

LARVAL FOODPLANTS, SPATIAL AND TEMPORAL  
DISTRIBUTION FOR FIVE SKIPPERS (HESPERIIDAE)  
FROM TEXAS<sup>1</sup>

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AND

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Although fairly common at times, *Decinea percossius* (Godman), *Chiomara asychis georgina* (Reakirt), *Timochares ruptifasciatus* (Plötz), *Xenophanes trixus* (Stoll) and *Cabares potrillo* (Lucas) are among the most uncommon skippers in collections from Texas. Local larval foodplants in the Gramineae, Malpighiaceae, Malvaceae, and Verbenaceae are given for the first time. Records of specimens collected by others, unless otherwise stated, are from personal correspondence or communication. Biological arrangement follows dos Passos (1964), and botanical arrangement, Gould (1969).

*Decinea percossius* (Godman) 1900

First recorded from the United States by Freeman (1948) who collected a ♂ at Brownsville, Cameron Co., Texas, 28 Nov. 47. The following year he and Otto Buchholz collected 50 examples (42 ♂, 8 ♀) between Brownsville and Southmost, 4 & 7 April 48. So far as we can determine, it was not collected again in Texas until 1969.

Based on available data, this species appears to be only a periodic resident of extreme south Texas. In nature, it most likely feeds on broad-bladed grasses. It may have a larval or pupal diapause, or perhaps only a retarded immature development during winter months. Three broods are indicated. First adults emerge in late March and early April. The 2nd brood appears from late June to early July, and the 3rd from mid-October to late November. Peak emergences are in early April, late June, and early November.

**Rearing records.** At a spot near Southmost, SE of Brownsville, Rickard collected 1 ♀, 8 Nov. 69. The following day at the same spot, he collected 1 ♂, 1 ♀, and Kendall took 3 ♀. On 10 Nov. at this location Kendall collected 4 more

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♀, one of which was demonstrating oviposition behavior, and it was kept alive for possible egg production in the lab. Fifty-three eggs were deposited on *Stenotaphrum secundatum* (Walt.) Kuntze, GRAMINEAE: 10 Nov. (8), 14 Nov. (13), 15 Nov. (10), 16 Nov. (3), and 17 Nov. (19). Some eggs were preserved, and the remaining eggs started hatching the morning of 21 Nov. A few hatched each morning thereafter for about 10 days. First instar larvae readily ate *S. secundatum*. Most of the larvae died, however, in 2nd instar and the remainder in the 3rd instar. The exact cause of death was undetermined, but climatic conditions were suspect. Humidity in the lower Rio Grande Valley is very high, especially at night. In the rearing facility at San Antonio it was relatively low.

At the same Southmost location on 4 April 70, Rickard collected 7 additional specimens (5 ♂, 2 ♀). From one confined female, about 20 eggs were obtained on ryegrass, *Lolium perenne* L., GRAMINEAE. After one day the ♀ was placed in a killing jar and kept as a cabinet specimen. Eggs hatched 15–16 April and readily ate *L. perenne*. On 25 April 70 Rickard gave Kendall two of these larvae, one of which was in process of molting. Because the grass blade had dried around the larva, some difficulty was experienced in completing the molt; it died later and was preserved. The remaining larva, 2nd instar when received, ate *L. perenne*, *S. secundatum* and *Cynodon dactylon* (L.) Pers. It molted on 8, 15 & 25 May and pupated 16 June. A ♀ emerged about 0645 CDT 26 June 70. It was interesting to note that a formal tent or shelter was not constructed by the larva until it was fully mature. At this time it remained head down in the shelter pending final defecation after which it pupated head up. It was also noted that feeding was largely at night.

The remaining larvae kept by Rickard were switched to Johnsongrass, *Sorghum halepense* (L.) Pers., GRAMINEAE, and all died during pupation, probably from malnutrition. These were reared in Houston, Texas where the relative humidity is comparable to that of the lower Rio Grande Valley area.

**Other Texas records.** CAMERON Co.: Brownsville and vicinity: J. R. Heitzman found it fairly common during the period 19 June–1 July 69; Joseph F. Doyle III, collected 1 ♂, 18 June 70; Rickard collected 3 ♂, 1 ♀, 21 March and 4 ♂, 5 April 70; Kendall saw one 22 Oct. 72. HIDALGO Co.: Relampago, Rickard collected 2 ♂, 18 Oct., 2 ♂, 1 ♀, 19 Oct. and 1 ♂, 30 Oct. 71.

### *Chiomara asychis georgina* (Reakirt) 1868

First recorded for the United States by Skinner (1901); collected by Irvin Runyeon from southern California to the Arizona border. It is well established in Cameron and Hidalgo counties of southern Texas and ranges up the coast to Harris Co. and inward to Bexar Co. Three and possibly 4 broods are indicated. There appears to be an immature semi-diapaused during January and February even though adults have been collected in each month of the year except February; the known larval foodplant is deciduous.

**Rearing records.** While collecting in Bentsen-Rio Grande Valley State Park (B-RGVSP), Hidalgo Co., 29 Aug. 69, Rickard observed a female ovipositing on the foliage of *Malpighia glabra* L., MALPIGHIACEAE. Examination of the plant disclosed 2 larvae in leaf shelters, one was lost, the other produced a ♀ on 25 Sept. 69. Kendall collected a larva feeding on this plant in Santa Ana National Wildlife Refuge (SANWR), Hidalgo Co., 13 Nov. 71; it pupated 6 Dec. but died before emergence. On 11 Sept. 72 at McAllen, he collected another larva; it pupated 20

Sept. and a ♀ emerged 29 Sept. 72. The larva of this species may feed on other Malpighiaceae such as *Thryallis angustifolia* (Benth.) Kuntze found in Bexar Co., and *Janusia gracilis* Gray found in far western Texas, New Mexico and Arizona over which area the insect ranges.

**Other Texas records.** BEXAR CO.: Roy W. Quillin, Cibolo River in NE Bexar Co., 1 ♂, 21 Aug. 60; at his home in San Antonio, 1 ♂, 19 Aug. 65. CAMERON CO.: H. A. Freeman (1951), Brownsville, June and Aug. Roy O. & C. A. Kendall, Brownsville, 1 ♂, 3 April 57; 1 ♀, 4 Dec. 64; 1 ♂, 29 Oct. 65; 1 ♀, 25 Nov. 66; Harlingen, 5 ♂, 2 ♀, 20 Oct. 65. J. W. Tilden, Brownsville and vicinity, 4, 17-19 Oct. 63; 4 mi. W of Boca Chica, 2 ♂, 26 Oct. 63; nr. Brownsville, 1 ♂, 1 ♀, 13 Nov. 63. Joseph F. Doyle III, Brownsville, 1 ♀, 21 Dec. 67. M. A. Rickard, Brownsville, 2 ♂, 2 Sept. 67; several on 17, 18 and 31 Aug. 69; 1 ♂, 7 Sept. 69; 2 ♀, 18 Oct. 69; 2 ♀, 9 Nov. 69; 1 ♀, 4 April 70; 1 ♂, 17 Aug. 70. HARRIS CO.: John B. Vernon, Houston, 1 ♂, 23 Oct. 71. HIDALGO CO.: H. A. Freeman (1951), Pharr, March-June and Aug.-Dec. Roy O. & C. A. Kendall, B-RGVSP, 4 ♂, 1 ♀, 22 Nov. 62; Madero, 1 ♀, 11 Jan. 72; SANWR, 1 ♂, 14 Jan. 72; Mission, 1 ♂, 12 Sept. 72; McAllen, 1 ♂, 22 Oct. 72. J. W. Tilden, B-RGVSP, 1 ♂, 10 Nov. 63; SANWR, 1 ♂, 11 Nov. 63. Fay H. Karpuleon, nr. McAllen, 1 ♂, ? Dec. 65. J. R. Heitzman, SANWR, several, 21 & 24 June 66. M. A. Rickard, SANWR, 1 ♂, 1 ♀, 31 Aug. 67; 1 ♂, 5 Oct. 68; 1 ♀, 6 Oct. 68; 2 ♀, 4 July 69; 1 ♂, 26 July 69; 1 ♂, 3 April 70; 2 ♂, 17 May 70; 2 ♂, 1 ♀, 18 Aug. 70; 1 ♂, 12 Sept. 70; 1 ♀, 15 Aug. 71; 1 ♂, 29 Oct. 71; 1 ♂, 31 Oct. 71; B-RGVSP, several, 15, 16, 17, 24, 25, 29 & 30 Aug. 69 and 6 Sept. 69; 1 ♂, 14 Aug. 71; Madero, several, 25 Oct. 69; 1 ♀, 9 Nov. 69. KLEBERG CO.: Roy O. & C. A. Kendall, nr. Kingsville, 1 ♂, 23 Aug. 64. LIVE OAK CO.: E. M. & S.F. Perkins, nr. Lake Corpus Christi State Park (LCCSP), 1 ♂, 10 Nov. 62. M. A. Rickard, hwy. 9 nr. Mathis, 1 ♀, 9 March 69. SAN PATRICIO CO.: J. W. Tilden (1974), Welder Wildlife Refuge, 1 ♂, 13 Oct. 63 (in ROK coll.); 1 ♂, 2 Nov. 63. J. R. Heitzman, LCCSP, one or more, 16 June 68.

#### *Timochares ruptifasciatus* (Plötz) 1884

Recorded from the United States for the 1st time by Skinner (1901); collected by Irvin Runyeon from southern California to the Arizona border. Its distribution in Texas seems to be restricted to Cameron and Hidalgo counties where it is well established. It has been collected each month except December and only a few times in January and February. Rearing has disclosed a larval diapause. The deciduous local larval foodplant *Malpighia glabra* L., MALPIGHIACEAE, is grown as an ornamental in extreme southern Texas where its fruits are prized for making jellies. This explains why Freeman (1951) found the skipper mostly in city flower gardens. Comstock (1953) observed a ♀ oviposit on a malpighiaceae vine in Mexico. He reared it through, described and illustrated the egg, last instar larva and pupa. He was unable to identify the larval foodplant except as to family.

**Rearing records.** At Brownsville, 10 Nov. 69, Kendall found a single 1st instar larva on juvenile leaves of *Malpighia glabra*. It had made a rudimentary shelter by cutting and folding over a portion of the tender new leaf. In the lab the larva continued to feed on this plant and pupated 19 Dec. 69; a ♀ emerged 11 Jan. 70. Rearing was conducted at laboratory temperatures ranging from 50°-75° F, a comparable temperature range for outdoor temperatures in Brownsville

at that time of year. Humidity, however, was not comparable. Two more larvae were collected on this plant 15 Oct. 71 in SANWR. These were reared in a semi-outdoor environment. They pupated on 7 and 12 Jan. 72, and 2 ♀ emerged, one on 29 Jan., the other 7 Feb. 72. Kendall revisited SANWR 12 Jan. 72 and found 1 last instar larva; it was preserved. On 8 Sept. 72 he collected a ♀ at Mission, Hidalgo Co., confined it with *M. glabra* and obtained 7 eggs, 4 of which were preserved. The remaining eggs hatched 12 Sept. 72. Larvae were placed on a living plant in the lab garden. Only 1 larva could be found when examined 23 Oct. 72; it was brought into the lab where it died 22 Nov. 72. Again 20 Nov. 73, 3 mi. E of Harlingen, Cameron Co., Kendall collected 2 larvae eating *M. glabra*. These were sleeved on a living plant in the lab garden on 1 Dec. 73. Upon returning from an extended field trip 5 March 74, examination showed one larva had died, the other had just pupated; a ♂ emerged 18 March 74. Rickard collected a pupa 22 March 70 on *M. glabra* in B-RGVSP; a ♀ emerged 30 March 70.

**Other Texas records.** CAMERON Co.: H. A. Freeman (1951), Brownsville, 1 ♂, 1 ♀, 29 Aug. 44. J. W. Tilden (1974), Brownsville, 1 ♂, 19 Oct. 72. Rickard, Brownsville, 2 ♂, 14 Aug. 69; 1 ♂, 18 Oct. 69; 1 ♀, 19 Oct. 69; 1 ♂, 21 March 70; 1 ♂, 23 March 70; 1 ♂, 4 April 70; 2 ♀, 5 April 70; 1 ♀, 17 Aug. 70; 1 ♀, 19 Oct. 71. Roy O. & C. A. Kendall, Brownsville, 1 ♂, 19 Oct. 72; 1 ♀, 22 Oct. 72. HIDALGO Co.: H. A. Freeman (1951), Pharr, 1 ♀, 30 Aug. 44; 3 ♂, 21 Oct. 44; 1 ♀, 25 Aug. 46. Rickard, B-RGVSP, 1 ♀, 24 Aug. 69; 1 ♂, 6 Sept. 69; Madero, 1 ♂, 19 Oct. 69; SANWR, 1 ♀, 17 May 70; 1 ♂, 15 Aug. 71. W. W. McGuire, Mission, several, 3 & 4 Sept. 72. Roy O. & C. A. Kendall, Mission, 6 ♂, 2 ♀, 9 Sept. 72; 4 ♂, 1 ♀, 10 Sept. 72; 6 ♂, 1 ♀, 11 Sept. 72; 3 ♂, 12 Sept. 72.

### *Xenophanes trixus* (Stoll) 1784

Barnes & McDunnough (1913) published the 1st record for the United States; 2 ♂, 2 ♀, May and June from Brownsville, Texas; year and collector not given. Freeman (1951) gives an uncited Skinner record for July in Brownsville. So far as we can determine it was not collected again in Texas until 1968 which tends to indicate a periodic residency in the state. Local collection data indicates 3 and possibly 4 broods. Larvae probably feed through the winter months when temperatures are mild; a local freeze may destroy the temporary population.

**Rearing records.** Near Southmost, SE of Brownsville, Kendall observed a ♀ demonstrating oviposition behavior around *Malvaviscus drummondii* Torr., MALVACEAE, 9 Nov. 69. This specimen avoided capture but another ♀ was taken and kept alive for egg production. Confined with *M. drummondii* twigs it deposited 30 eggs the following day and died 11 Nov. Young larvae soon ate holes through the micropile but died before escaping from the egg shell. Also on 9 Nov., 1 3rd instar larva was found hiding in a very rudimentary shelter on *M. drummondii*; it continued to feed sparingly in the lab until 24 Jan. 70 when illness was obvious; it died 26 Jan. and was preserved.

Unaware of Kendall's findings, Rickard observed and captured, 28 Feb. 70, a ♀ ovipositing on juvenile leaves of *M. drummondii* at the same Southmost spot. He also found one late instar larva on the plant in a poorly constructed leaf nest, same as Kendall had observed. This larva molted 2 March and pupated 12 March. An adult emerged 30 March but escaped in his home and was never found.

Rickard gave the live ♀ and egg collected 28 Feb. to Kendall who obtained

additional eggs: 1 March (27), 3 March (5), 4 March (1), 5 March (25). The ♀ was killed 8 March and kept as a cabinet specimen. Eggs were placed in an unheated room. By 22 March the embryo had completely developed and some larvae had eaten through the micropile, but all died before completing the hatching process. In a separate effort, 21 March 70, Rickard experienced the same disappointment. Low humidity is now suspect as the cause of death.

**Other Texas records.** CAMERON Co.: J. R. Heitzman, nr. Brownsville, 2 ♂, 21 June 69; 1 ♂, 24 June 69; 1 ♂, 25 June 69; 1 ♂, 1 ♀, 26 June 69. Roy O. & C. A. Kendall, Brownsville, 1 ♂, 7 Nov. 69; 3 ♂, 8 Nov. 69; 1 ♀, 10 Nov. 69; nr. Southmost, 17 ♂, 2 ♀, 9 Nov. 69; 13 ♂, 3 ♀, 10 Nov. 69. M. A. & S. Rickard, Brownsville & vicinity, 1969: 1 ♂, 2 ♀, 27 July; 1 ♂, 17 Aug.; 1 ♂, 18 Aug.; 1 ♂, 1 ♀, 31 Aug.; 2 ♂, 7 Sept.; 10 ♂, 4 ♀, 18 Oct.; 2 ♂, 1 ♀, 19 Oct.; 4 ♂, 5 ♀, 25 Oct.; 3 ♂, 26 Oct.; 9 ♂, 8 ♀, 8 Nov.; 2 ♂, 1 ♀, 9 Nov.; 2 ♂, 13 Dec. 1970: 4 ♂, 2 ♀, 28 Feb.; 4 ♂, 4 ♀, 21 March; 2 ♂, 2 ♀, 4 April; 1 ♀, 5 April; 5 ♂, 8 ♀, 24 May; 1 ♂, 17 Aug.; 1 ♂, 11 Sept. 1971: 2 ♂, 2 ♀, 19 May; 5 ♂, 20 May; 3 ♂, 6 July; common on 21 Aug., 18 and 19 Oct.; 2 ♂, 30 Oct.

### *Cabares potrillo* (Lucas) 1857

First recorded for Texas and the United States by Weeks (1904); Brownsville, Texas, summer 1903, *leg.* [Wm. H.] Doll. This species is generally restricted to the lower Rio Grande Valley in Texas. It seems to be best established in Hidalgo Co. where its deciduous larval foodplant, *Priva lappulacea* (L.) Perse, VERBENACEAE, is most abundant. There appear to be 3 full broods with considerable overlapping in September, October and November. Based on limited rearing, it would seem the larvae feed through the winter months with growth and development greatly retarded. It has been collected each month except February and July.

In Mexico, nr. Cd. Mante, Tamaulipas, Kendall observed several ♀ ovipositing on this same plant 20 Jan. 74. Examination disclosed first instar larvae on several small plants at that time. It will be noted that the time frames of these 2 locations are comparable even though one is neotropical, giving stability to residency of the species in Texas.

**Rearing records.** Kendall collected a ♀, 13 Oct. 68, at SANWR and kept it alive for eggs. Earlier, Rickard had informed Kendall of seeing a ♀ oviposit on an unknown plant at this location. Based on his description, it was easy to locate the larval foodplant, *P. lappulacea* (det., Dr. Marshall C. Johnston, University of Texas, Austin). The ♀ deposited eggs on this plant on 14, 15 & 19 Oct. They were not inventoried but were estimated to be about 25, some of which were preserved. Hatching started 17 Oct. Larvae were placed on a protected potted plant outdoors. Later, it was discovered a moth larva had eaten most of the foliage. Only 2 *Cabares potrillo* larvae could be found 2 Nov.; they were glossy black and quite small; one soon died, the other pupated 25 Nov. and a ♀ emerged 27 Dec. 68.

A return visit to SANWR 9 Nov. 68 produced 6 larvae on this plant. Larval shelters are constructed in such a way that they are very difficult to find and recognize. Insufficient foodplant was brought back to the lab and it became necessary to preserve 1 larva. The others pupated 25 Nov. (2), 26 Nov. (1), 1 Dec.

(1), and 3 Dec. (1); the last one was injured and was preserved. Adults emerged: 1 ♂, 30 Dec. 68; 2 ♀, 7 Jan. 69; 1 ♂, 10 Jan. 69.

**Other Texas records.** BEXAR CO.: Roy O. & C. A. Kendall, San Antonio, 1 ♂, 4 April 59. CAMERON CO.: Roy O. & C. A. Kendall, 10 mi. SE of Brownsville, 1 ♂, 1 April 57; Santa Maria, 1 ♂, 14 Nov. 71. Tilden (1974), Brownsville, 1 ♀, 30 Oct. 63; Santa Maria, 1 ♂, 18 Oct. 72 (doubtless there are other county records unknown to us at this time). HIDALGO CO.: Freeman (1951) found it well established at Pharr and vicinity from 1946–1959; specimens were taken in Mar., June, Oct., and Nov. Joseph F. Doyle III, SANWR, 1 ♂, 21 Sept. 68; 3 ♂, 19 Oct. 68; 1 ♂, 1 ♀, 24 Nov. 68. J. R. Heitzman, SANWR, 1 ♀, 21 June 66; 1 ♂, 24 June 66; several on 22, 24 & 25 June 68; B-RGVSP, several, 25 & 28 June 68. Roy O. & C. A. Kendall, SANWR, 1 ♂ 22 June 68; 3 ♂, 1 ♀, 21 Oct. 68; 1 ♂, 13 Oct. 68; 2 ♂, 9 Nov. 68; 1 ♀, 11 Nov. 68; Mission, 1 ♂, 10 Oct. 72. M. A. & S. Rickard, 1968: 2 ♂, 2 ♀, 5 Aug., 1 ♂, 6 Aug.; 2 ♂, 21 Aug.; 1 ♂, 7 Sept.; 1 ♂, 1 ♀, 21 Sept.; 2 ♂, 1 ♀, 5 Oct.; 2 ♀, 6 Oct.; 1 ♂, 1 ♀, 12 Oct.; 1 ♂, 19 Oct.; 1 ♂, 1 ♀, 9 Nov.; 1 ♂, 10 Nov.; 1 ♂, 16 Nov.; 2 ♂, 24 Nov.; 1970: 1 ♀, 19 March; 1 ♂, 22 March; 1 ♂, 1 ♀, 17 May; 1 ♂, 29 Oct. 71.

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