

DISTINGUISHING THE JUMPING SPIDERS
ERIS MILITARIS AND *ERIS FLAVA*
IN NORTH AMERICA (ARANEAE: SALTICIDAE)*

BY WAYNE MADDISON

Museum of Comparative Zoology,
Harvard University,
Cambridge, Massachusetts 02138

The jumping spiders now identified as *Eris marginata* are among the most frequently encountered in North America, for they are common on trees, shrubs and herbs throughout much of the continent. However, two species have been confused under this name. One is an abundant transamerican species whose proper name is *Eris militaris*; the other is *Eris flava*, widely distributed in eastern North America though common only in the southeast. In this paper I describe how they may be distinguished. The abbreviation MCZ refers to the Museum of Comparative Zoology; ZMB to the Zoologisches Museum, Humboldt-Universität zu Berlin.

Eris militaris (Hentz), NEW COMBINATION
Figures 2-7, 14

- Attus militaris* Hentz 1845: 201, pl. xvii, fig. 10♀, 11♂. Type material lost or destroyed (see Remarks, below), from North Carolina and Alabama. Neotype here designated, 1♂ in MCZ from North Carolina with label "NC: JACKSON CO., Coyle Farm, 1.5 mi SW of Webster, 7 Sept. 1975; F. Coyle."
- Plexippus albovittatus* C. L. Koch 1846: 118, fig. 1178♀. Syntypes in ZMB 1♀ with labels "P. albovittatus 1739" and "1739", and 1♀ with label "P. albovittatus ZMB 1739", examined. Type locality Pennsylvania (Koch, 1846). NEW SYNONYMY.
- Eris aurigera* C. L. Koch 1846: 189, fig. 1237♂. Syntypes in ZMB 1♂ with carapace and abdomen in alcohol with labels "Eris aurigera C. L. Koch*, 1774" and "Typus" and remaining body parts mounted on cover slip in small box with label "(Eris aurigera Koch*) Dendryphantes marginatus Walck., ZMB 1774a, D. militaris Hentz, XI, Syntypus" and 1♂ mounted on cover slip with label "Eris aurigera*, C. L. Koch, ♂ Rf.?, 1774b, Syntyp., Paraphidippus", both examined.
- Euophrys humilis* C. L. Koch 1846: 217, fig. 1262♀. Holotype 1♀ in ZMB with labels "Holotypus", "1804", "ZU 1804", "Euophrys humilis", "Pennsylvanien, Zimmernann leg.", "Zool. Mus. Berlin", examined.

Manuscript received by the editor January 15, 1986.

Icius albovittatus Keyserling 1884: 502, fig. 10♀. Syntypes 1♀ 1 immature in MCZ with labels "15 *Icius albovittatus* Keys., ♀ Massachusetts", "15", examined. (Junior homonym of *Icius albovittatus* Keyserling, 1883.)

Icius moestus Banks 1892: 77, pl. V, fig. 33♂. Holotype in MCZ 1♂ with labels "*Icius moestus* Bks", "*Dendryphantes moestus* Bks type", "Ithaca, N.Y.", "Nathan Banks Coll.", examined.

Dendryphantes marginatus:—Simon 1901: 624 (not *Attus marginatus* Walckenaer; see Remarks below).

Dendryphantes louisianus Chamberlin 1924: 34, fig. 51♀. Holotype in MCZ 1♀ with label "*Dendryphantes louisianus* Ch. ♀ Type, La.: Kenner, R. V. Chamberlin Coll.", examined.

Phidippus molinor Chamberlin 1925: 133, fig. 49♀. Holotype in MCZ 1♀ with label "*Dendryphantes molinor* Chamb., ♀ holotype, Utah: Mill Creek Canyon, R. V. Chamberlin Coll. 1071", examined.

Paraphidippus marginatus:—Chickering 1944: 180 (in part), figs. 78–82.

Paraphidippus marginatus:—Kaston, 1948: 479.

Eris marginata:—Kaston 1973: 118 (in part), figs. 51–54.

Remarks on synonymy: It is unfortunate that most workers since about 1930 have accepted without question Simon's (1901: 624) synonymy of *Attus militaris* Hentz 1845 with *Attus marginatus* Walckenaer 1837, for the synonymy is incorrect: Walckenaer's original description (p. 466) and Abbot's figure (number 444) clearly refer to *Hentzia palmarum* (Hentz). Walckenaer refers to an elongate abdomen, a fawn-brown first pair of legs, yellow posterior legs, and chelicerae elongate and held in front, whereas *Eris militaris* has an abdomen of typical width, posterior legs strongly marked with dark brown, and chelicerae robust and divergent. Abbot's drawing (see Figure 1), on which Walckenaer based his description of *A. marginatus*, unambiguously portrays a male *Hentzia palmarum*, given that his specimen was from Georgia. Because the name *marginatus* is inappropriate for the transamerican *Eris* species, another name must be used. The type material for the next oldest name, *Attus militaris*, is apparently lost or destroyed. Burgess (1875, vii) said that only 60 specimens glued on cards remained of Hentz's collections, the remainder having been destroyed. The surviving specimens were in the collection of the Boston Society of Natural History, which has subsequently become the Boston Museum of Science. The Museum of Science no longer has these specimens nor any record of them (D. Salvatore, pers. comm.), nor does the MCZ, which received many of the Society's collections. I presume Hentz's types to have been lost or destroyed. Without the type material the interpretation of *Attus militaris* is not entirely clear, for Hentz's

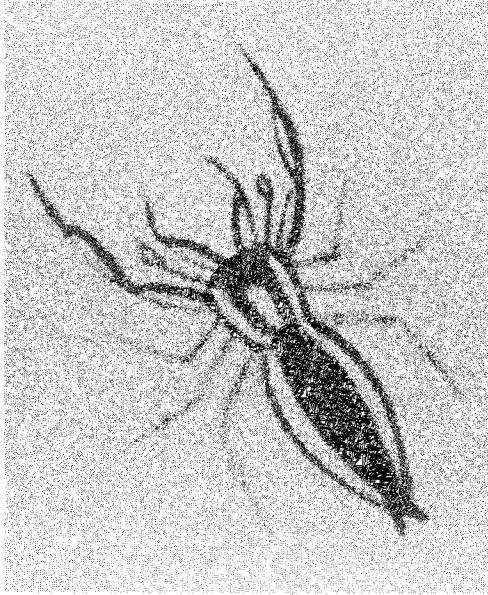
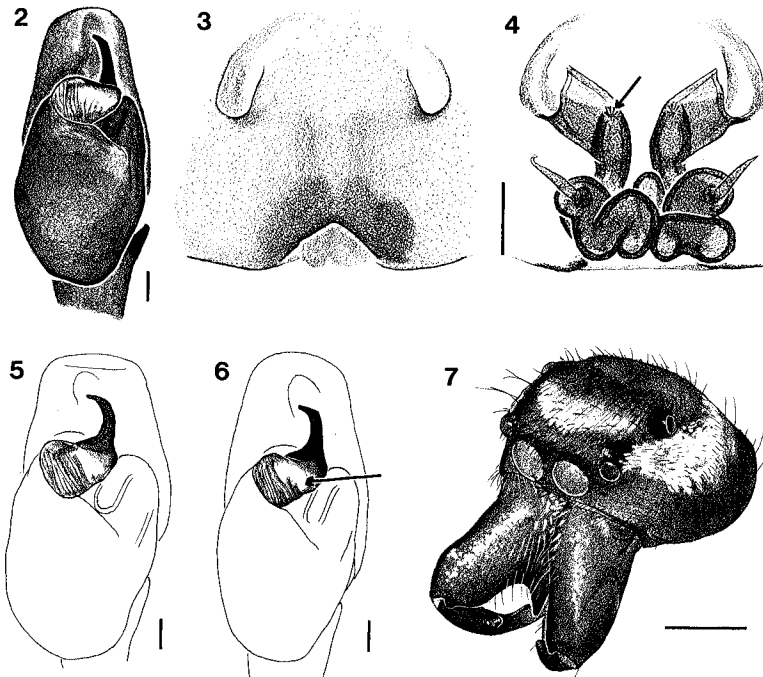


Fig. 1. Abbot's figure 444 on which Walckenaer (1837) based his description of *Attus marginatus*. Abbot's legend reads "444. Aranea. Taken 4th April, two upon a Myrtle on the side of a Pond in the Oak Woods of Burke County. Rare." From a color slide taken by Allen Brady of Abbot's (1792) original in the British Museum (Natural History).

1845 description might refer to either the transamerican or the eastern species. Still, his failure to describe a white marginal band in the male, and his illustration showing a dark femur on the male palp (better seen in his original color drawing) both suggest that he had the transamerican species. Therefore, I have designated a male of this species as neotype for *Attus militaris*. This is advantageous for nomenclatural stability, for Hentz's name was the only name commonly used before 1930 for the abundant transamerican species. In contrast, I have been unable to find any use of Koch's names *albo-vittatus*, *aurigera*, and *humilis* since 1864, except in synonymies and catalogues.

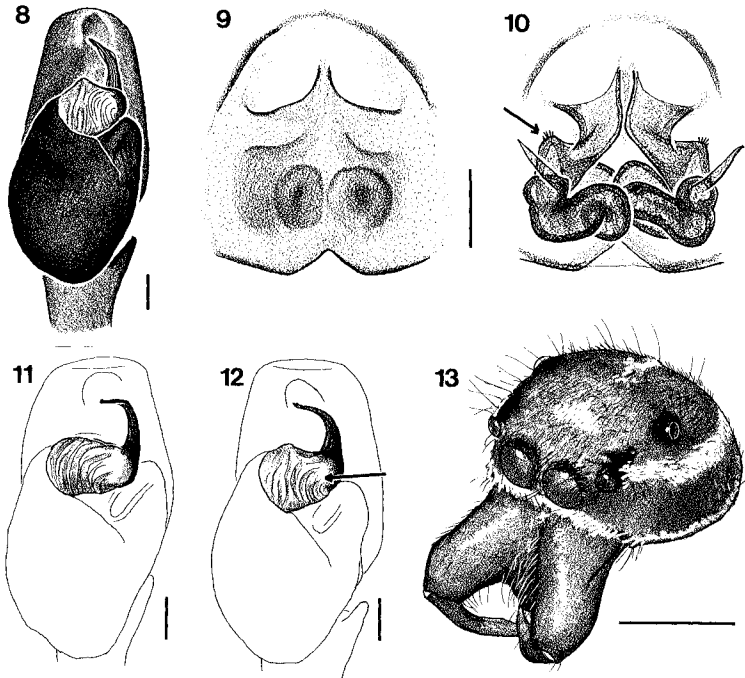
Male carapace margin and clypeus brown (Fig. 7), without white scales, or if the clypeus has white scales, then they only rarely extend along margin past palps. Longitudinal white bands extending back



Figs. 2-7. *Eris militaris* 2. Left palp, ventral view (Port Elgin, Ontario). 3. Epigynum, ventral view (Dwight, Ontario). 4. Cleared epigynum, dorsal view (Dwight, Ontario); arrow shows flowerlike gland opening. 5. Left palp, oblique view from the ventral-retrolateral-distal (Pine Lake, Michigan), and 6. Same (Forsyth, Georgia); arrow shows lack of wrinkles on retrolateral half of embolar base. 7. Male carapace and chelicerae (Walloon Lake, Michigan), oblique view. Scale bars 0.1 mm for 2-6; 1 mm for 7.

from anterior lateral eyes usually broad. *Palp* femur and patella as dark as the more distal segments. *Embolus* shorter and stouter, and more broadly joined to the embolar base (Figs. 5, 6) than in *flava*. Wrinkles on the ventral surface of the embolar base usually straight, and absent from the retrolateral half (Figs. 2, 5, 6; see arrow in Fig. 6).

Female carapace generally with a continuous covering of white scales above margin beneath anterior lateral eyes. *Epigynal openings* usually smaller and more laterally facing (Fig. 3) than in *flava*.



Figs. 8-13. *Eris flava* 8. Left palp, ventral view (Florida City, Florida). 9. Epigynum, ventral view (Point Pelee, Ontario). 10. Cleared epigynum, dorsal view (Point Pelee, Ontario); arrow shows flowerlike gland opening. 11. Left palp, oblique view from the ventral-retrolateral-distal (Pine Lake, Michigan), and 12. Same (Florida City, Florida); arrow shows curled wrinkles on retrolateral half of embolar base. 13. Male carapace and chelicerae (S. of St. Joseph, Michigan), oblique view. Scale bars 0.1 mm for 8-12; 1 mm for 13.

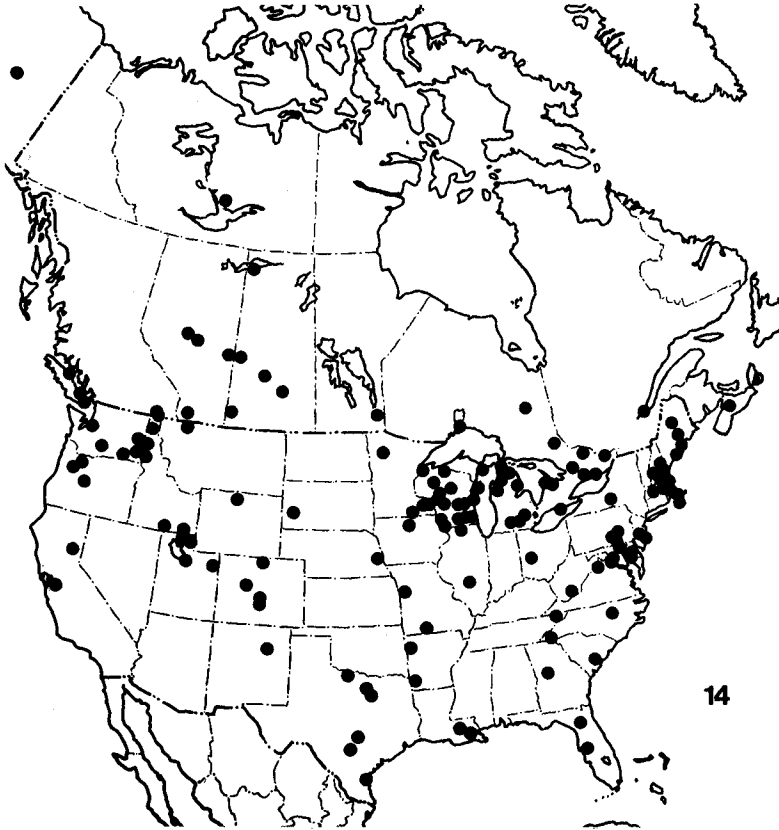
Each duct proceeds medially to a flower-like structure (apparently gland openings; see arrow in Fig. 4), then posteriorly.

Habitat varied; common on trees and shrubs. Distribution shown in Fig. 14.

Eris flava (Peckham and Peckham)

Figures 8-13, 15

Dendryphantes flavus Peckham & Peckham 1888: 39, pl. I, fig. 27♀, pl. III, figs. 27, 27a♀. Syntypes in MCZ 3♀, 1 immature ♀ with label "*Dendryphantes flavus*



14

Fig. 14. Distribution of *Eris militaris*.

Pkm., 1888. New York. Type. ♀", examined. Type vial also contains one immature *Phidippus*.

Dendryphantes armatus Banks 1909: 167, fig. 5♂. Syntypes in MCZ 7♂ with labels "S. de las Vegas, Cuba 10-17. 07", *Dendryphantes armatus* Bks.", "type", "D. militaris H. armatus B, Cuba", "Nathan Banks Coll.", examined. NEW SYNONYMY.

Paraphidippus militaris:—Bryant 1940: 502.

Paraphidippus marginatus:—Chickering 1944: 180 (in part).

Eris marginata:—Kaston 1973: 118 (in part).

Eris flava:—Kaston 1973: 120, figs. 66-67.

Remarks on synonymy: *Eris flava* was thought to be an uncommonly collected species known only from females (Kaston, 1973).

While less common than *militaris*, many males are available in collections (including the Peckham and Banks collections), identified as *militaris* or *marginata*. Chickering's Michigan collections are mixed *E. militaris* and *E. flava*. Though most of Kaston's identifications were correct, at least some Floridian males he identified as *E. marginata* prior to his 1973 paper are *E. flava*.

Male carapace with marginal band of white scales extending across clypeus (Fig. 13) and usually back well past the palps. Longitudinal white bands extending back from ALE usually narrower than in *militaris*. *Palp* femur and often patella distinctly paler than more distal segments. *Embolus* longer and thinner than in *militaris*, arising more abruptly and more directly behind the embolar base (Figs. 11, 12). Wrinkles on embolar base, especially the more retrolateral ones, are distally curled retrolaterally (Figs. 8, 11, 12; see arrow in Fig. 12).

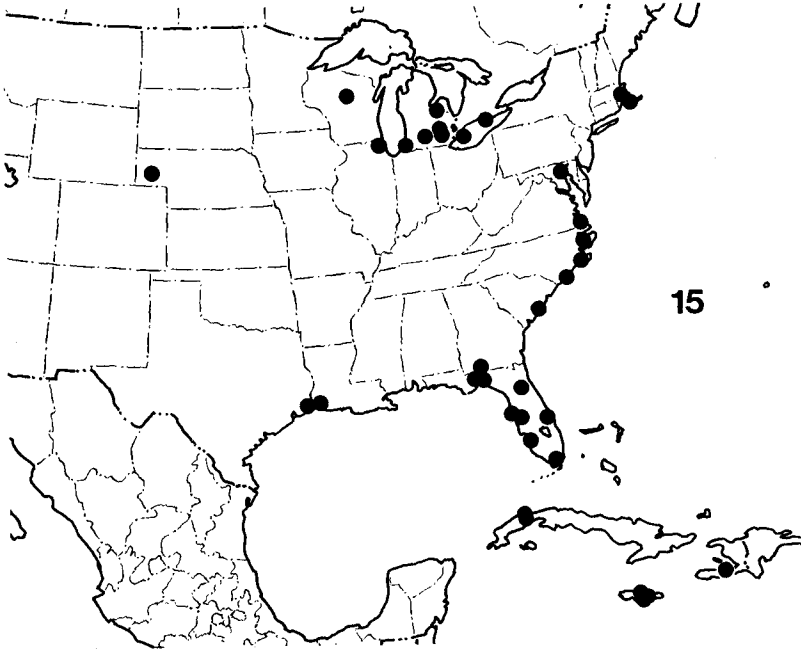


Fig. 15. Distribution of *Eris flava*. The specimen from the North Platte River at Bridgeport, Nebraska was collected by me, and the identification checked carefully.

Female carapace with patch barren of scales just above the marginal white band at a point below anterior lateral eyes. *Epigynal openings* wider and face more anteriorly (Fig. 9) than in *militaris*. Each duct first proceeds posteriorly and then laterally to the flower-like structure (Fig. 10, arrow), then posteriorly. The epigynal ducts are the best distinguishing feature.

Habitat information is sparse, but the species appears to prefer marshes and fields. Found in cedar swamp (Mass.), sweeping grass and herbs near river (Nebr.), on vegetation in marshy area (Ont.), meadow (Ill.), on *Nelumbo lutea* and in fields (Fla.). Distribution shown in Fig. 15.

ACKNOWLEDGEMENTS

All but a few of the specimens examined are in the MCZ. The types of Koch names were kindly loaned by M. Moritz and S. Fischer of the ZMB. For the loan of the remaining specimens, I thank E. Schlinger and D. Wagner (Essig Museum, University of California, Berkeley) and W. J. Gertsch (American Museum of Natural History). H. W. Levi and D. R. Maddison gave useful comments on the manuscript.

REFERENCES

- ABBOT, J.
1792. Drawings of the Insects of Georgia, in America, vol. 14, Spiders. Unpublished manuscript in the British Museum (Natural History) (Copy seen).
- BANKS, N.
1892. The spider fauna of the Upper Cayuga Lake Basin. Proc. Acad. Nat. Sci. Philadelphia, 1892: 11-81, 5 pl.
1909. Arachnida of Cuba. Estación central agronómica de Cuba, Second Report, Part II, pp. 150-174.
- BRYANT, E. B.
1942. Cuban spiders in the Museum of Comparative Zoology. Bull. Mus. Comp. Zool., **86**: 259-532+22 pl.
- BURGESS, E.
1875. Preface, pages v-xiii, in A collection of the arachnological writings of Nicholas Marcellus Hentz, M. D., Boston Soc. Nat. Hist.
- CHAMBERLIN, R. V.
1924. Descriptions of new American and Chinese spiders, with notes on other Chinese species. Proc. U.S. Nat. Mus., **63**(13): 1-38.
1925. New North American spiders. Proc. California Acad. Sci., (4) **14**(7): 105-142.

CHICKERING, A. M.

1944. The Salticidae (jumping spiders) of Michigan. Papers Michigan Acad. Sci., Arts & Letters, **29**: 139-222.

HENTZ, N. M.

1832. On North American spiders. American J. Sci., **21**: 99-122.
1845. Descriptions and figures of the Araneides of the United States. Boston J. Nat. Hist., **5**: 189-202.

KASTON, B. J.

1948. Spiders of Connecticut. Connecticut State Geol. and Nat. Hist. Survey, **70**: 1-874.
1973. Four new species of *Metaphidippus*, with notes on related jumping spiders (Araneae: Salticidae) from the eastern and central United States. Trans. Amer. Micros. Soc., **92**: 106-122.

KOCH, C. L.

1846. Die Arachniden. Dreizehnter Band. Nürnberg, pp. 1-234.

PECKHAM, G. W. AND E. G. PECKHAM

1888. Attidae of North America. Trans. Wisconsin Acad. Sci., Arts & Letters, **7**: 3-104.
1909. Revision of the Attidae of North America. Trans. Wisconsin Acad. Sci., Arts & Letters **16**: 355-646.

SIMON, E.

1901. Histoire Naturelle des Araignées. Deuxième édition. Tome 2, fasc. 3, pp. 381-668. Paris.

WALCKENAER, C. A.

1837. Histoire naturelle des Insectes. Aptères. Tome 1. Paris, pp. 1-682.



Hindawi

Submit your manuscripts at
<http://www.hindawi.com>

