A REVISION OF THE GENUS ZORA
(ARANEAE, ZORIDAE) IN NORTH AMERICA

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Abstract. The genus Zora C.L. Koch, 1848 in North America includes two species: Zora pumila (Hentz) and Zora hespera new species. Diagnoses, descriptions, distributions, and natural history notes are presented.

The genus Zora consists of small to medium entelegyne, ecribellate spiders. They may be recognized by having two claws with claw tufts, distinct longitudinal bands on the cephalothorax, 4-2-2 arrangement of the eyes and a series of long overlapping spines on the first two tibiae and metatarsi. The color pattern on the abdomen is distinct and, in unfaded specimens, may be useful in distinguishing the species.

The 17 species in the genus have a Holarctic distribution with most of the species reported from Europe and the Middle East. One species is cited from the United States. Neither the genus nor the family has been revised.

Zora has been placed in the Lycosidae (Dahl & Dahl 1927), the Ctenidae (Petrunkevitch 1928; Homann 1947), the Clubionidae (Kaston 1948) and the Zoridae (Dahl 1912; Tullgren 1945; Lehtinen 1967; Kaston 1981). Currently several other genera, whose relationships are debatable, are also placed in the Zoridae.

METHODS

Specimens were examined and measured under a stereo dissecting microscope with an ocular micrometer mounted in one eyepiece. Micrometer units were converted to metric units and these rounded to the nearest 0.01 mm. Drawings were made with the aid of a squared-grid reticle in one eyepiece of the dissecting microscope. A total of 172 specimens was examined. Epigyna were removed and cleared in clove oil.

Abbreviations for eyes: are as follows: AME (anterior median eye), ALE (anterior lateral eye), PME (posterior median eye), PLE (posterior lateral eye), MOQ (median ocular quadrangle). Dimensions are given in the form: range, mean (X) and standard error (SE).


Genus Zora C. L. Koch, 1848

Lycaena Sundevall, 1832:265. Type species by monotypy, L. spinimana Sundevall. Preoccupied.

Hecaerge Blackwall, 1833:193. Type species Lycaena spinimana (Sundevall). Preoccupied.

Lycodia (lapsus ?) Sundevall, 1833:22.

Dolomedes Walckenaer, 1837:348. (part) (3e race: Rupiariae).

Zora C. L. Koch, 1848:91. Type species Lycaena spinimana Sundevall.

Psilothra Gistel, 1848: IX. Proposed replacement for Hecaerge, preoccupied.

Katadysas Hentz, 1850:287. Type species by monotypy K. pumilus Hentz.

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Katadysas Hentz, 1850:287. Type species by monotypy K. pumilus Hentz.

Katadysas Thorell, 1869:43. Emendation of Katadysas Hentz.

Diagnosis.—Zora can be distinguished from most other eight-eyed spiders by the nearly straight anterior eye row, and the strongly recurved posterior eye row, the eyes forming three rows. They have 2 claws with claw tufts. The presence of 6-8 pairs of long, overlapping spines on tibiae I and II separate them from the Ctenidae and Lycosidae.

Description.—Small spiders with a general orange-brown color. A wide band extending back from each posterior lateral eye (Figs. 5, 11). A marginal band on each side of the cephalothorax. Carapace highest in the region of thoracic groove.
Figures 1-7.—Z. pumila: 1, 2, male palpus; 1, retrolateral aspect; 2, ventral aspect; 3-7, female; 3, tibia and metatarsus leg I; 4, chelicerae; 5, dorsal view of female; 6, 7, epigynum; 6, dorsal aspect, cleared; 7, ventral aspect.
Sternum with a dark spot near each coxa (Fig. 10). Labium wider than long. The legs heavily spotted, leg IV longest, followed by I, II, III. Tarsi with 2 claws and tufts. Tibiae I and II with 6-8 pairs of long, overlapping ventral spines. Metatarsi I and II with 2-3 pairs of long, overlapping ventral spines. Palpal tarsus of females and juveniles with a pair of ventral spines. Retromargin of chelicerae usually with two teeth, promargin usually with 3 teeth. Apical segment of the posterior spinnerets short and indistinct.

**Distribution.** — Holarctic. Specimens have been reported from Mexico and Brazil by Marx (1890) under the nomina nuda *Zora californica* and *Z. latithorax*. The localities are likely to be in error.

**Zora pumila (Hentz)**

*Katadysas pumilus* Hentz, 1880:287, plate X, fig. 16, 1 male imm. Type destroyed.

*Catadysas pumilus* Thorell, 1869:43.

*Zora pumila* Holmberg, 1882:156.

*Z. spinimana* Emerton, 1911:403, plate V, figs. 5a-5b, 1 female. Not *Z. spinimana* (Sund.)

*Z. pumilus* Comstock, 1912:403, fig. 651; 1940:587. fig. 651.

**Diagnosis.** — Males of *Z. pumila* are distinguished from males of *Z. hespera* by the larger palp, and the angular conductor (Fig. 2). Females have sperm ducts coiled anterior to the spermathecae (Fig. 6). *Zora pumila* has been confused with the European *Z. spinimana* (Sund.). Examination of specimens of *Z. spinimana* showed that they are distinct. The tibial apophysis of the male palp of *Z. spinimana* and *Z. nemoralis* (Blackwall) has a broad base and is bent distally. The distal end of tibial apophysis in *Z. spinimana* is bifurcate and in *Z. nemoralis* it is truncate. In female *Z. spinimana* the receptacles are closer together than in *Z. pumila* and *Z. hespera* and the sperm ducts turn forward and parallel with the long axis of the body at their anterior end. The course of ducts in *Z. nemoralis* is different from *Z. pumila* and *Z. hespera*.

**Description.** — A wide marginal band on each side of cephalothorax, wide paramedial band extending back from each posterior median eye and a thin Y-shaped mark on abdomen. Legs heavily spotted. Chelicerae as in Fig. 4.

**Males:** Measurements of 10 specimens (mm).

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**Material examined.** — USA: *Alabama*; Lee Co., Auburn (N. Banks), immature (MCZ); Madison Co., Monte Sano, December 1940 (A. F. Archer).
immature (AMNH). Connecticut; Middlesex Co., Killingworth, 23 June 1935 (B. J. Kaston), 3 females, immature (USNM); New Haven Co., vicinity of Norwalk, 2 July 1933 (W. Ivie), female, immature (AMNH), Norwalk, August 1933 (W. Gertsch), female (AMNH), Seymour, 30 May 1965 (J. & W. Ivie), female, 2 immature (AMNH).

Florida; Orange Co., Univ. of Central Florida Campus, May 1983 (D. T. Corey), female (USNM).

Figures. 8–14.—Z. hespera: 8, 9, male palpus; 8, retrolateral aspect; 9, ventral aspect; 10-14, female; 10, sternum; 11, dorsal view of female; 12, chelicerae; 13, 14, epigynum; 13, dorsal aspect, cleared; 14, ventral aspect.
Zora hespera, new species
Figs. 8-14, Map 1

Types. — Female holotype from east of Pollock Pines, El Dorado Co., California, in a pine forest, 25 June 1953 collected by V. Roth. In American Museum of Natural History.

Etymology. — Name is derived from the Latin word for west.

Diagnosis. — Males and females can be distinguished from Z. pumila by the genitalia (Figs. 1, 2, 6, 9, 13, 14). Conductor of male rounded anteriorly. Sperm ducts in female S-shaped. See Z. pumila for differences between Z. hespera and Z. spinimana and Z. nemoralis.

Description. — Narrow marginal band on each side of the cephalothorax. Wide paramedian band extends back from each posterior median eye. Wide, lateral, longitudinal light colored bands on the abdomen. Chelicerae as in Fig. 12.

Males: Measurements of 3 specimens (mm).
Total length 2.80-3.14 (2.95, 0.12). Carapace length 1.40-1.62 (1.27, 0.08), width 1.24-1.32 (1.27, 0.03). Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.06, PLE 0.08; AME-AME 0.05, AME-ALE 0.04, PME-PME 0.08, PME-PLE 0.11, ALE-PLE 0.16. MOQ length 0.14-0.26 (0.22, 0.05), front width 0.16-0.18 (0.17, 0.01), back width 0.24. Clypeus height 0.06. Chelicera length 0.36-0.42 (0.38, 0.02), width 0.20-0.22 (0.21, 0.00). Total lengths of legs: I: 4.00-4.48 (4.49, 0.69), II: 3.80-4.72 (4.26, 0.65), III: 4.58 (N=1), IV: 5.32-5.98 (5.65, 0.46). Total length of palp 1.64-1.74 (1.68, 0.04). Leg spineation, tibiae I and II with 6-7 pairs of long, overlapping ventral spines, metatarsi I and II with 2 pairs of long, overlapping ventral spines.

Females: Measurements of 10 specimens (mm).
Total length 3.54-6.79 (4.77, 0.37). Carapace length 1.53-2.13 (1.88, 0.07), width 1.23-1.72 (1.51, 0.05). Eye sizes and interdistances AME 0.08, ALE 0.08, PME 0.10, PLE 0.10; AME-AME 0.05, AME-ALE 0.08, PME-PME 0.10, PME-PLE 0.13, ALE-PLE 0.18. MOQ length 0.28-0.36 (0.31, 0.01), front width 0.18-0.26 (0.23, 0.01), back width 0.28-0.36 (0.31, 0.01). Clypeus height 0.08-0.13 (0.10, 0.01). Chelicera length 0.44-0.67 (0.56, 0.02), width 0.20-0.42 (0.30, 0.02). Total lengths of legs: I: 4.03-6.28 (5.21, 0.22), II: 4.56-5.82 (4.97, 0.15), III: 3.97-5.69 (4.58, 0.17), IV: 5.36-7.36 (6.48, 0.17). Total length of palp 1.56-2.17 (1.89, 0.08). Leg spineation, tibiae I and II with 6-7 pairs of long, overlapping ventral spines, metatarsi I and II with 2 pairs of long, overlapping ventral spines.


(AMNH), Sugarloaf Ridge State Park, Bald Mt. Trail (450m), 20 November 1982 (V. F. Lee), immature (CAS); Yolo Co., 5.4 mi. SW of Winters, 29 May 1939 (FCR, LMS, ROS), immature (AMNH), 23 April 1959 (F. C. Ramey), 2 females (AMNH). Idaho; Adams Co., 7 mi. NE of Council, 17 October 1944 (W. Ivie), immature (AMNH); Idaho Co., Clearwater Creek near Kooskia, 23 August 1940 (W. Ivie), female, immature (AMNH). Oregon; Benton Co., W of Corvallis, 20 March 1937 (JCC), female (AMNH); Columbia Co., Goble, 22 March 1938, female (AMNH), 23 April 1938, female, male, immature (AMNH); Coos Co., Charleston, 17 June 1952 (B. Malkin), male (AMNH); Josephine Co., Grave Cr., 30 May 1952 (V. Roth), female (AMNH); Lane Co., 8 mi. S of Divide Guard Sta., 27 July 1955 (V. Roth), female (AMNH); Marion Co., St. Benedict, 2 May 1954 (J. Roth), male (AMNH); Yamhill Co., Peavine Ridge, near McMinnville, November-December 1946 (K. M. Fender), female, 7 immatures (AMNH). Washington; Yakima Co., Tieton River, about 10 mi. E of Rimrock, 13 September 1965 (J. & W. Ivie), immature (AMNH).

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LITERATURE CITED


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