DISTRIBUTIONAL NOTES ON THE GENUS *MESTRA* (NYMPHALIDAE) IN NORTH AMERICA

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The genus *Mestra* Hübner is of Neotropical distribution and contains six species, one of which, *amymone*, ranges northward into the United States. *Mestra amymone* (Menetries) is a breeding resident of the lower Rio Grande Region of Texas, but has been frequently recorded as a "stray" far north of here (figure 1).

Many tropical species, such as *Phoebis philea* (Johansson), are noted for sometimes "straying" far northward, but the records for *Mestra amymone* differ from all others in one important respect, the frequency of multiple captures in the extra-normal range. Records of tropical butterflies, in regions considerably north of their normal range, consist almost exclusively of single captures; yet nearly 50% of similar records for *Mestra amymone* are for multiple captures. This is significant because it may indicate that *M. amymone* is actually breeding in many of the areas where it has been found.

The reported foodplant for *Mestra amymone* is a species of *Tragia* (family Euphorbiaceae), a plant commonly known as "Noseburn" (because of an effect the plants are alleged to have on livestock) or, in Mexico and parts of the Southwest, as "Chichicastle." Most workers have excluded any possibility of *M. amymone's* breeding north of its normal range on the assumption that its foodplant, *Tragia*, is not available. Brown (1957) for example, says: "There is no chance that this species will become naturalized in Colorado. It is a tropical butterfly that breeds as far north as southern Texas. Its foodplant, *Tragia*, does not grow in this region." Johnson (1962), however, refers to the genus *Tragia* as ". . . widespread in the arid grasslands and brush of northern Mexico, north to Arizona, Colorado and Kansas. . . ." It is possible then that *M. amymone* can breed on *Tragia* far north of southern Texas.

Noseburn is a small plant with small staminate flowers in racemes, narrow serrate leaves and trailing vine-like stems covered with stinging hair. Nine species and varieties of North American *Tragia* have been described, but modern workers, such as Johnson (1962), McVaugh (1961) and Shinners (1961), concur that they all belong to a single variable species, *neptifolia* Cavanilles. The approximate recorded range of *Tragia*

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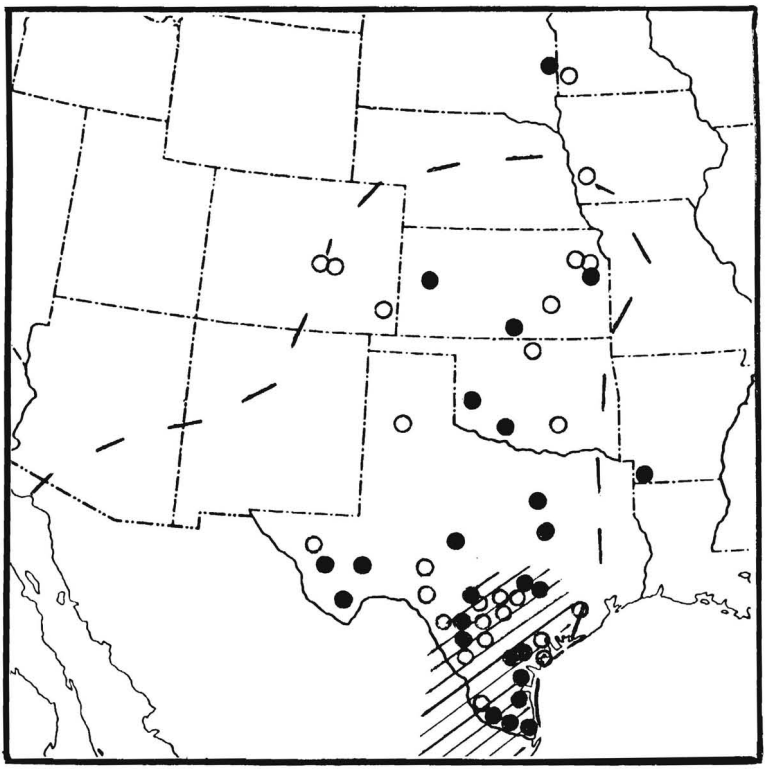

Fig. 1. Distribution of *Mestra amymone* (Menetries) in the Great Plains Region of the United States. Solid circles indicate multiple captures (more than one specimen in the same year); open circles, single captures. The cross hatched area indicates the approximate permanent breeding area. The hashed line traces the approximate northern limits of *Tragia neptifolia* Cavinilles, the larval foodplant for *M. amymone*.

neptifolia in the United States has been traced (hashed line) on the map (fig. 1), it encircles most of Texas, Oklahoma and Kansas plus parts of Arizona, New Mexico, Colorado, Nebraska, Iowa and Missouri—enclosing all but three of the U.S. records for *Mestra amymone*. Within its range, *Tragia neptifolia* occurs in almost all habitats from sea level to 8000 feet, but is most abundant on rangeland at moderate elevations.

Until early stages are collected, there will be no proof that *M. amymone* breeds north of Texas; in the meantime, the most convincing "circumstantial" data that it does, comes from Reed (1913) who writes: " . . . in the summer of 1907, I found quite a large colony of them [*Mestra amymone*] near Cordell, Washita County [Oklahoma]. I took specimens over a range of about eight or ten miles in extent. They were permanently located and

were breeding." Other records of multiple captures dot Oklahoma and Kansas and there is a multiple record for South Dakota. We must assume that *M. amymone* does indeed occasionally breed on the Great Plains, but is unable to overwinter and become permanently established.

Mestra amymone is a weak flying species usually found in open areas, and along roadsides and the edges of woods and is easily captured in flight or at flowers. W. H. Howe (*in litt.*) has taken specimens in bait traps near Ottawa, Kansas. Unlike most of the migratory butterflies it is not a strong flier and in fact seems to be so fragile as to be unlikely to survive being swept great distances by sheer force of the winds. I am of the opinion that in some years overpopulation or drought may cause a shortage of food in the normal range of the species, and the butterflies disperse northward looking for foodplant. This theory would help explain the frequency of records from widely separated areas in the same year, i.e. Colorado Springs and Ottawa in 1950.

Records for *Mestra amymone* taken north of Texas may be summarized as follows:

ARKANSAS: I took five specimens in less than an hour's collecting near Texarkana, Miller County on August 31st, 1963.

COLORADO: Brown (1957) cited a specimen taken by Norman Marston at Hartman, Prowers County, one by himself in Bear Creek Canyon, near Colorado Springs, July 4th, 1950, plus a possible site record near Jimmy Camp Creek, southeast of Colorado Springs.

IOWA: The only Iowa specimen of *M. amymone* is an undated specimen taken by Dr. L. G. Stempel near Macedonia and reported by Lindsay (1917).

KANSAS: Calkins (1932) recorded several specimens from Scott County in August and September of 1931; Field (1938) reported records from Sumner, Greenwood and Shawnee counties; Overman (1914) reported a specimen taken during October 1904 near Lawrence, Douglas County; Howe (1958) reported eight specimens taken at Ottawa, Franklin County during 1950.

MINNESOTA: A single museum specimen has been located bearing the data: "Pipestone, Minn. 1894." This specimen may have originated with Truman who made his collection at Volga, South Dakota (actually not far away) at approximately this time. The present location of the Truman collection is unknown.

NEBRASKA: The popular butterfly guides (i.e. Holland, 1930; Klots, 1951; and Ehrlich & Ehrlich, 1961) all record *M. amymone* as straying north to Nebraska. However, Leussler (1938) excluded it from his state list for Nebraska and there are no other published records from the state. I have been unable to locate any specimens in museum collections. Ne-

braska specimens will no doubt be collected at some date in the future; in the meantime, it can be assumed that those specimens collected in Minnesota, Iowa and South Dakota either migrated through Nebraska or are progeny of butterflies that did.

OKLAHOMA: Reed (1913) stated that *M. amymone* was a rare species in Oklahoma, but could be found by the careful collector in almost any year; his records include Washita (1907), Ponotoc (1905) and Kay (1911) counties. The butterfly was also taken in moderate numbers in Comanche County in 1950 and again in 1954.

SOUTH DAKOTA: Truman (1896) listed *Mestra amymone* among the species that he had taken at Volga, South Dakota; undoubtedly these were taken in a single year, probably 1894.

There are no known records of *Mestra amymone* for Arizona, New Mexico or Missouri; *Tragia neptifolia*, the foodplant, occurs in these areas and the butterfly may eventually be found as well. There is also a remote possibility that specimens of *M. amymone* will turn up eventually in Wyoming or Louisiana. Distributional data for Texas and Central America follow:

TEXAS: Gooch & Strecker (1924) recorded *Mestra amymone* as double-brooded and very common at Waco, McLennan County, and this is apparently the most northerly point where *amymone* has been known to overwinter. Roy O. Kendall of San Antonio, Texas supplied me with a list of all Texas localities at which *M. amymone* has been collected; these include Aransas Bandera, Bee, Bexar, Bastrop, Brewster, Cameron, Comal, Crockett, Culberson, Dallas, Dimmit, Frio, Harris, Hidalgo, Jeff Davis, Jim Wells, Kendall, Kerr, Kinney, Kleberg, Live Oak, McLennan, Medina, Pecos, San Patricio, Starr, Tom Green, Swisher, Travis, Uvalde, Val Verde, Victoria, Zapata and Zavala counties. As can be seen by the map (fig. 1) these show a very strong concentration in the lower Rio Grande Valley.

MEXICO: Hoffman (1940) cited the Mexican range of *M. amymone* as temperate and hot areas over almost all of the Republic. Actually the butterfly seems to be present throughout central and southern Mexico at low or moderate elevations, but in northern Mexico is confined to that area east of the Continental Divide.

CENTRAL AMERICA: The southern limit of *Mestra amymone* in Central America is not known. It has been taken in Guatemala and British Honduras by E. C. Welling and in El Salvador by M. Serrano. It probably reaches Nicaragua and Costa Rica but, along with other members of the genus, seems to be absent from Panama (Dyar, 1914; Huntington, 1932; G. Small, *in litt.*). In South America, *Mestra* is represented *M. bogotana*

Felder and other species; the range "gap" in Panama does not seem to be due to a lack of available foodplant.

Records of *Mestra* from Florida are undoubtedly erroneous despite the fact that Strecker described *Cystineura [Mestra] floridana* from the Everglades. According to Fox (1942), Strecker "deliberately misquoted the locality and number of specimens in order to conceal the fact that he had used the Mengel series for his description". Twelve specimens in the Mengel Collection originated with Fred de Hart and bear the data label of "Crystal River, Florida" [Citrus County?], a locality 70 miles north of Tampa. Kimball (1965) removed *M. floridana* from the Florida list and presumed either that they were not taken in Florida or that they may have represented an isolated colony that was wiped out by the freeze of 1899. This second theory is extremely doubtful because there is no foodplant, *Tragia*, available in Florida. *M. floridana* is identical in appearance to *Mestra bogotana cana* Erichson of Trinidad, and the most plausible explanation is that the Mengel specimens originated there and were mislabelled. *Mestra bogotana* extends northward in the Antilles only to St. Lucia and Dominica. A third *Mestra, dorcas* Fabricius, is found between here and Florida on Jamaica. *Archimestra teleboas* Menetries, which was formerly placed in *Mestra*, occurs in the Antilles also. Although *Mestra floridana* still appears in our North American checklists (i.e. dosPassos, 1964), I am of the opinion that it should be "sunk" as a synonym of *cana* and removed from future checklists.

Without getting in a discussion over the need for or the value of vernacular names, it is interesting to mention that there is an old name, "The Texas Bagvein", that has not been used for *Mestra amymone* since the 1930's. It is certainly a more imaginative name than "The Amymone" which is currently in use in field guides.

I appreciate the assistance of Dr. George Wallace of the Carnegie Museum and Dr. Frederick Rindge of the American Museum of Natural History for allowing me access to their collections to obtain distributional data, and of Roy O. Kendall of San Antonio, Texas for supplying me with detailed distributional data for *M. amymone* in Texas.

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FREEMAN COLLECTION OF MEGATHYMIDAE DONATED TO THE AMERICAN MUSEUM OF NATURAL HISTORY

For the past 30 years Mr. H. A. Freeman has concentrated on the Megathymidae. During this period he has worked out the life histories and food plants of most of the species and subspecies in this family, and he has named many of these. His magnificent collection, containing 2353 specimens, nearly all of them reared from the early stages, has been donated to the American Museum of Natural History. It includes nine holotypes, 14 allotypes, one neallotype, and 638 paratypes; 76 genitalic preparations and a large number of pupal cases are also included. All of Freeman's primary types of the Megathymidae, with one exception, are now in the collection of the American Museum of Natural History. This generous donation gives the American Museum one of the largest and most complete collections of this family in existence.

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