

HAMADRYAS IN THE UNITED STATES (NYMPHALIDAE)

DALE W. JENKINS¹

3028 Tanglewood Drive, Sarasota, Florida 33579

ABSTRACT. Seven species of *Hamadryas* have been collected in the United States. Species included in a recent checklist are: *H. amphinome mexicana* (Lucas), and *H. feronia farinulenta* (Fruhstorfer). *H. februa gudula* (Fruhstorfer) should be changed to *H. februa ferentina* (Godart). Additions to this list for the United States are: *H. amphichloe diasia* (Fruhstorfer), *H. guatemalena marmorice* (Fruhstorfer), *H. atlantis lelaps* (Godman & Salvin), and *H. ipthime joannae* Jenkins. Species unsubstantiated are: *H. fornax fornacalia* (Fruhstorfer) and *H. ferox* (Staudinger) (correct name is *H. amphichloe ferox* (Staudinger), and they should probably be deleted from the previous list. *H. guatemalena* (Godman and Salvin, 1883) (*nec.* Bates) is based on misidentifications of *H. feronia* in Texas.

The neotropical genus *Hamadryas* known for many years as *Ageronia* is a taxonomically confused genus of butterflies that has been in great need of revision. A critical revision of the genus has been completed (Jenkins, 1983) so that it is now possible to accurately identify the *Hamadryas* of the United States. This revision is based on examination of over 9000 specimens including 53 types in 30 major museums and collections, and on collecting and field studies by the author in 20 countries. Of the 100 taxa named, only 20 species and 21 subspecies are recognized. Keys to male and female adults, male genitalia, and descriptions and distributions are included in the above mentioned revision.

Hamadryas spp. have been difficult to determine because needed identification characters and keys have not been published previously, there is much confusion due to a plethora of synonyms created by Fruhstorfer, Bryk and others, and misidentifications of figures exist in many books. Numerous figures in Fruhstorfer in Seitz (1916) are erroneous. Klotz (1951, pl. 18) and Howe (1975, pl. 15) both identify figures of *H. februa ferentina* as *H. feronia*. In the recent book "Audubon Society Field Guide to North American Butterflies" by Pyle (1981) all *Hamadryas* pictures are misidentified. Picture 758, "white skirted calico," is identified as *Hamadryas feronia*, but it is actually *H. februa ferentina*, the most frequently collected species of *Hamadryas* in the United States. The common name designated for *H. feronia* is unfortunate since *H. feronia farinulenta* from Texas and Mexico has dark buff to light ochre ventral hind wings. Picture 759, "yellow-skirted calico," misidentified as *Hamadryas fornax* is actually *H. guatemalena marmorice* (taken in Mexico). I have found no valid

¹ Research Associate, Allyn Museum of Entomology, Sarasota, Florida.

or confirmed records of *H. fornax* in the United States. The common name "yellow-skirted calico" is not descriptive since the ventral hind wings of *H. fornax* are dark mustard to orange in color. *Hamadryas* are often known as "crackers" because of the crackling or clicking noise they make in flight. Some species are called "calicoes" because of the complex mosaic pattern on the wings that provides camouflage when they alight with wings outspread on tree trunks.

All available specimens of *Hamadryas* collected or purported to have been collected in the United States have been critically examined and determined.

A list of valid collection records for the United States is presented which includes seven species, four of which are new for the United States and not reported in Miller and Brown (1981), plus nomenclatorial changes. Three species previously reported by error for the United States have been based on misidentifications.

The following nomenclature follows Jenkins (1983).

A. Valid Records for the United States

1. *Hamadryas amphinome mexicana* (Lucas, 1853)

Specimens identified: (photograph) Texas, Hidalgo Co., Bentsen-Rio Grande Valley State Park. 1 ♂ (fresh), 3 Sept. 1972, Leg. W. W. McGuire (McGuire & Rickard, 1974). This specimen in the McGuire collection was photographed and published by Kendall (1974) showing dorsal and ventral views permitting identification of the subspecies as *mexicana*. It is the only positive collection record known to me in the United States and is almost certainly a chance migrant or stray. The nearest known record is at Tamazunchale, Mexico, over 500 km south. However, this subspecies became established in western Cuba and was commonly collected in 1934 and 1935.

In Miller and Brown (1981), Catalogue No. 685a.

2. *Hamadryas februa ferentina* (Godart, [1824])

Specimens identified: "Texas," 1 ♀ labelled "type" of *Ageronia februa gudula* (Fruhstorfer, 1916) in the British Museum (Natural History). I have examined and photographed this type, and it is a dark female of *H. februa ferentina*. The original description states that it comes from western Mexico. Texas, Hidalgo Co., Bentsen-Rio Grande Valley State Park, 2 ♀♀ 24 Aug. 1969, Leg. M. A. Rickard, in Amer. Mus. Nat. Hist. Coll.; Texas, Pharr, 1 ♀ Leg. H. A. Freeman, in O. Buckholz Coll., in Amer. Mus. Nat. Hist. Coll.; Texas, Hidalgo Co., Bentsen-Rio Grande Valley State Park, 1 ♀ (worn), 1 ♂ 24 Aug. 1969, Leg. Roy Kendall; 1 ♂ (fresh) 30 Aug. 1973, Leg. M. A. Rickard in Roy Kendall Coll.; Texas, Hidalgo Co., Loop 37, 6 mi. W of Mission (fresh), 19 Oct. 1973, Leg. W. William and N. McGuire, in Roy Kendall Coll.; "Texas" 1 ♂, 1 ♀ in Carnegie Museum Coll.; "Texas" 1 ♂ Coll. T. L. Mead in Holland Coll., No. 299, labelled "*Ageronia feronia* (Linn.)" in the Carnegie Museum Coll.

Other records: Reported from Texas by McGuire and Rickard (1974), Howe (1975), and others as *H. februa gudula* (Fruhstorfer) which is one of many synonyms of *H. februa ferentina*. This is the most commonly collected *Hamadryas* in the United States and is probably a resident or becomes established regularly in southern Texas. The larvae probably feed on the euphorbiaceous plant *Tragia* which occurs in southern Texas.

In Miller and Brown (1981) as *Hamadryas februa gudula* (Fruhstorfer) No. 683a.

3. *Hamadryas feronia farinulenta* (Fruhstorfer, 1916)

Specimens identified: Texas, Hidalgo Co., Loop 37, 6 mi. W of Mission, 1 ♂ (fresh)

15 Jul. 1975. In Roy Kendall Coll. "Texas" labelled "A. *formax*" [Sic.] 1 ♂ in Los Angeles Co. Mus. Nat. Hist.

Other records of "*feronia*": "This remarkable insect is said to be occasionally found in Texas" Holland (1898). Texas, Pharr. "Strays" in Oct. and Nov., Klots (1951). Texas, Brownsville, "Strays," Howe (1975). "Southern Texas." Many reports and quotes with no specific data starting with Scudder (1875) need verification. The two male records from Texas appear to be the only valid records of this species for the United States. No other United States specimens have been found in any of the museum collections studied. (This is frequently confused with *H. februa ferentina*. See misidentified record in Holland Coll. above.)

In Miller and Brown (1981), Catalogue No. 682a.

4. *Hamadryas amphichloe diasia* (Fruhstorfer, 1916)

Specimens identified: (Photograph). Florida, Monroe Co., Plantation Key, 5 Jul. 1978, Leg. Paul Tuskes. Florida, Monroe Co., Key Largo, Tavernier, 16 Jul. 1978 (sight record) Paul Tuskes. These specimens were reported as *Hamadryas februa diasia* in the 1978 Field Summary (1979). It is unknown whether they are migrants, temporary, or permanent residents. *Tragia saxicola* Small occurs in the Florida Keys as well as two other species of *Tragia* which could be host plants. *H. amphichloe diasia* occurs in Cuba, Jamaica, and Puerto Rico where it is relatively uncommon or rare and in Hispaniola where it is fairly common. *H. amphichloe diasia* has been called *H. ferox diasia*. As stated in Jenkins (1983) *Ageronia amphichloe* Boisduval, 1870 was *incertae sedis* for over 100 years due to the poor description. I examined the original Boisduval type in the British Museum and found that *Ageronia ferox tegyra* Fruhstorfer, 1916 is a synonym, and *H. ferox diasia* becomes *H. amphichloe diasia*. (For *H. "ferox"* records in Texas see list of unsubstantiated records below.)

Not listed in Miller and Brown (1981).

5. *Hamadryas guatemalena marmorice* (Fruhstorfer, 1916)

Specimens identified: Texas, Hidalgo Co., Bentsen-Rio Grande Valley State Park, 1 ♂ (fresh), 17 Aug. 1974, Leg. Frank Hedges, on loan to Roy Kendall Coll. (a specimen of this subspecies was photographed by Harry Darrow in Mexico, and published by Pyle [1981] as *H. fornax*). The Texas specimen appears to be the first and only valid United States record. This subspecies occurs from Tamaulipas in northeastern Mexico and Sonora, Mexico, to the Isthmus of Tehuantepec and Chiapas. Further details are being published by Kendall.

Other records of "*H. guatemalena*": Godman and Salvin (1883) confused and misidentified *H. feronia* as *H. guatemalena* and assumed that *H. feronia* reported for Texas by Strecker (1878) was *H. guatemalena*.

Not listed in Miller and Brown (1981).

6. *Hamadryas iphthime joannae* Jenkins, 1983

Specimens identified: Texas, Burnet Co. 1 ♂ (fresh) Aug., William C. Wood Coll., in the Amer. Mus. Nat. Hist. Coll. This is northwest of Austin, Texas, and is surely a stray migrant since the nearest records are at Tamazunchale and Tuxpan, Veracruz, Mexico, about 1000 km south. This is a new record for the United States. The specimen had been identified previously as *H. iphthime* (Bates) by F. M. Brown but was never published. *Ageronia iphthime* Bates was described from a syntype from Bogotá, Colombia, and partly from a syntype from Guatemala. I have designated the Bogotá type as lectotype of the Panamá and South American population and the Mexican and Central American population was described as *H. iphthime joannae*. See below for an erroneously labelled and misidentified specimen of *H. iphthime iphthime*.

Not listed in Miller and Brown (1981).

7. *Hamadryas atlantis lelaps* (Godman and Salvin, 1883)

Specimens identified: (Photograph). Arizona, Cochise Co., Douglas, San Bernadino Ranch, 1 ♂, 14 Aug. 1976, Leg. Peter Jump. The photograph was sent by Richard A. Bailowitz who also reports an additional sight record.

H. atlantis lelaps was recognized as a new subspecies by Jenkins (1983) after

collecting specimens in Sinaloa, Mexico, and comparing with the ♀ type of *Ageronia lelaps* in the British Museum. Godman and Salvin in 1901 had synonymized *Ageronia lelaps* as the ♀ of *Ageronia atlantis*. Fruhstorfer in Seitz (1916) misidentified *lelaps* and applied the name to an undescribed *Hamadryas glauconome grisea* Jenkins (1983) which occurs in Sonora, Mexico, and which should be collected in Arizona and/or New Mexico.

This new record for the United States is a significant northward extension of range of *H. atlantis lelaps* which had previously been reported as far north as Álamos, Sonora, Mexico.

B. Unsubstantiated Records

1. *Hamadryas fornax* (Hübner, [1823])

H. fornax fornacalia (Fruhstorfer, 1907) is an uncommon and locally occurring subspecies that is definitely known as far north as near Tampico, Mexico, about 400 km south of Texas. *H. fornax* was reported from southern Texas by Scudder (1875) and quoted by many authors. Holland (1898) states "*A. fornax* is reported only from the hotter parts of Texas." I examined the Holland Collection in the Carnegie Museum which revealed a specimen labelled *Ageronia fornax* Hubn. in purple ink, probably in Holland's handwriting. It is labelled "Texas or N.M./Coll. T. L. Mead/Holland Coll." It is a misidentified male of *Hamadryas iphthime iphthime* which is found from Costa Rica to southern South America. Klots (1951) reported it from Pharr, Texas, in Oct., and Howe (1975) in the Brownsville area. Pyle (1981) misidentified and published a picture of *H. guatemalena marmarice* from Mexico as *H. fornax* for Texas. Despite all these publications I have not been able to confirm any valid specimens in over 30 major museums and private collections examined.

In Miller and Brown (1981), listed as *Hamadryas fornax fornacalia*, No. 681a.

2. *Hamadryas amphichloe ferox* (Staudinger, [1886])

H. amphichloe ferox is a rare species that has been reported from Texas. It occurs in Venezuela and Colombia and has been reported from Central America. I have studied and photographed the single holotype male of *H. ferox fictitia* (Fruhstorfer, 1916) from "Mexico" in the British Museum (Natural History). This is a synonym of *H. amphichloe ferox*. The locality record of Mexico is probably fictitious. I have examined two other old specimens of *H. amphichloe ferox* from Central America which are probably mislabelled: 1 ♂ from "Guatemala," U.S. National Museum Coll., and 1 ♂ from "Panama" in the Strecker Coll. at the Allyn Museum, neither with specific localities. Klots (1951) states "There is also a vague record of *H. ferox* Staudinger from southern Texas which I have been unable to verify." Hoffman (1940) also was dubious of *H. ferox fictitia* and knew of no locality in Mexico where it occurred.

In Miller and Brown (1981), listed as *Hamadryas ferox* (Staudinger), No. 684. An asterisk was used to indicate that it was of doubtful occurrence in the United States. This record should be deleted from the list.

3. *Hamadryas guatemalena* (Bates, 1864)

Godman and Salvin (1883) include the record of *H. feronia* from southwest Texas by Scudder (1875) and other authors as *H. guatemalena*. This was due to their confusion of these two species. They considered *H. feronia* as occurring from Panamá south and that *H. guatemalena* occurred in Central America and Mexico. This was based on misidentifications, and no known specimens were then available from Texas to confirm *H. guatemalena*.

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