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Extreme Southwest Utah Could See Iridescent Greenish-blue Flashes A Little Bit More Frequently

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Battus philenor (blue pipevine swallowtail) flies in the southern two-thirds of Arizona; in the Grand Canyon (especially at such places as Phantom Ranch 8/25 and Indian Gardens 12/38) and at its rims [(N) 23/75 and (S) 21/69]; in the low valleys of Clark Co., Nevada; and infrequently along the Meadow Valley Wash 7/23 which parallels the Utah/Nevada border in Lincoln Co., Nevada. Since this beautiful butterfly occasionally flies to the west, southwest, and south of Utah's southwest corner, one might expect it to turn up now and then in Utah's Mojave Desert physiographic subsection of the Basin and Range province on the lower southwest slopes of the Beaver Dam Mountains, or sporadically fly up the "Dixie Corridor" along the lower Virgin River Valley. Even though both of these Lower Sonoran life zone areas of Utah offer potentially suitable, "nearby" living conditions for *Bat. phi. philenor*, such movements have not often taken place. Or, more accurately, there has been only minimal proof that such sporadic, transient probing has occurred. Presently, there are only two reliable records of proof that *Bat. phi. philenor* has been taken in Utah [first established by Kilian Roever 2 May 1981, with a follow up record by seven year old (at the time) Scott W. Wardrop 30 June 1988. Both records



***Battus philenor* Blue Pipevine Swallowtail**

Photo courtesy of Randy L. Emmitt www.rlepphoto.com

were of males.]. There could be many reasons why *philenor* is not a habitual resident of Utah's Dixie. But I think there is basically only one, and that is a complete lack of its larval foodplants in the region.

The blue pipevine swallowtail absolutely requires Aristolochiaceae (pipevine family) plants for its larval foodplants, and there are no known occurrences of native pipevine in Utah. Cultivation of pipevines as ornamentals in Utah is practically nonexistent. Even in Arizona where

Bat. philenor is fairly prevalent, there is only one indigenous species of pipevine. (In Texas, there are several pipevine species.) Arizona's interesting plant is *Aristolochia watsonii* (indianroot pipevine), which has alternate leaves shaped like a slightly curved, long-pointed arrowhead, and has a thick root supposedly used by Indians and white settlers as a remedy for snake bites. This plant is the larval foodplant (LF) for *philenor* in the greater Southwest wherever they occur together.

Aristolochia californica (california pipevine/california dutchmans pipe) is the LF for *Bat. phi. hirsuta* in the great Central Valley of California, as proven by Emily C. Dial and myself in Placer Co., California June 1979. *Aristolochia macrophylla* (dutchmans pipevine) is often used as an introduced ornamental in areas where it does not occur naturally, and *philenor* takes advantage of this species and other pipevine introductions in some instances.

An interesting side note is the meaning of the generic plant name *Aristolochia*. It is Greek derived from: aristos-best + locheia-childbirth, named for its legendary effectiveness in aiding human childbirth. *Aristolochia* is one of ten genera of the mostly tropical Aristolochiaceae (pipevine/birthwort family) containing approximately 600 species in both the Eastern and Western hemispheres, nearly 500 of which are in *Aristolochia*. Aristolochiaceae is quite an isolated family of plants, not very closely related to any other family of dicots. Its nearest relatives are probably in the complex of orders Magnoliales and Ranunculales. A curious feature of Aristolochiaceae is that its floral parts are trimerous (occurring in threes or multiples of threes), which is a common feature of the class Monocotyledoneae (monocots) rather than the Dicotyledoneae (dicots) of which it is a part. Many bizarre or exotic species of this family are cultivated as greenhouse curiosities. The showy tropical *Ari. grandiflora* (pelicanflower pipevine), for example, has flowers with diameters of 51 cm/20 in which have a tail-like appendage 89 cm/ 35 in long!

I have long conceived of a plan to encourage and aid people in Utah's Dixie to cultivate various species of

Aristolochia in their gardens. (I once gathered seeds of a species of *Aristolochia* from Guadalupe Co., Texas for the purpose of transplanting them into Utah.) The hope would be that once enough growing pipevine plants are scattered around in such potential sites as Leeds, La Verkin, Hurricane, Washington, Gunlock, Santa Clara, St George 8/27, Bloomington, and especially such places as the Lytle Ranch Nature Preserve (along the Beaver Dam Wash, Washington Co., Utah) and at the old Beaver Dam Lodge area south of the Utah/Arizona line and Littlefield, Mohave Co., Arizona, that *Battus philenor* would be able to maintain viable populations of itself in Utah. Local garden clubs could help in the establishment of the plants. Hopefully, these adventive pipevines would be able to survive in the more mild "Dixie" winters. It would be necessary, of course, to caution participating gardeners against spraying the plants or squashing the black and red larvae (which some people incorrectly and annoyingly call "worms") with their prominent 9 mm pair of anterior filaments. For promoting repeated life cycles of this very beautiful greenish-blue, tailed pipevine butterfly would be one of the primary reasons for growing the pipevines in the first place.

All of the three *Aristolochia* species mentioned - *watsonii*, *californica* and *macrophylla* would be suitable for transplant into southwestern Utah. With *Ari. californica*, however, care must be taken not to bring in the early stages of *Bat. phi. hirsuta* when *Bat. phi. philenor* would be the subspecies which might take hold naturally. This brings up the important issue of complete biological naturalism vs. biological intervention by human beings. Nearly everyone agrees that

there have been numerous cases of biological disasters which have occurred by man's intervention, whether unintended or purposeful. The direct cause of some of these biological disasters is the introduction of new species of viruses, bacteria, plants and animals into new regions or areas where they had not existed previously.

My thinking in this situation is this: I cannot see any negative biological effects from the introduction of *Aristolochia watsonii* and *macrophylla* plants into southwest Utah and the extreme northwest corner of Arizona. But, that is usually where all the serious trouble comes from in those cases which go wrong. The full biological effects of new introductions are often not recognized at the outset. Therefore, pipevine-plant introductions may not be so completely innocuous as I believe they are. Nevertheless, I am in favor of the purposeful introduction of pipevines into southwest Utah. Beyond that, I would not personally bring in ova, larvae, or gravid females, but I would be most pleased if these wonderful butterflies were able to make it on their own. It would be greatly satisfying to more frequently see their iridescent greenish-blue flashes throughout the southwestern corner of Utah.

Definitions:

indigenous - [L. indigena-native] native species originating, developing, or living naturally in a particular region or environment. (Indigenous is nearly synonymous with endemic derived from the Greek word endēmia.)

adventive - nonnative, inadvertent or purposeful introductions of species from other places which have not become fully naturalized.