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THE NEARCTIC SPECIES OF EVANIIDAE
(HYMENOPTERA)

By HENRY TOWNES

THE family Evaniidae is an isolated group of parasitic Hymenoptera most closely related to the Serphoidea. It differs from all but a few Hymenoptera in having the abdomen attached near the top of the propodeum instead of down near the coxae, and from these few in abdominal structure as follows: The first abdominal segment is cylindrical and slightly arched, and the rest of the abdomen is small, flattened, circular or subcircular or subtriangular, and attached to the first segment by a free articulation. The Evaniidae differ from all other parasitic Hymenoptera in having a long anal lobe at the base of the hind wing.

The species of Evaniidae are parasitic in the egg capsules of Blattidae and are most abundant in the Tropics, where their hosts are commonest. A few species parasitic on domestic cockroaches have been widely distributed by commerce. Two of these species are established in the Nearctic Region, and these together with nine native species constitute our known fauna. The introduced species occur in cities and are frequently collected on the windows of buildings. Of the native species, which are to be found in woods, several are common in the Southeastern United States and occur as far north as southern Canada. West of the humid East, evaniids are occasional along the southern border of the United States, and a single rare species has been taken in central California.

Previous comprehensive papers on the Nearctic Evaniidae include a revision by Bradley (Trans. Amer. Ent. Soc., vol. 34, pp. 137-162, 1908) and a literature compilation by Kieffer (Das Tierreich,

Lief. 30, pp. 6-188, 1912). Persons interested in a complete record of the literature should consult Hedicke (*Hymenopterorum catalogus*, pars 9 (Evaniidae), 1939). Only the original descriptions are cited below in the species bibliographies. The types of the specific names proposed by Ashmead, Bradley, and Kieffer have been studied. The rest have not been available.

The locations of types and of specimens studied from institutional collections are indicated in parentheses by the name of the city in which each collection is located.

KEY TO THE NEARCTIC GENERA OF EVANIIDAE

1. Forewing with only 3 strong longitudinal veins (costal, subcostal, and medial) and only one closed cell (subcostal); second and third tergites covering all or nearly all the gaster; notaulus extending less than 0.6 length of mesoscutum, usually absent..... **Hyptia**
Forewing with numerous veins enclosing eight cells; second and third tergites enclosing basal $0.6 \pm$ of gaster; notaulus complete..... 2
2. Submedian to subbasal constricting groove on hind coxa interrupted on ventrolateral face of coxa; base of middle coxa separated from base of hind coxa by about 2.0 length of middle coxa; metasternum large and rather evenly convex; hind coxa beneath with a curved longitudinal carina next to metasternal fork (not visible when coxa is turned outward); shoulders of pronotum rounded, without a sharp transverse ridge; mediellan vein strong for about 0.9 distance to wing margin..... **Evania**
Submedian to subbasal constricting groove on hind coxa not interrupted on ventrolateral face of coxa, completely encircling coxa; base of middle coxa separated from base of hind coxa by about 1.0 to 1.5 length of middle coxa; metasternum smaller; hind coxa beneath without a curved longitudinal carina next to metasternal fork, but sometimes with a curved groove in that position; shoulders of pronotum with a sharp transverse ridge; mediellan vein distinct for less than 0.8 distance to wing margin..... 3
3. Hind coxa beneath with a curved longitudinal groove next to metasternal fork (not visible when coxa is turned outward; this groove should not be confused with transverse coxal constriction); lower part of frons with a lateral longitudinal carina that curves around outside of antennal socket to approach or reach midline on upper part of face; second intercubital vein (a very weak vein) meeting radial cell near its distoventral angle; mediellan vein distinct to beyond middle of wing (except in a few exotic species); forewing of Nearctic species 5.5 to 7.5 mm. long..... **Prosevania**
Hind coxa beneath without a longitudinal groove next to metasternal fork; lower part of frons without a lateral longitudinal carina; second intercubital vein (a very weak vein) meeting radial cell considerably basad of its distoventral angle; mediellan vein not distinct to middle of wing; forewing of Nearctic species 4.0 to 5.0 mm. long..... **Evaniella**

Genus EVANIA Fabricius

Evania FABRICIUS, *Systema entomologiae*, p. 345, 1775. Type: *Ichneumon appendigaster* Linnaeus. Designated by Curtis, 1829.

As defined in the key, *Evania* is a much more restricted and compact genus than as used by other authors. Most of the species that they

refer to *Evania* belong properly in *Prosevania*, *Evaniella*, *Szepligetella*,¹ and *Acanthinevania*.

In the Nearctic Region *Evania* in the strict sense contains only the introduced *E. appendigaster*. Most of the other species of the genus are Oriental.

EVANIA APPENDIGASTER (Linnaeus)

Ichneumon appendigaster LINNAEUS, *Systema naturae*, ed. 10, p. 566, 1758. Type: Hispanic America (location unknown).

Evania unicolor SAY, in Keating, *Narrative of an expedition to the source of St. Peters River*, etc., vol. 2, p. 320, 1824; LeConte ed., vol. 1, p. 214. Types: Pennsylvania and near Rocky Mountains (destroyed).

The large size of this species (forewing 5.5 to 7.0 mm. long) makes it superficially similar only to *Prosevania punctata* among the Nearctic species. It may be distinguished from this species by its smooth face, with fine, rather sparse punctures, and by the pleura with rather sparse, very large separate punctures rather than close, large, reticulate punctures.

Specimens.—Many males and females from ARIZONA (Globe, Santa Rita Mountains, Tempe, and Tucson); DISTRICT OF COLUMBIA (Washington); FLORIDA (Arcadia, Fort Myers, and Jacksonville); GEORGIA (Atlanta and Thomasville); LOUISIANA (Baton Rouge); NEW YORK (Long Island and New York City); PENNSYLVANIA (Philadelphia); TENNESSEE (Memphis); and TEXAS (Dallas, El Paso, Houston, San Antonio, and 20 miles north of San Antonio). Most of these specimens were taken during the summer months. Those of other dates are: April 6 at Arcadia, Fla.; April 22 at Fort Myers, Fla.; May 23 at Philadelphia, Pa.; May 28 at Baton Rouge, La.; September 6 at Dallas, Tex.; and December at Philadelphia, Pa. The earliest Nearctic record of capture on this material is a specimen from Washington, D. C., taken June 5, 1879, but Say's record of the presumably synonymous *Evania unicolor* is much earlier.

This species is probably of Oriental origin, but it now occurs in most of the tropical and subtropical parts of the world. In the United States it is common in Arizona and in the cities of the Gulf and Atlantic States as far north as New York City. In other parts of the world it has been reared from the egg capsules of *Blatta orien-*

¹ *Szepligetella* Bradley, 1908, was erected as a monotypic endemic genus for the Hawaiian *Evania sericea* Cameron. *E. sericea* is not an endemic of Hawaii, as I have seen specimens of it also from New Guinea, Fiji, the Philippines, the Marquesas, Kapingamarangi, Bikini, Swains Island (north of Samoa), and Tahiti. It was recorded from the New Hebrides by Cheesman in 1936. A specimen I collected on Kapingamarangi was flying about the eaves of a native house of *Pandanus* thatch. In view of this and its distribution, it seems probable that *sericea* is parasitic on a blattid living in *Pandanus* thatch and with its host was widely spread by migrations of the Polynesians and other natives. In the U. S. National Museum are five additional species of *Szepligetella*, all from Australia.

talis and *Periplaneta* spp., and these are doubtless its hosts in the United States also.

Genus PROSEVANIA Kieffer

Prosevania KIEFFER, Ann. Soc. Ent. France, vol. 80, p. 157, 1911. Type: *Evania* (*Prosevania*) *afra* Kieffer. Designated by Viereck, 1914.

As defined in the key, *Prosevania* is a large genus of the Old World Tropics. A single introduced species is common in the cities of the Eastern United States.

PROSEVANIA PUNCTATA (Brullé), new combination

Evania punctata BRULLÉ, Expédition scientifique de Morée, vol. 3, p. 378, 1833. Type: Greece (? Paris).

Evania urbana BRADLEY, Trans. Amer. Ent. Soc., vol. 34, p. 140, 1908. Type: ♂, Philadelphia, Pa. (Philadelphia).

This species differs from most others of its genus in its more robust thorax, shoulder carina of pronotum extending downward on each side nearly to the lower corner of the pronotum; shoulders of pronotum rather rounded; and speculum not reaching the front edge of the mesopleurum but bounded anteriorly by some fine punctures. Among the Nearctic evaniids, its large size (forewing 5.5 to 7.5 mm. long) makes it superficially similar only to *Evania appendigaster*, but in addition to the generic characters it is easily distinguished from that species by its coarsely striatopunctate face and its pleura reticulatopunctate except at the speculum.

Specimens.—Many males and females from DELAWARE (New Castle County); DISTRICT OF COLUMBIA (Washington); GEORGIA (Atlanta); NEW JERSEY (Newark and Plainfield); NEW YORK (Brooklyn, Flatbush, Ithaca, Long Island, New York, and Yonkers); NORTH CAROLINA (Elizabeth City); OHIO (Columbus); PENNSYLVANIA (Harrisburg and Philadelphia); and VIRGINIA (Falls Church, Norfolk, and Roanoke). Collecting dates for these specimens range throughout the growing season. The first record of capture in the Nearctic Region is a specimen taken in Washington, D. C., August 29, 1898, by F. C. Pratt.

This species is a native of the Mediterranean Region and is naturalized in the cities of the Eastern United States from New York and Ohio south to Georgia. Though no rearing records are available, the large size of the species and its occurrence in cities indicate that it is a parasite of *Periplaneta* spp. and *Blatta orientalis*.

Genus EVANIELLA Bradley

Evaniella BRADLEY, Can. Ent., vol. 37, p. 64, 1905. Type: (*Evania unicolor* Say as misdetermined by Ashmead) = *semaeoda* Bradley. Original designation.

This is a large genus of the Neotropics and is represented also in the Australian Region. Three species occur in the Nearctic Region, one widespread in the Eastern United States and the other two restricted to New Mexico and California.

KEY TO THE NEARCTIC SPECIES OF EVANIELLA

1. Cheek about 1.0 as long as height of eye; coloration almost uniformly reddish brown----- 3. *californica* (Ashmead)
- Cheek about 0.3 as long as height of eye; coloration partly or entirely black----- 2
2. Head about 1.0 as wide as thorax; temple with rather close, large punctures; thorax entirely black to entirely ferruginous, when only partly ferruginous this color present on front part of thorax, hind part black.
 1. *semaeoda* Bradley
 - Head about 0.8 as wide as the thorax; temple with sparse small punctures; thorax black anteriorly, ferruginous posteriorly.
 2. *neomexicana* (Ashmead)

1. EVANIELLA SEMAEODA Bradley

Evaniella semaeoda BRADLEY, Trans. Amer. Ent. Soc., vol. 34, p. 144, 1903.
Type: ♂, Browns Mills, N. J. (Ithaca).

Forewing about 4.8 mm. long; head about 1.0 as wide as the thorax; cheek about 0.3 as long as the height of the eye; mandible without a posterior ventral tooth; frons and temple with close large punctures; mesoscutum with numerous large punctures, closely spaced on the median lobe and sparse on the lateral lobes; shoulder carina of pronotum strong, continuous across the midline and laterally curved backward to near the hind margin of the pronotum below the tegula; subdiscoidal vein weak, unpigmented; first tergite with very fine punctures, in the female with very sparse, large punctures also.

The color varies from nearly all black to nearly all but the gaster ferruginous. Blackish specimens have the legs a little paler than the body; tegula and front tibia and tarsus ferruginous; scape and front femur brownish ferruginous; basal part of first trochanter of hind legs stramineous; and basal four segments of female antenna stramineous to brownish ferruginous. Commonly the pronotum and mesoscutum are ferruginous and the apical part of the first tergite stramineous. In the most extensively ferruginous specimens only the gaster is blackish, and the flagellum of the male and all but the basal three flagellar segments of the female dark brown. The head and hind legs are among the last parts to be invaded by ferruginous.

Specimens.—Many males and females from FLORIDA (Crescent City, Lakeland, Orlando, Pablo Beach, and Zolfo Springs); GEORGIA (Okfenokee Swamp and Tifton); KANSAS (Baldwin); LOUISIANA (Tallulah); MARYLAND (Plummers Island and Takoma Park); MICHIGAN (Livingston County); NEW JERSEY (Jamesburg, Moorestown, and

Wenonah); NEW YORK (Cold Spring Harbor, Farmingdale, and Riverhead); PENNSYLVANIA (Gladwyn); RHODE ISLAND (North Kingston and Westerly); and VIRGINIA (near Washington D. C., Falls Church, Mount Vernon, and New Church).

Practically all the dates of capture are from June 19 to August 4. Dates outside of this range are August 10 at Orlando, Fla.; August 22 at Lakeland, Fla.; and August 26 at Okefenokee Swamp, Ga. This seasonal distribution indicates a single generation a year.

This species occurs in the Lower and Upper Austral Zones of the United States from the Atlantic west to Michigan and Kansas. Along the Atlantic coast it ranges north to Long Island and Rhode Island, and in the Central States to Livingston County, Mich.

2. EVANIELLA NEOMEXICANA (Ashmead)

Evania Neomexicana ASHMEAD, Can. Ent., vol. 33, p. 304, 1901. Lectotype hereby selected: ♂, Las Cruces, N. Mex., September 9 (Washington).

Forewing about 4.0 mm. long; head about 0.8 as wide as the thorax; cheek about 0.3 as long as the height of the eye; mandible without a posterior ventral tooth; frons with rather close, moderately small punctures; temple with sparse medium-sized punctures; shoulder carina of pronotum continuous across the midline, extending laterad to the front end of the notaulus; mesoscutum with interspersed sparse medium-sized punctures and closer fine punctures; subdiscoidal vein weak, unpigmented; first tergite with very sparse small punctures.

Black or piceous. Lower 0.6 of mesepisternum, all the metapleurum except its upper section and all the propodeum except basad of and above the abdominal socket, ferruginous.

Specimens.—Redescribed from the types: a male from Las Cruces, N. Mex., T. D. A. Cockerell (Washington), and a male from Las Cruces, N. Mex., September 9 (Washington).

3. EVANIELLA CALIFORNICA (Ashmead)

Evania Californica ASHMEAD, Can. Ent., vol. 33, p. 304, 1901. Type: ♂, Natoma, Calif. (Washington).

Forewing about 3.5 mm. long; head about 1.0 as wide as the thorax; cheek about 1.0 as long as the height of the eye; mandible without a posterior ventral tooth; frons and mesoscutum with fine rather sparse punctures; temple with very fine sparse punctures; shoulder carina of pronotum present only near the front end of the notaulus, not continuous across the midline nor extending laterad beyond the inner edge of the tegula; subdiscoidal vein weak, unpigmented; first tergite with fine punctures.

Reddish brown. Mandible, lower part of face, and all but upper part of clypeus yellowish brown.

Specimen.—Redescribed from the type male from Natoma, Sacramento County, Calif., July 7, 1895 (Washington).

Genus **HYPTIA** Illiger

Hyptia ILLIGER, Mag. Insekt. (Illiger), vol. 6, p. 192, 1807. Type: *Evania petiolata* Fabricius. Monobasic.

Hyptium SHUCKARD, Entomologist, vol. 1, p. 120, 1841. Emendation.

This genus is easily distinguished from others in the Nearctic Region by the partial or complete absence of the notaulus and by the reduced venation. Only the subcostal cell of the forewing is enclosed. The species are restricted to the New World, with most of them in the Neotropics.

The Nearctic species vary considerably in color, which has led to the creation of some synonyms. All six may have the head, thorax, and first tergite either entirely black or partly to entirely ferruginous. The forward and upper parts of the thorax are the regions most frequently ferruginous, and the ferruginous coloration is most frequently and extensively developed in specimens from the southern parts of the ranges of the various species.

Our species are on the wing mostly in midsummer and, at least in the North, seem to have a single generation a year. Adults occur in woods. The commoner species (*thoracica*, *reticulata*, and *harpyoides*) are probably all parasites of *Parcoblatta* spp., though the rearing data are scanty.

KEY TO THE NEARCTIC SPECIES OF HYPTIA

1. Mesoscutum about 0.54 as long as wide; forewing about 2.3 mm. long; lower part of mesopleurum with only fine punctures or with a very few coarse ones (fig. 44, *e*)----- 5. *floridana* Ashmead
- Mesoscutum 0.65 to 0.95 as long as wide; forewing 2.5 to 4.8 mm. long; lower part of mesopleurum with scattered large coarse punctures (fig. 44, *a-d, f*) - 2
2. Mesopleurum near its upper posterior margin with oblique rugae (fig. 44, *f*); mesoscutum about 0.90 as long as wide; forewing 2.6 to 3.7 mm. long----- 6. *oblonga*, new species
- Mesopleurum near its upper posterior margin without oblique rugae (fig. 44, *a-d*); mesoscutum 0.65 to 0.8 as long as wide; forewing 3.5 to 4.8 mm. long----- 3
3. Median posterior corner of mesopleurum not containing a subcircular depression, though often with a group of depressions nearby (fig. 44, *a, b*)----- 4
- Median posterior corner of mesopleurum containing a subcircular depression (fig. 44, *c, d*)----- 5
4. Punctures on frons so close that they are angular and separated by sharp ridges; hind femur beneath with rather dense small weak punctures----- 1. *harpyoides* Bradley
- Punctures on frons so distant that they are not angular, and the separating areas are rounded or flattened ridges; hind femur beneath with sparse, large, weak punctures----- 2. *thoracica* (Blanchard)
5. Femora black; lower swelling of mesopleurum with a few moderately large punctures (fig. 44, *c*)----- 3. *reticulata* (Say)
- Femora ferruginous; lower swelling of mesopleurum with many large punctures (fig. 44, *d*)----- 4. *femorata*, new species

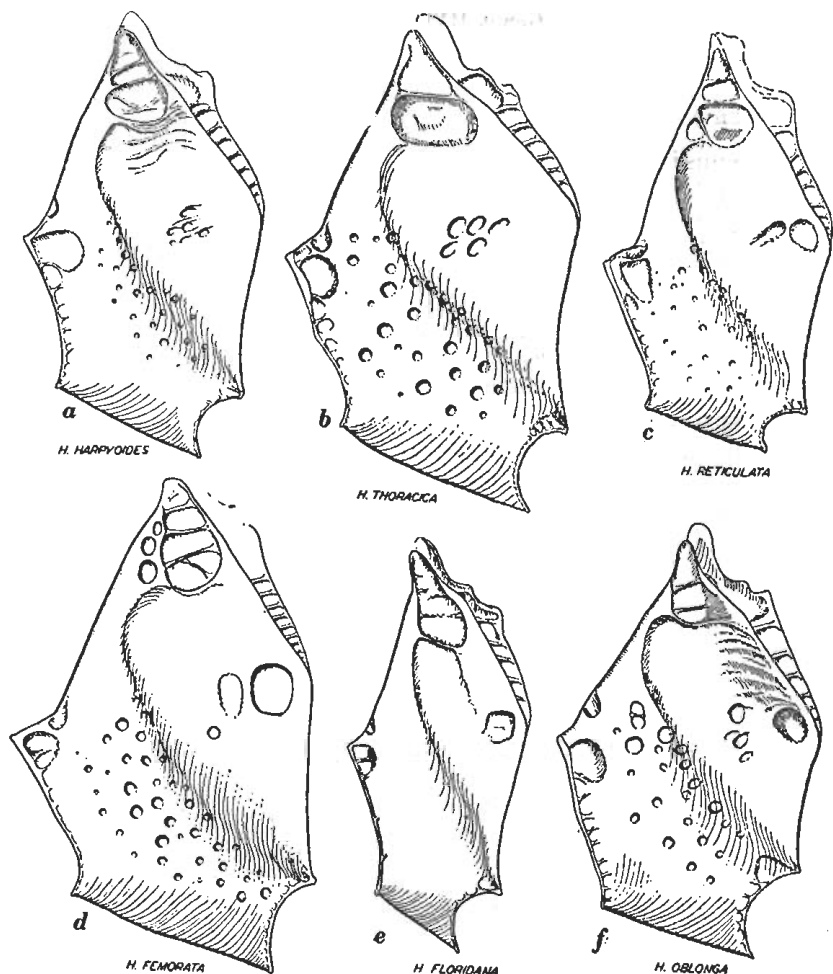


FIGURE 44.—Left mesopleura of the Nearctic species of *Hyptia* (setae and finer punctures omitted from the drawings).

1. *HYPTIA HARPYOIDES* Bradley

FIGURE 44, a

Hyptia harpyoides BRADLEY, Trans. Amer. Ent. Soc., vol. 34, p. 151, 1908. Type: ♀, Philadelphia, Pa. (Ithaca).

Hyptia brevicar var. *glabriceps* KIEFFER, Ann. Soc. Ent. France, vol. 79, p. 72, 1910. Type: ♂, Polk County, Wis. (Claremont, Calif.). New synonymy.

Punctures on frons so close that the frons appears somewhat reticulate, without convex areas between the punctures.

Forewing about 4.0 mm. long; punctures of frons all contiguous, without smooth areas between them; seventh flagellar segment of male

about 1.9 as long as wide, of female about 1.0 as long as wide; median part of pronotum as seen from above with its upper face reduced to a sharp edge; mesoscutum in dorsal view about 0.70 as long as wide, its punctures mostly adjacent to one another; mesopleurum without an impression in its median posterior corner, but often with an irregular group of impressions near the center of the oblique groove, its lower swollen part with some scattered large punctures (fig. 44, *a*); underside of hind femur with rather dense weak punctures, and with an impunctate area extending from near its apical 0.35 to the apex; longer spur of hind tibia about 1.12 as long as the shorter spur and about 0.51 as long as the hind basitarsus; first tergite with moderately fine oblique striation and some indistinct punctures.

Black or piceous. Mandible and tegular fulvous; front and middle legs and antenna from dusky fulvous to rufopiceous. Specimens with more or less extensive ferruginous coloration, as noted under the generic description, are uncommon.

Specimens.—Many males and females from CONNECTICUT (Candlewood Lake); GEORGIA (Rabun County); ILLINOIS (Zeigler); KANSAS (Baldwin, Lawrence, and Logan County at 3,322 feet); MARYLAND (Cabin John, College Park, Hyattsville, Plummers Island, and Takoma Park); MASSACHUSETTS (Forest Hills, Natick, Sagamore, and Wellesley); MICHIGAN (Antrim County, Cheboygan County, Constantine, Detroit, Douglas Lake, Grand Ledge, Huron County, Lake County, Mason County, and Midland County); MINNESOTA (Lake Minnetonka); MISSISSIPPI (Lucedale and Pass Christian); NEW HAMPSHIRE (Antrim and Concord); NEW JERSEY (Lakehurst, Malaga, Palisades, Riverton, and Wenonah); NEW YORK (Bohemia, Cold Spring Harbor, Eastport, Farmingdale, Flatbush, Huguenot, Ithaca, Millwood, Mount Merino, and Poughkeepsie); NORTH CAROLINA (Great Smoky Mountains National Park, Southern Pines, and valley of the Black Mountains); OHIO (Cedar Point and Put in Bay); ONTARIO (Marmor); PENNSYLVANIA (Buck Hill Falls, Carlisle Junction, Cedar Run, Gladwyn, Harrisburg, Heckton Mills, Inglenook, Mount Holly Springs, Rockville, and Spring Brook); RHODE ISLAND (Kingston and Westerly); SOUTH CAROLINA (Anderson); TENNESSEE (Elkmont and Cades Cove, both in the Great Smoky Mountains National Park); and VIRGINIA (Barcroft, Clifton, Dismal Swamp, East Falls Church, Falls Church, Mount Vernon, and Vienna).

Nearly all dates of capture fall between June 20 and August 15, indicating a single generation a year. Records outside of these dates are: June 5 at Anderson, S. C.; June 7 at Lucedale, Miss.; June 13 and 15 in the Great Smoky Mountains National Park of Tennessee; June 14 at Pass Christian, Miss.; August 16 at Forest Hills,

Mass.; August 21 at Midland County, Mich.; August 25 at Mount Holly Springs, Pa.; and August 28 at Flatbush, N. Y.

This evaniid has a more northern distribution than any other in the Nearctic Region. It occurs in the Eastern United States and as far west as Minnesota and Kansas, commonly in the Upper Austral and the warmer parts of the Transition Zone. This species and *Hyptia thoracica* occur in Ontario and are the only evaniids recorded from Canada.

2. *HYPTIA THORACICA* (Blanchard)

FIGURE 44, b

Evania thoracica BLANCHARD, Histoire naturelle des animaux articulés . . ., Ins., vol. 3, p. 299, 1840. Type: Carolina (lost).

Hyptiam thoracicum SHUCKARD, Entomologist, vol. 1, p. 120, 1841. Type: ♂, North Carolina (lost). Preoccupied in *Hyptia* by Blanchard, 1840.

Evania dorsalis WESTWOOD, Trans. Ent. Soc. London (ser. 2), vol. 1, p. 214, 1851. New name for *E. thoracica* Blanchard.

Hyptia brevicar KIEFFER, Arkiv Zool., vol. 1, p. 541, 1904. Type: ♀, Wisconsin (Stockholm). New synonymy.

Hyptia mylacridomanes BRADLEY, Trans. Amer. Ent. Soc., vol. 34, p. 153, 1908. Type: ♀, Ithaca, N. Y. (Ithaca). New synonymy.

Hyptia hyptiogastri BRADLEY, Trans. Amer. Ent. Soc., vol. 34, p. 160, 1908. Type: ♂, Tifton, Ga. (Washington). New synonymy.

Hyptia texana BRADLEY, Trans. Amer. Ent. Soc., vol. 34, p. 161, 1908. Type: ♀, Galveston, Tex. (Lawrence). New synonymy.

Median hind corner of mesopleurum without a subcircular depression; punctures on frons mostly separated by convex or flattened areas; mesoscutum about 0.75 as long as wide.

Forewing about 4.3 mm. long; punctures of frons somewhat confluent in transverse rows, the rows separated by about 0.3 the diameter of the punctures; seventh flagellar segment of male about 1.5 as long as wide, of female about 1.2 as long as wide; median part of pronotum as seen from above with a very narrow upper face; mesoscutum in dorsal view about 0.75 as long as wide, its punctures mostly adjacent, or many of them separated by about 0.3 their diameter; mesopleurum without an impression in its posterior median corner, but with a group of impressions near the center of the median oblique groove, its lower swollen part with numerous large punctures (fig. 44, b); under side of hind femur with a few large weak punctures, impunctate beyond the middle; longer spur of hind tibia about 1.12 as long as the shorter spur and about 0.46 as long as the hind basitarsus; first tergite with moderately dense oblique punctures and with distinct oblique striation.

Black or piceous. Front tibia fulvous; front femur and tarsus, middle legs beyond the trochanters, mandible, and tegula more or less tinged with rufous or the mandible and tegula sometimes entirely rufous. Specimens with more or less ferruginous coloration, as noted

under the generic description, comprise about 40 percent of those I have seen.

The type of *Evania thoracica* Blanchard is not in the Paris Museum, and that of *Hyptiam thoracicum* Shuckard is not in the British Museum. Both are probably destroyed. Since their descriptions will fit several different species, the names must be assigned arbitrarily. Bradley (Trans. Amer. Ent. Soc., vol. 34, pp. 154-156, 1908) has done this in a reasonable manner, and his disposition of the names is followed. He synonymized *thoracicum* Shuckard with *thoracica* Blanchard, redefined *thoracica* Blanchard, and reported on a number of specimens that he identified as *thoracica*. His specimens and description belong to the present species.

Specimens.—Many males and females from CONNECTICUT (Lyme); DISTRICT OF COLUMBIA; FLORIDA (Crescent City, Homestead, Hudson, Jacksonville, Orlando, Paradise Key, and Seven Oaks); GEORGIA (Atlanta, Spring Creek in Decatur County, and Tifton); KANSAS (Gardner); MARYLAND (Beltsville, Prince Georges County, and Takoma Park); MASSACHUSETTS (Holliston, Humarock, Middlesex Fells, Sagamore, and Wellesley); MICHIGAN (Livingston County); MISSOURI (Kirkwood); NEW JERSEY (Glassboro, Lakehurst, and Moorestown); NEW YORK (Ithaca); NORTH CAROLINA (Southern Pines); OHIO (Put in Bay and Wayne County); ONTARIO (Go Home Bay); PENNSYLVANIA (Harrisburg and Shiremanstown); RHODE ISLAND (Westerly); SOUTH CAROLINA (Horry County); TEXAS (Brownsville and San Antonio); and VIRGINIA (Barcroft, East Falls Church, Falls Church, Mount Vernon, and Vienna).

Nearly all dates of capture fall between June 20 and July 31, indicating a single generation a year. Records outside of these dates are: May 21 and June 4 at Southern Pines, N. C.; May at Brownsville, Tex.; June 15 at Beltsville, Md.; August 2 at Falls Church, Va.; August 15 at Wellesley, Mass.; August 20 at Orlando, Fla.; and September 14 at Falls Church, Va.

This species occurs from the Atlantic States west to Michigan and Kansas, from the Tropical Zone to the warmer parts of the Transitional Zone. There is a single record from Ontario, Canada (Go Home Bay). Two specimens in the U. S. National Museum were reared as follows: ♂, Kirkwood, Mo., August 1939, *ex* oötheca *Parcoblatta pennsylvanica*; ♀, Vienna, Va., collected September 1936, emerged 1937, J. C. Bridwell, *ex* oötheca *Parcoblatta* sp.

3. *HYPTIA RETICULATA* (Say)

FIGURE 44, c

Brachygaster reticulata SAY, Boston Journ. Nat. Hist., vol. 1, p. 223, 1836; LeConte ed., vol. 2, p. 686. Type: Indiana (destroyed).

Hyptia nyctoides BRADLEY, Trans. Amer. Ent. Soc., vol. 34, p. 159, 1908. Type: ♂, Farmingdale, N. J. (Washington). New synonymy.

Hyptia prosetethetra BRADLEY, Trans. Amer. Ent. Soc., vol. 34, p. 160, 1908. Type: ♂, Tifton, Ga. (Washington). New synonymy.

Median hind corner of mesopleurum with a subcircular depression; femora black, mesoscutum in dorsal view about 0.75 as long as wide.

Forewing about 4.3 mm. long; punctures of frons somewhat confluent in transverse rows, the rows separated by about 0.33 the diameter of the punctures; seventh flagellar segment of male about 1.6 as long as wide, of female about 1.1 as long as wide; median part of pronotum as seen from above with a narrow upper face; mesoscutum in dorsal view about 0.75 as long as wide, its punctures mostly adjacent to one another; mesopleurum with an impression near its median posterior corner, its lower swollen part with scattered moderately large punctures (fig. 44, *c*); under side of hind femur with moderately dense fine punctures, its impunctate area extending from about its apical 0.35 to the apex; longer spur of hind tibia about 1.25 as long as the shorter spur and about 0.55 as long as the hind basitarsus; first tergite with moderately dense punctures and a suggestion of oblique striation.

Black or piceous. Tegula and apical part of mandible dark ferruginous; antenna and fore and middle legs somewhat tinged with ferruginous. Specimens with more or less ferruginous coloration, as noted under the generic description, comprise about 40 percent of those I have seen.

Say's description of *Brachygaster reticulata* would fit *Hyptia thoracica* or *H. harpyoides* as well as the present species except for his statement "petiole punctured." In both *thoracica* and *harpyoides* the petiole has distinct oblique striation as well as more or less distinct punctuation.

Specimens.—Many males and females from FLORIDA (Crescent City, near Everglade, Lakeland, Langford, Paradise Key, and St. Petersburg); GEORGIA (Bainbridge, DeWitt, Griffin, Okefenokee Swamp, Thomasville, and Tifton); LOUISIANA (Opelousas); MARYLAND (Glen Echo); MASSACHUSETTS (Holliston and Wellesley); MEXICO (Minatitlán and Tuxtepec); MICHIGAN (Midland County and Muskegon County); NEW YORK (Farmingdale, Fishers Island, and Flatbush); NORTH CAROLINA (Southern Pines); PENNSYLVANIA (near Philadelphia); TEXAS (Chisos Mountains in Brewster County); and VIRGINIA (Cape Henry, Falls Church, Hot Springs at Deer Lick Mountain, and Virginia Beach).

Collection records for the Northeastern United States fall in July and the first half of August, except for captures at Falls Church, Va., on September 4, and at Cape Henry, Va., on September 9. In Florida

the species appears on the wing late in April; there is a record for May at Opelousas, La., three for June 15 to 23 in southern Georgia, and one for June 1 at Southern Pines, N. C. At three Florida localities it was taken August 10, August 18, and August 22. This seasonal distribution indicates one generation a year in the North and perhaps two in Florida.

This species occurs from the Atlantic States west to Michigan and Kansas, from the Tropical and Lower Austral Zones to the warmer part of the Transition Zone. It has been collected also in southern Mexico.

4. *HYPTIA FEMORATA*, new species

FIGURE 44, *d*

Femora ferruginous; upper anterior part of mesopleurum with about three subcircular impressions as in figure 44, d.

Forewing about 4.0 mm. long; punctures of frons somewhat confluent in transverse rows, the rows separated by about 0.33 the diameter of the punctures; seventh flagellar segment of male about 1.3 as long as wide, of female about 1.1 as long as wide; median part of pronotum as seen from above with a very narrow upper face; mesoscutum in dorsal view about 0.74 as long as wide, its punctures separated by about 0.5 their diameter; mesopleurum with an impression in its median posterior corner, its ventral swelling with numerous large punctures (fig. 44, *d*); under side of hind femur with rather sparse coarse punctures, its impunctate area extending from near its basal 0.45 to its apex; longer spur of hind tibia about 1.2 as long as the shorter spur and about 0.48 as long as the hind basitarsus; first tergite with moderately fine oblique striae and some scattered punctures.

The type is colored as follows: Black. Mandible, scape, tegula, legs beyond coxae, and first tergite ferruginous, the hind tarsus and apex of hind tibia somewhat infusate. A paratype male from Uvalde, Tex., is colored like the type. A paratype male from Davis Mountains, Tex., is colored as the type, except that the mandible and scape are fuscoferruginous, the hind tibia and tarsus are piceous, and the apical part of the hind femur infusate. A paratype female is ferruginous with a large median basal fuscous spot on the second tergite, and the apical part of the abdomen and the hind leg beyond the trochanters weakly infusate.

Type.—♂, Chisos Mountains, Tex., July 9, 1936, J. N. Knull (Washington). U.S.N.M. No. 58749.

Paratypes.—♂, Davis Mountains, Jeff Davis County, Tex., June 29, 1942, H. A. Scullen (Corvallis). ♀, Davis Mountains, Jeff Davis

County, Tex., July 9, 1942, H. A. Scullen (Washington). ♂, Uvalde, Tex., June 18, 1920, Wickham (Cambridge).

5. *HYPTIA FLORIDANA* Ashmead

FIGURE 44, e

Hyptia floridana ASHMEAD, Can. Ent., vol. 33, p. 303, 1901. Lectotype hereby selected: ♂, Biscayne Bay, Fla. (Washington).

Mesoscutum about 0.54 as long as wide; forewing about 2.3 mm. long.

Forewing about 2.3 mm. long; punctures on frons tending to form transverse rows, the rows separated by about 0.6 the diameter of the punctures; seventh flagellar segment of male about 1.33 as long as wide, of female about 1.0 as long as wide; central 0.6 of mesoscutum reduced so that it is not visible from above; mesoscutum in dorsal view about 0.54 as long as wide, its punctures separated by about 0.5 their diameter; mesopleurum with an impression in its median posterior corner, its lower swollen part with only fine punctures or with a very few medium-sized punctures intermingled (fig. 44, e); under side of hind femur with small punctures, its impunctate area extending from near its middle to the apex; longer spur of hind tibia about 1.15 as long as the shorter spur and about 0.47 as long as the hind basitarsus; first tergite with moderately coarse oblique striae and scattered oblique punctures.

Black or piceous. Mandible, tegula, tibial spurs, and front and middle tarsi fulvous to brownish fulvous; front and middle legs more or less tinged with fulvous in the male, definitely fulvous in the female. In the female the scape, basal flagellar segments, and apical 0.4 of first tergite are more or less definitely fulvous. Two specimens from Guatemala and Panama have the head and thorax largely ferruginous.

Specimens.—♂, Jacksonville, Fla. (paratype, Washington). 2 ♂♂, 3 ♀♀, feeding on petiolar nodules of *Ricinus communis*, Miami, Fla., October 3, 1918 (Washington). ♀, Miami, Fla. (New York). ♂, De Witt, Ga., June 8, 1914, C. S. Spooner (Ithaca). ♀, Tallulah, La. (Washington). ♂, Concepción, 1,400 feet, Guatemala, C. N. Ainslie (Washington). ♀, Porto Bello, Panama, March 6, 1911, E. A. Schwartz (Washington).

6. *HYPTIA OBLONGA*, new species

FIGURE 44, f

Mesopleurum just below the oblique carina with oblique rugae; mesoscutum about 0.90 as long as wide.

Forewing 2.6 to 3.7 mm. long; punctures on frons separated by about 0.2 to 0.4 their diameter; seventh segment of flagellum of male

about 1.5 as long as wide, of female about 1.2 as long as wide; median part of pronotum as seen from above with a narrow upper face; mesoscutum in dorsal view about 0.90 as long as wide, its punctures separated by about 0.33 their diameter in larger specimens and by about 0.67 their diameter in smaller specimens; mesopleurum with an impression in its median posterior corner, with oblique ridges near its upper posterior margin, and in larger specimens with some large punctures on its lower swollen part (fig. 44, *f*); under side of hind femur with small and moderately small punctures, it impunctate area extending from about its middle to the apex; longer spur of hind tibia about 1.2 as long as the shorter spur and about 0.40 as long as the hind basitarsus; first tergite with scattered oblique punctures and a very fine sculpture that gives it an opaque glaucous surface.

Black or largely ferruginous. In a black specimen the mandible except basally, tegula, front tibia and tarsus, and middle tarsus are fulvous, and the apical 0.3 of first tergite is tinged with ferruginous. All specimens but one from Mexico have more or less extensive ferruginous coloration, as noted under the generic description.

Type.—♀, Huachuca Mountains, Ariz., July 20, 1937, D. J. and J. N. Knull (Washington). U.S.N.M. No. 58750.

Paratypes.—♀, Evergreen, Ala., August 2 (Washington). ♂, Spring Creek, Decatur County, Ga., July 16 to 29, 1912 (Ithaca). ♂, Suerre, Atlantic side, Costa Rica, July 20, 1923, A. Alfaro (Washington). ♂, Cuernavaca, Mexico, November 4, 1922, E. C. Smyth (Washington).