upper walls and ceiling. Once some of the individuals landed, Ro identified them as Flats (*Celaenorrhinus*), but he was unable to determine speciation. Ro and Joe did manage to take a number of photos, but focusing was difficult in the darkened cave. And, as we progressed deeper into the cave, disturbing even more individuals, we discovered that the cave had been serving as the area toilet for some time. Walking into the cave required judicial care.

Our group consisted of six individuals: Cathy and Donn Cook, Joe Holman, Lee Zieger, and Betty and Ro Wauer. The cave ran only about 15 to 20 feet into the cliff and was about three to five feet in width, yet we were able to walk upright. The majority of the Flats, estimated at “about 20” by Betty, from her vantage point at the entrance to the cave, had moved onto the back walls where it was even darker. When Cathy and Donn joined us at the cave and saw our situation, they hurried back to the vehicle and retrieved a small flashlight. We were then able to further explore the cave and to obtain additional photographs. After examining the images Ro was able to identify our Flats for sure as Fritzgaertner’s (*C. fritzgaertneri*).

Fritzgaertner’s Flat in cave (R. Wauer)

As Ro and Joe continued their attempts to get just the right pictures of the Flats, Betty remained just inside the entrance; she was thus in a position to hear and see what was going on in the cave and also to observe the growing activity on the outside. A local “family” group of ten to twelve people had arrived but were keeping a respectful distance while apparently waiting to use the cave. After some minutes passed, a few individuals went off into the adjacent bushes.

Betty decided to let them know that we were in the cave photographing butterflies and would soon be out of their way. So she walked over and tried to explain what we were doing. She used the name “mariposas” (Spanish for butterflies), and this caused the entire group to look toward the cave and back at her with barely suppressed giggles. So she tried again to explain. This time she added hand signals representing a butterfly in flight, a person taking a picture, and numerous other equally strange movements, all the time saying “mariposas” or something resembling that word. Meantime, in the cave, the excited voices of the four explorers could be heard, and the lights of the camera flashes and the flashlight could be seen. It was just too much for the polite group of Mexicans. They were reduced to laughter, as was Betty.

When Ro, Joe, Donn and Cathy finally emerged from the cave, they discovered Betty and all the locals watching them from near the entrance. Betty quickly asked Joe to explain to the group about photographing butterflies in the cave. He did so, and the mystery was finally solved for the Mexicans, although most of them seemed even more puzzled that we “gringos” would go into that cave for the purpose of taking pictures of butterflies. The mystery was also solved for Betty when Joe asked if she knew

that “mariposas” was butterfly, but “mariposos” is vernacular for “gay”!

As we were starting to leave the area, one of the young Mexican men approached Betty and in broken English (much better than Betty’s mutilated Mexican) said some nice things and ended with “Please come back.” We most definitely will!

Our seven-day trip to northeastern Mexico included several well-known butterfly-finding sites within Tamaulipas and San Luis Potosi, including the El Salto area. Of the various sites visited and the 206 species recorded, none were as welcome or as strange as the Fritzgaertner’s Flats in the El Salto cave. It was the first time in a dozen trips into northeastern Mexico that Ro had found so many Flats at one site, suggesting that this crepuscular species might often roost in groups in such protected places.

Originally written for “American Butterflies.”

Southern Dogface (M. Quinn)

Butterfly of the Month: Southern Dogface

by Jeff Taylor

The scientific name of the Southern Dogface is *Colias cesonia*. A few authors use the genus *Zerene*.

The Southern Dogface is an abundant butterfly in the southern United States from California to South Carolina but can be seen along the Atlantic Coast north to Maryland and in the Midwest. Present throughout the year in central Texas, it prefers open habitats such as pastures, prairies and open woodlands. I frequently see this butterfly flying in my neighborhood and along the trails of Barton and Bull Creeks. It flies a few feet above the ground in an erratic pattern.

The Dogface derives its name from the poodle head outline present on the upper forewings. This poodle head or dogface image is visible when the wings are opened (which is rare when perched) or when the wings are closed if they are strongly backlit. The image of the dogface is less pronounced in females than in males. The hindwing below has a central spot with a silvery center. The forewing apex is pointed compared with the more rounded forewings of other large sulfurs. The Dogface has seasonal forms: summer and winter. The hind wing below in the summer form is primarily yellow. In the winter form, sometime referred to as *rosa*, the hind wing below is darker with pink mottling.

The host plants of the Southern Dogface are leadplant (*Amorpha fruticosa*), kidneywood (*Eysenhardtia texana*), daleas (*Dalea* species), false indigo (*Amorpha californica*) , baby bonnets (*Coursetia axillaris*), and clovers (*Trifolium* species), all of which are members of the legume family. Although kidneywood and black dalea (*Dalea frutescens*) are present in my yard, I have only observed the kidneywood being hosted upon.

Caterpillars have two forms: green with yellow bands edged with black (see photo) or green with a longitude cream-colored lateral stripe. All the caterpillars I’ve observed have been green with the yellow bands edged with black.

Dogface larva on baby bonnets (M. Quinn)

The caterpillars are easy to raise, when you can find them. I raise them in a ten-gallon aquarium with a wire mesh top. I feed them kidneywood, and I keep the kidneywood leaves fresh by placing the stems through a hole in the lid of a water-fill container. The caterpillars form chrysalises on branches placed in the aquarium. The adults emerge about 10 days later. You can easily observe the wing color and pattern during their last few days in the chrysalis.

Kidney Wood (M. Quinn)

Plant of the Month: Kidney Wood

by Julia Marsden

Texas Kidney Wood, *Eysenhardtia texana*, is highly fragrant and acts as a magnet to butterflies and bees in search of nectar. Doris Hill reports that Kidney Wood is in bloom at the bottom of the butterfly trail at Zilker and that you can smell the sweet scent from a considerable distance.

Kidney Wood, a native plant, is an open, multi-trunk, deciduous shrub that belongs to the legume family. It grows 3 – 10 feet tall. In its natural habitat which includes central, west and south Texas. Like other woody legumes, it is quite drought tolerant once established.

The leaves are 1½ – 3½ inches long, with numerous leaflets (think of mesquite). The fragrant flowers are white to yellow and occur in axillary or terminal spikes. Individual flowers are small, about _" long. Kidney Wood blooms through the summer which makes it an important source of nectar during hot, dry periods. The fruit is a small legume or bean that contains one seed.

Kidney Wood is one of the larval food plants for the Southern dogface.

Cave Beetle *Rhadine austinica* (J. Krecja)

The Galapagos of the Cave World

by Joe Lapp

Central Texas is the Galapagos of the cave world. Many cave systems around the globe harbor species not found anywhere else, but the caves of Central Texas harbor such species in concentrations higher than any other cave system anywhere, save possibly one. Ten of the thirteen federally endangered arachnids and five of the twelve federally endangered beetles are found only in the caves of Central Texas. Some are found in only one cave or in only a few.

One cave alone, Tooth Cave to the west of Austin, is home to 64 cave-dwelling species, including five that are protected under the Federal Endangered Species Act. Tooth Cave is only 166 feet long and 18 feet deep. Compare this to the entire Mammoth Cave system in Kentucky, which is home to 130 cave-dwelling species and has eleven species protected under the Federal Endangered Species Act. This is about twice as many species as Tooth Cave has, and yet the Mammoth Cave system has a full 300 miles of caves—it's nearly ten-thousand times larger.

How can this be? What makes Central Texas so special? It starts with Texas' geographical location. Central Texas is where the eastern forests end and where the desert habitat of the southwest begins, positioning it to benefit from the "edge effect" of habitats wherein species of both are present. It is also ideally situated latitudinally: to the south are the tropics, hugely diverse with fauna not adapted to freezing temperatures, and to the north are the temperate habitats with their largely distinct over-wintering fauna. Together these factors create an ideal hotspot for biodiversity above the ground. Since the above-ground diversity is typically ancestral to the

below-ground diversity, subterranean Central Texas has had a much richer stock from which to evolve.

But the story does not end there, since in addition to diverse stock we need conditions suitable for speciation. What makes Central Texas so special is its fortunate combination of huge surface diversity with its extensive length of karst habitat broken by the Balcones Fault.

"Karst" is the terrain of an eroding limestone region, a region full of sinkholes, streams that vanish into the ground, springs where water re-emerges, rocky canyons, and caves; and it covers about 20% of Texas. Karst provides the cave fauna with their distinctive light-less habitat, with its dearth of energy sources, its high humidity, and its stable year-round temperature. These subteranean conditions pressure species to over time evolve low metabolism, colorlessness, and eyelessness. Terrestrial cave dwellers also typically evolve longer bodies and appendages, since length allows them to span crevices and better feel their surroundings, and since desiccation is unlikely in the cave humidity (the opposite trait, compactness, helps retain water by reducing surface area).

While the pressures of this environment tend to evolve species of different ancestry towards similar traits, organisms are still amazingly good at getting around, and a given species can still be commonly found among caves. To produce new species we need one more ingredient, and that ingredient is the Balcones Fault. The Balcones Fault is an enormous break in the earth spanning much of Texas and crossing hundreds of miles of karst. The land south and east of the fault fell by nearly twelve-hundred feet, fracturing the extant cave system and isolating once-connected caves from each other. Then for millions of years water fell over this drop, causing the karst north and west of the fault to erode deeply, carving the canyons that now comprise the hill country and further dividing and reshaping its caves.

As a result of the fault, across a huge region of Texas, species that once spanned great lengths of cave were now isolated into smaller caves. No longer able to mix genes among the full population and evolve together as a whole, the genes of the multiple populations began to drift apart, many drifting until they became distinct species, no longer able to interbreed. These species include fish, salamanders, daddy longlegs, spiders, pseudoscorpions, centipedes, beetles, crickets and silverfish. Among them is the eyeless spider *Cicurina madla*, pearly with a fuzzy-white abdomen, living under rocks in a web that likely catches each meal by entanglement, the way an insect might get stuck in cotton. Another is the nearly-eyeless carabid beetle *Rhadine austinica*, an elegant mahogany colored beetle elongated to facilitate extracting cave cricket eggs from their oviposition tunnels.

Species such as *C. madla* and *R. austinica* are called "troglobites." A troglobite is a cave obligate, a species that lives its full life in a cave and cannot live outside of a cave. When a species can live its entire life either in a cave or in a suitable habitat outside of a cave, the species is called "troglophile." Texas troglophiles include the spider *Cicurina varians*, a close relative of *C. madla*, except that *C. varians* has eyes and an orange coloring. Species that frequent caves but which cannot live entirely within a cave are called "trogloxenes." The camel cricket *Ceuthophilus secretus* is especially notable among the trogloxenes, as it may occur in the hundreds or thousands within a cave. These crickets emerge en masse from the caves to feed, and returning to the caves they provide valuable sources of energy in the forms of guano, eggs, and carcasses when they die.

Cave Spiders *C. madla* & *C. varians* (J. Krecja)

All animals including cave animals need food and water to survive. Water comes from sources such as rain water trickling through cave ceilings, streams passing over sink holes, or even aquifers. Plants are the primary source of food in above-ground ecosystems, but plants can't live deep in caves, so organic material must wash in to provide food for detritivores, or it must be brought in by regular visitors such as cave crickets or bats (which provide bat guano). Some cave obligates get nourishment by preying on other cave animals or by scavenging, but ultimately all nutrients derive from the surface.

In the end, cave ecology is directly tied to surface ecology, and the health of the caves depends on what happens on the surface. Right now Central Texas cave ecosystems are threatened by human activity, such as by destruction of surface habitat, by losing permeable cover, by contamination from septic tanks, sewer leaks, and pesticides, as well as by overt vandalism of caves. We need to act conscientiously if we're to keep our Galapagos of the cave world.

NABA Butterfly Count 2005

compiled by Dan Hardy

Date: 25 June 2005

Observers: L. Bauer, S. Breed, J. Davis, D. Hardy, S. Hargis, C. Hazeltine, M. Holland, K. Kitzmiller, J. Kelly, J. Lapp, M. Lewis, M. Quinn, B. Reiner

Adults (53 species, 339 individuals):

Pipevine Swallowtail (14)
Polydamas Swallowtail (2)
Black Swallowtail (2)
Giant Swallowtail (8)
Spicebush Swallowtail (1)
Cloudless Sulpher (7)
Little Yellow (2)
Sleepy Orange (9)
Great Purple Hairstreak (1)
Juniper Hairstreak (1)
Gray Hairstreak (2)
Dusky-blue Groundstreak (17)
Reakirt's Blue (2)
Fatal Metalmark (26)
Rawson's Metalmark (2)
Gulf Fritillary (7)
Zebra Heliconian (30)
Bordered Patch (1)
Texan Crescent (55)
Vesta Crescent (4)
Phaon Crescent (11)
Pearl Crescent (4)
Question Mark (1)
American Lady (1)
Painted Lady (1)
Red Admiral (1)
Common Buckeye (6)
California Sister (2)
Tropical Leafwing (1)
Gemmed Satyr (1)
Carolina Satyr (3)
Monarch (1)
Silver-spotted Skipper (36)
White-striped Longtail (1)
Long-tailed Skipper (1)
Northern Cloudywing (2)
Mazans Scallopwing (1)
Horace's Duskywing (5)
Funereal Duskywing (1)
Common/White Checkered-Skipper (1)
Tropical Checkered-Skipper (1)
Laviana White-Skipper (3)
Julia's Skipper (1)
Clouded Skipper (12)
Least Skipper (1)
Southern Skipperling (3)
Fiery Skipper (16)
Southern Broken-Dash (9)
Sachem (2)
Zabulon Skipper (1)
Dun Skipper (11)
Dotted Roadside-Skipper (1)
Celia's Roadside-Skipper (4)

Immatures (6 species, 26 individuals):

Pipevine Swallowtail caterpillars (16)
Black Swallowtail caterpillars (3)
Spicebush Swallowtail caterpillars (4)
Zebra Swallowtail caterpillars (1)
Goatweek Leafwing caterpillars (1)
Laviana White-Skipper caterpillars (1)

NABA Butterfly Count 2006

Saturday June 24, 8:00 am

Zilker Botanical Garden Center

Meet at the Zilker Botanical Garden parking lot at 8:00 am.

We will count butterfly numbers and species for an entire day within a 15 mile diameter circle centered at Mount Bonnell. We will visit many of the best spots around town, such as the Zilker Butterfly Garden, Barton Creek Greenbelt, and St. Edward's Park (west of town). **Last year we found 53 species, a record high for our count (and second highest count for Texas in 2005)**. We will have lunch at Schlotsky's Deli, 218 S. Lamar around 1:30 pm, and then continue into the afternoon.

We always see a lot of butterflies as well as a few caterpillars and learn a lot about what's around. All levels of interest and skills are welcome.

Be prepared to take brief walks through brush. Wear long pants, hat, sunscreen and insect repellant. Bring water, and bring close focusing binoculars and butterfly nets (if you have them).

If it rains Saturday, we will re-schedule for the following day, Sunday, June 25.

For questions, contact Dan Hardy (656-5848 or dhh787@yahoo.com).

Entomological Calendar

Mike Quinn brings you a more extensive calendar of entomological events, focusing on events of possible interest to us bug-lovin' folks here in central Texas. For an even more complete listing, see the calendar on his web site at www.texasento.net/events.htm.

MAY

Mon 22 — **Austin Butterfly Forum Meeting** – Zilker Botanical Garden Center, 7 - 9pm

Rob Plowes will speak on "Butterfly wing patterns: More than just decoration." See the box at the front of this newsletter for more information.

JUNE

14 - 18 — **Lepidopterists' Society Meeting 2006** – Gainesville, Florida

This year's LepSoc meeting will be held at The McGuire Centers for Lepidoptera and Biodiversity (www.flmnh.ufl.edu/mcguire/), which has the world's second-largest Lepidoptera collection, second only to The Natural History Museum in London. See tinyurl.com/ko6qq for more information.

23 - 24 — **Mount Magazine International Butterfly Festival** – Paris, Arkansas

Mt. Magazine State Park (located in west-central AR), is hosting it's 10th annual International Butterfly Festival (www.butterflyfestival.com). Mt. Magazine is the highest point in AR at 2,750 ft. and is one of the best places to reliably see the Diana Fritillary. Contact the Paris Area Chamber of Commerce at (479) 963-2244 or parischamber@centurytel.net

Sat 24 — **Austin NABA Butterfly Count** – Zilker Botanical Garden Center, 8:00 am

Join us for our yearly butterfly count. Last year we found 52 species, a record high for the count and the second highest count in Texas for 2005. For more information, see the box found earlier in the newsletter.

Mon 26 — **Austin Butterfly Forum Meeting** – Zilker Botanical Garden Center, 7 - 9pm

Our own Dan Hardy will teach us to identify hairstreaks in his workshop titled, "Hairstreaks of the Austin area."

JULY

Sat 24 — **Austin Butterfly Forum Meeting** – Zilker Botanical Garden Center, 7 - 9pm

Club member Joe Lapp will conduct a hands-on spider identification workshop. Learn to identify some common families of spiders and get some practice with live spiders.

Austin Butterfly Forum, Inc.
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Austin, TX 78746

Austin Butterfly Forum Membership Form

Become a member or renew your membership.

Your membership helps support our club activities, but members also receive bimonthly **newsletters** with upcoming events and informative articles, **butterfly plants** that we often give away, and **discounts** on books, T-shirts and more.

Name:	**Daytime phone:**
Street:	**Evening phone:**
City: **State:** **Zip:**	**Email:**

Membership is $20 annually per household, due each January and prorated thereafter. Make check payable to the Austin Butterfly Forum and send to:

ABF c/o Doris Hill, 1605 Broadmoor Drive, Austin, TX 78723