CODE 0801

Palamedes Swallowtails in the Texas Hill Country

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I have been surveying butterflies at the Hamilton Pool Preserve near Austin for 3 years. There were no previous studies of butterflies at the preserve, although bird and plant lists had been compiled. Just an hour drive west of Austin, this 232 acre park protects a deep limestone canyon cut by Hamilton Creek and features a collapsed grotto pool which is a favorite local swimming hole. The creek is one of many spring-fed rivers that dissect the elevated limestone plateau that is the Texas Hill Country. Since there is a unique colony of Redbay (*Persea borbonia*) at Hamilton Pool, far west of their normal range, I speculated that Palamedes Swallowtails (*Papilio palamedes*)—which were not thought to occur in Central Texas, but which use Redbay as hostplant—might be present.

On my 17th visit, on September 25, 2001, I was thrilled to encounter a male and female Palamedes Swallowtail engaged in courtship. The swallowtails were subsequently found on ten visits in 2002, but only one adult was found in 2003. There were never more than one or two adults per visit. In 2002 live photographs were obtained (see pp. 5), egg-laying on Redbay was observed, and caterpillars were reared in captivity, and specimens were collected—the first for Travis County (Figures 1-4, pp. 5).

Prior to this study, there were no specimens of Palamedes Swallowtails from the Texas Hill Country, much less any suspicion of breeding. I know of four sight records from the Austin area (2), and the USGS map has three Central Texas counties highlighted (3). There are uncertainties about the numbers of swallowtails in this colony, especially after finding so few in 2003. The colony could be self-sustaining or could be replenished periodically by vagrants. The swallowtails are hard to spot as they fly rapidly through the Redbay, and during many months there are few suitable nectar plants nearby to concentrate the swallowtails.

The Redbay at Hamilton Pool and the few plants at nearby Westcave Preserve are the only known Redbay in the Texas Hill Country and are 150 miles west of the nearest plants on the coast. They grow on the canyon slopes and prefer the protected south side of the east-west oriented canyon. The plants are common and even locally abundant. In addition to mature trees, there are many seedling plants that form waist-high thickets in some areas.

The canyonland environment of the preserve, at an elevation of 690-930 feet, is quite different from the Redbay habitat of coastal and east Texas, which is either low sandy ridges or wet, low-lying woodland. The Redbay have been identified as *Persea borbonia* (1), but the taxonomy is under study. They are probably a relic population left from an earlier climate regime when the plant was more widespread. The Hill Country has many examples of plants separated from their main range by hundreds of miles, such as the Bigtooth Maples at Lost Maples State Park.

The Palamedes Swallowtail has interesting disjunctions in its range. One population occurs in the southeastern United States, enters eastern Texas, and extends southward along the coast to about Corpus Christi, a distribution that matches that of Redbay in Texas. Another population is found in the northeastern Sierra Madre Oriental of Mexico and is sometimes designated *P. p. leontis*. This second population is not well described; the hostplant in Mexico is unknown and there are no studies comparing the two populations. Hamilton Pool is 150 miles west of the main US population and 350 miles north of the Mexican population. As already noted, the canyon habitat of Hamilton Pool is different from eastern and coastal Texas. It brings to mind sites in Mexico, such as Parque Estanzuela, near Monterrey, where Palamedes Swallowtails are known to occur.

The distribution of Palamedes and Spicebush Swallowtails in Central Texas are comparable. I have seen both of these butterflies within minutes of each other at Hamilton Pool. Both depend on local colonies of their hostplants growing in sheltered Hill Country canyons. The range of the Spicebush Swallowtail "bulges" westward into Central Texas (4). Colonies of Spicebush (*Lindera benzoin*), although localized, are far more widespread in the Hill Country than Redbay and the Spicebush Swallowtail populations are stable.

It was exciting to find a large and flashy swallowtail unexpectedly breeding in the well-studied Austin area. The population numbers are quite low, but the hostplant is thriving and the site is protected. The isolated Redbay colony at Hamilton Pool Preserve should encourage us to look for and expect butterflies wherever their hostplant is present.

Acknowledgements

I wish to thank the Transportation and Natural Resources Department of Travis County for permission to conduct the census and to collect specimens, the Preserve's staff for help with the surveys, Chris Durden for advice and technical help, and Tom Wendt for help with the botany.

References:

1 Carr, W.R., Rare Plant Survey and General Plant Inventory of Hamilton Pool Preserve, Travis County, Texas. Summer, 1996. Travis County Transportation and Natural Resources Department.

2 Personal communications with Chris Durden, Mike Quinn and Chuck Sexton.

3 USGS map at ***www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/tx/710.htm***

4 USGS map at ***www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/tx/716.htm***



Cactus Moth...*continued from pp. 3*

In 1990, Habeck & Bennett produced a circular on *C. cactorum* with a larval key for Florida species on *Opuntia*. We provide a corrected, updated larval key below.

For in-depth information on *Cactoblastis cactorum*, please refer to the results of a previous meeting held in 2000 (Anon. 2000).

Acknowledgments

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A "tasso"-like Aberration of *Papilio torquatus*

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Papilio torquatus is a variable, wide-ranging species with many subspecies known to occur from Mexico to southern Brazil and northwest Argentina. It is quite common in collections and when dealers and collectors received large mixes of butterflies from the Tingo Maria area of Peru, *P. torquatus* would often turn up. A friend received one of these mixes in the early 1980's that contained 24 male *P. torquatus* collected in April 1978. All of them were normal except one, which he noticed had a strikingly different underside. It was subsequently sent to me.

Staudinger described *P. tasso* from Brazil in 1884 but there has been some confusion as to its taxonomic position since that time. Recent workers (Tyler, Brown & Wilson, 1994) suggest a possible hybrid origin between *P. himeros* and *P. torquatus*. Johnson & Matusik (1987) tend to agree with that position but also with the possibility that the known specimens are either aberrations or a valid species. Although the figured specimen (see pp. 5) appears to look very much like the type male of *P. tasso*, I believe it is nothing more than an aberration of *P. torquatus*, however, further work still needs to be done to determine the true status of *P. tasso*.

Literature cited

Johnson, K. and Matusik, D. (1987). The types and status of Papilio tasso Staudinger. J. Lepid. Soc. 41: 108-113.

Tyler, H.; Brown, Jr., K. S. and Wilson, K. (1994). Swallowtail Butterflies of the Americas: a study in biological dynamics, ecological diversity, biosystematics and conservation. Scientific Publ., Gainesville, FL, 376 pp.



Key to Florida Phycitine Larvae Associated with *Opuntia* spp.

1. Orangish-red with conspicuous dark spots forming transverse bands (Figs. 2-4) ..... *Cactoblastis cactorum*

1'. Dirty-white to bluish-purple not forming transverse bands 2

2. With small dark spots (older larvae turning purplish) (Fig. 6) ..... *Melitara prodenialis*

2'. Withoutspots 3

3. Dirty white; gregarious ..... *Rumatha glaucatella*

3'2. White to dark gray color; larvae solitary ..... *Ozamia lucidalis*

Note: The original key included Laetilia coccidovora *(J. H. Comstock). Larvae of* L. coccidovora *are often found feeding on scale insects, not on* Opuntia *plant pads.* L Laetilia coccidovora *larvae are much smaller, only 8-12 mm long, in comparison to 20-30 mm long for the species included in the key above. The wingspan of* L. coccidovora *adults is 10-18 mm and that of* C. cactorum *is 22-35 mm.*



Palamedes Swallowtails in the Texas Hill Country

Photo: Palamedes Swallowtail, *Papilio palamedes*, with Redbay (*Persea borbonia)* and Ashe Juniper (*Juniperus ashei*); Hamilton Pool Preserve; June 7, 2002; **1:** male dorsal. Hamilton Pool Preserve, Travis Co., Texas. August 4, 2002. **2:** male ventral, data as per 1. **3:** female, dorsal, Hamilton Pool Preserve, Travis Co., Texas. June 30, 2002. **4:** female, ventral, data as per 3.

Photos and Specimens, Dan H. Hardy. See his article on the next page.













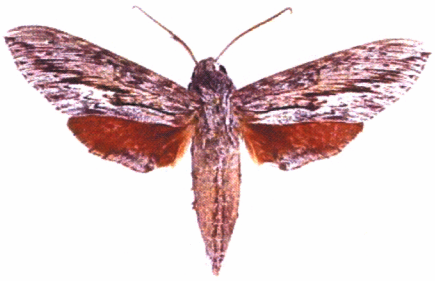
A "tasso"-like Aberration of *Papilio torquatus*?

This male specimen (dorsal, far left; ventral, left) appears to look very much like the type male of *Papilio tasso* but the author believes it is simply an aberration of *P. torquatus*. Photos by Rick Rozycki. See his article on pp. 7.



Unusual Fruit Feeding Behavior of Julias, *Dryas iulia* (F.)

Julias, *Dryas iulia* (F.), (left) show remarkable tenacity and persistence while feeding at fruit cluster of *Lantana camara* L. Photo by Gerald Einem. See his article on pp. 10.



Erinnyis yucatana (Druce), a New U.S. Record from Texas

Specimen (above) taken at light by Greg Muise at Concan, Uvalde Co., TX, on 2 March, 2002. Photo by Ed Knudson. See the article on pp. 11 for details.