

FACTORS AFFECTING THE OCCURRENCE OF
MELANIS PIXE (RIODINIDAE) IN EXTREME SOUTHERN TEXAS

The lower Rio Grande Valley of Texas has a varied lepidopteran fauna including many neotropical forms that reach their northernmost points in this area. One of the least known of these is *Melanis* (= *Lemnox* = *Lymnas*) *pixe pixe* (Boisduval), Riodinidae. This medium-size butterfly (wingspan about 3.5 cm) has a velvet-black ground color with an apical yellow spot on each forewing. A single basal spot on each wing and six marginal spots on the hindwings are an intense scarlet color.

This species is neither illustrated nor mentioned in any of the standard American butterfly guides, i.e., Holland, Klots, Ehrlich & Ehrlich, or dos Passos. An illustration of *M. gynaecaeas* Godm. & Salv., which may be an extreme version of *M. pixe*, may be found in *Biologia-Centrali-Americana* (Godman & Salvin, 1882: v. 38, pl. 110, fig. 3). Despite previous collections of this *M. pixe* in the Brownsville (Cameron Co., Texas) area (summarized below), the present report is believed to be the first published note on U.S. records of this species. The northernmost published record of this butterfly that I could find was in the state of Veracruz (Hoffman, 1940, Am. Inst. Biol. Mex. 11(2): 639-739), at least 420 km south of Brownsville. L. E. Gilbert (pers. comm.) has observed *pixe* at Cd. Mante, Tamaulipas, 380 km south of Brownsville.

In June, July and August of 1961, I observed this species in Brownsville. Larvae were found and reared to imago feeding on an introduced ornamental, guanachil, *Pithecellobium dulce* (Roxb.) Benth. This leguminous shrub is native to Mexico and through Central America to Colombia and Venezuela (Little & Wadsworth, 1964, Common Trees of Puerto Rico and the Virgin Islands, Agric. Handbook 249, U.S.D.A.). Adult *M. pixe* are very poor fliers and are often seen hovering around the host plant. Their flight pattern is suggestive of many of the warning-colored day-flying moths.

Melanis pixe was first reported from the U.S. on 21 March 1956 by O. O. Stout in Brownsville. (This and the following records are from the files of R. O. Kendall.) Field collections of *M. pixe* occurred from 1957-1961; none were subsequently reported until the late 1960's, when C. A. Kendall sighted one. All U.S. records to date are from Brownsville. I saw no further specimens after the superabundance in 1961.

Possibly, the absence of *M. pixe* in 1962 and subsequent years resulted from the effects of the catastrophic freeze of 9-12 January 1962. Brownsville reported a low temperature of 19°F (12 January), the coldest since 1899. Massive damage to citrus groves and substantial damage to native vegetation resulted. This freeze undoubtedly was the most destructive to native wildlife and vegetation recorded (Heitzman, 1962, J. Lepid. Soc. 16: 249-150; James, 1963, Southwest. Nat. 8: 45-46.).

The first reported occurrence of *M. pixe* in the Brownsville area corresponded with one of the warmest periods on record in the same area. No severe freezes were recorded from 1952-1961 (lowest temperature 29°F); no freezing temperatures were recorded from 1954-1958, inclusive. The warm years of the mid-1960's again permitted the occurrence of *M. pixe* in the lower Rio Grande Valley.

Many butterflies of northern Mexico are found in southern Texas, but only under certain environmental conditions (Gilbert, 1969, J. Lepid. Soc. 23: 177-185). Populations of *M. pixe* may be completely eliminated by these severe freezes and must disperse from Mexico; on the other hand, populations may simply be so low in numbers and local in nature that detection is unlikely.

A puzzle yet to be solved is determination of the native larval foodplant of *M. pixe*. Adults flying around *Pithecellobium dulce* showed no attraction behavior toward Texas ebony, *P. flexicaule* (Benth.) Coult., a common tree in southern Texas; *M. pixe* larvae have never been found on this species. A specimen of Texas

ebony was less than 10 m from the smaller *P. dulce* that supported *M. pixe* larvae. *Pithecellobium dulce* has been reported common around Cd. Victoria, Tamaulipas (Robert Runyon, botanical voucher sheet 777, Univ. Texas at Austin Herbarium), 320 km south of Brownsville. There possibly has never been a native foodplant for *M. pixe* in the Brownsville area. Thus, *M. pixe* may have occurred in southern Texas only since the introduction of guamuchil.

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RAYMOND W. NECK, *Texas Parks and Wildlife Department, John H. Reagan Building, Austin, Texas 78701.*

NEW FOODPLANT AND OVIPOSITION RECORDS FOR *BATTUS PHILENOR* (PAPILIONIDAE)

Battus philenor (L.) feeds on several species in the plant family Aristolochiaceae. In the central and southern Appalachian regions of the eastern U.S.A., *Aristolochia serpentaria* L. is a predominant native foodplant species (Scudder, 1889, The butterflies of the eastern U.S. and Canada, 2: 1219-1364; Holland, 1898, The butterfly book, Doubleday, Doran & Co. New York; Forbes, 1960, Cornell Univ. Agr. Expt. Sta. Memoir #371). The northern range limits of *Battus philenor* probably are extended by feeding upon the introduced ornamental *Aristolochia siphon* L'Her or *Asarum* spp. In Texas, Kendall (1964, J. Lepid. Soc. 18: 129-157, and pers. comm.) reports only *Aristolochia longiflora* (Engelm. & Gray). Here we report feeding and oviposition by *B. philenor* on *Aristolochia serpentaria* and *A. reticulata* (Nutt.) in eastern Texas. These observations apparently represent new foodplant records for the state of Texas and the U.S.A., respectively.

During a collecting trip to the "Big Thicket" region of eastern Texas in late March, 1972, eggs and larvae of first through third instars of the pipevine swallowtail, *Battus philenor*, were found upon the small perennial *Aristolochia reticulata* in a longleaf pine forest near Camp Waluta, approximately 6 mi. NW of Silsbee between routes 92 and 69 in Hardin County. In addition, several females were seen ovipositing on these plants. Another trip during the following spring to the same area yielded similar observations. From 8 April 1973 through 13 April 1973, eggs, larvae of various instars and ovipositing females were abundant upon the *A. reticulata* (Fig. 1). Eggs were laid most frequently in groups of two, three or four per plant, though the number laid by an individual female on any one occasion ranged from one to seven per plant.

While following one particular female engaged in the characteristic 'ovipositional searching' flight between 12:25 and 13:00 hours on 12 April 1973, oviposition was observed upon *Aristolochia serpentaria*. Although *A. reticulata* plants were more abundant, none were selected by this female for oviposition, or even approached. Three *A. serpentaria* plants were supplied with one, three and two eggs respectively.

Although *A. serpentaria* is not apparently a widespread hostplant for *Battus philenor* in Texas, it is more common in other states to the northeast. *Aristolochia reticulata*, however, has not to our knowledge ever been reported as a foodplant of *B. philenor*. The explanation for the intensive use of *A. reticulata* in the Waluta site and the absence of records elsewhere probably stems from the fact that *A. reticulata* has a relatively restricted range. It is found in the humus of sandy soils of pine-hardwoods or pine savannahs only in eastern Texas, southwestern Arkansas