

On a Collection of Centipedes from Wisconsin (Chilopoda)

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The following records constitute one of the two known faunal reports on the significant and polyglot chilopod population of Wisconsin.¹ It has been made possible through the energy and generosity of Dr. and Mrs. Herbert W. Levi of the Museum of Comparative Zoology at Harvard. I should like to express my gratitude to them for the sizable collection of carefully preserved specimens of which most of the present localities are representative.

Though this report is admittedly fragmentary and introductory, in my estimation it still suggests at least that the state supports a rather versatile fauna, more versatile than the midwestern states' immediately to the south. This is apparent from the coexistence in Wisconsin of typical Austral and Transitional species, the latter evidently more prevalent than the former. For example we find such cold-adapted forms as *Escaryus urbi-cus*, *Lithobius forficatus*, and *Taiyubius harrietae* but also such Austral species as *Arenophilus bipuncticeps* and *Sozibius* sp., the advance of the latter no doubt being encouraged by the same edaphic and particularly climatic conditions that support the extension of the midwestern prairie into the extreme southeastern counties.

In the ensuing discussion collection stations are identified by a formula following each species name. A capital letter refers to a county, and the associated number to a locality within that county. The list of counties below is arranged as they occur from north to south: an asterisk indicates a Levi collection, the absence of one that the record is drawn, instead, from the literature.

¹ An earlier report is D. C. Matthews' unpublished doctorate thesis, "The Chilopoda of Wisconsin," The University of Wisconsin, Thesis, 1935.

A. ASHLAND: 1—Ashland. **B. MARINETTE:** 1—Marinette. **C. LANGLADE:** 1—Antigo. **D. BARRON:** 1—Haugen. **E. EAU CLAIRE:** 1—Eau Claire. **F. CLARKE:** 1—Neilsville, 12 miles southeast of. **G. BUFFALO:** 1—Fountain City, 10 miles east of. **H. JACKSON:** 1—Merrillan. **I. PORTAGE:** 1—Coddington, 3 miles east of. **J. WAUPACA:** 1—Waupaca. **K. LA CROSSE:** 1—La Crosse, 8 miles southeast of. **L. MONROE:** 1—Portland, 4 miles south of. **M. SHEBOYGAN:** 1—Cedar Creek. **N. COLUMBIA:** 1—Okee, 1 mile southwest of; 2—Prairie du Lac, 1 mile east of; 3—Columbus. **O. SAUK:** 1—Baxter's Hollow; 2—Devil's Lake State Park; 3—Eagle Bluffs, 5 miles southwest of Sauk City; 4—Parfrey's Glen; 5—Baraboo at Devil's Lake. **P. VERNON:** 1—Wildcat Mountain State Park. **Q. CRAWFORD:** 1—Wauzeka, 8 miles east of; 2—Wauzeka; 3—Hartwick Pines. **R. GRANT:** 1—Wyalusing State Park. **S. IOWA:** 1—Dodgeville, 7 miles northwest of; 2—Gibraltar Rock near Dodgeville; 3—Clyde, 3 miles southeast of. **T. DANE:** 1—Madison; 2—Cross Plains. **U. ROCK:** 1—Janesville; 2—Beloit. **V. WALMOUTH:** 1—Delavan.

GEOPHILOMORPHA

Schendyla nemorensis (C. L. Koch). [T-1*]. Two males, each with 41 pairs of legs, were captured in leaf litter. This tiny schendylid, which is quite common in western Europe, is now known to be widespread east of the Mississippi River where it prefers the colder, wetter winters of the more northern states. Both this and the next species show a remarkable tolerance to cold; I have found both in the vicinity of Ithaca, New York under snow-covered stones during brief February thaws.

Escaryus urbicus (Meinert). [O-1*]. A single male with 41 pairs of legs was found. To date this species has been recorded from a few localities in Massachusetts, New York, and montane Virginia, but west of the Appalachians it had been known only from Ohio and Minnesota. Such records, however fragmentary, suggest a distribution in the colder or mountainous parts of the northeastern North American continent.

Arenophilus bipuncticeps (H. C. Wood). [T-1*, U-1]. A male with 59 and a female with 67 pairs of legs were collected at Madison. The presence of what is probably our most widespread Austral geophilomorph in southern Wisconsin points to an extension of elements of the midwestern fauna northward into this region. In the extreme east it extends up the Atlantic seaboard through Long Island even as far as maritime Massachusetts, though its presence inland has never been demonstrated. Perhaps the shorter growing season and colder winters preclude its invading New York north of New York City and interior and upper New England. The peculiar tendency of this animal, when disturbed, often to retreat *backwards* at some speed has proved a good field character: I have detected this remarkable behavior in no other eastern North American geophilomorph.

Geophilus vittatus (Raf.) [*olim G. rubens* Say]. [C-1, J-1*, L-1*, O-2*-3*, P-1*, R-1*, S-1*, T-1*, V-1]. Numerous specimens were collected throughout the southern two-thirds of the state. More abundant and more widely-dispersed than any other centipede in Wisconsin, *vittatus* similarly is probably the most ubiquitous and commonly-encountered chilopod in North America east of the Rocky Mountains. It has been recorded from New England to Nebraska and Arizona, though in the extreme south it appears to prefer the higher, hence more temperate, elevations. A field I have found it typically under tree bark, where the females may be found brooding their eggs and young in the spring and early summer, but it seems distinctly less common under stones and debris on the ground.

Strigamia chionophila H. C. Wood [*sensu lat.*]. [A-1, F-1*, K-1*, O-1*-2*-4*-5, P-1*, Q-2*, R-1*, S-1*-3*, T-1*]. Research nearing completion at the present time shows that at least three sibling species have been referred to the Wood name in the past; consequently to keep confusion at a minimum pending publication of these studies, I am assigning all of the Wisconsin specimens provisionally to *chionophila*. Members of at least two species of this complex were found to be quite prevalent in the state, each locality yielding a number of specimens from leaf litter.

Strigamia bothriopa H. C. Wood [*sensu stricto*]. [H-1*, O-1*-2*-3*, P-1*, Q-1*, R-1*, T-1*-2*]. Until recently² this striking crimson centipede was considered a junior synonym of *Linotaenia* (= *Strigamia*) *fulva* Sager, and since *bothriopa* is by far the commoner and more widespread of the two, existing statements of distribution are highly misleading. Wood's form, though present in parts of the south and midwest, is particularly abundant in the north and at higher elevations throughout its range. On the basis of Levi's collections, it appears to be almost as common as *Geophilus vittatus* (q.v.) in Wisconsin. Unlike this species, *bothriopa* seems to prefer living close to the ground. In New York State I have found it almost always under stones and debris, and quite often in leaf litter.

Taiyuna opita Chamberlin. [G-1*, N-1*, O-1*-4*, R-1*, S-3*, T-1*]. Heretofore this tiny chilophiline was known only from the type localities "Posers and Kimball's" [sic] in Michigan. Consequently it is of some interest to find it fairly widespread and evidently common in leaf litter in a neighboring north midwestern state. On the basis of our information to date, it is apparently absent to the south and east of Michigan, though additional records should be anticipated at least in Iowa and Minnesota and possibly in adjacent Canada. The known distribution of the genus is interesting, for apart from the midwestern *opita*, its species are common only to Arizona, California, and British Columbia. All of the Wisconsin specimens are females, each with 41 pairs of legs.

SCOLOPENDROMORPHA

Scolopocryptops rubiginosa L. Koch [*olim Otocryptops rubiginosus*]. [O-1*, R-1*]. Only two specimens were taken. The species is known from eastern Asia, from Alaska, and from most of the more northern midwestern states of this country (i.e., from Ohio through Nebraska and northern Missouri through Minnesota), thus suggesting a great arc from Asia across the Bering Straits and down into middle North America. So far as is known, it is absent west of Nebraska, in the south.

² Crabill: in Ent. News, 65(2): 40-46, (1954).

and in the states east of Ohio. It may be significant that the closely-related *sexspinosa* (Say) is extremely common in the latter areas east of the Rocky Mountains.

LITHOBIOMORPHA

Lamyctes fulvicornis (Meinert). [A-1, D-1, E-1, T-1*, U-2]. A single female was captured in Madison. This cosmopolitan hemicopid has been cited often for its striking ability to acclimate itself to a variety of environments. It has been recorded from most of the more northern United States east of the Rocky Mountains, from Europe where it is evidently widespread, and from such unlikely places as the Arctic Circle in Canada, and New Zealand. In the eastern United States it seems almost limited to sites in or near our cities and towns, which is in accord with the virtual certainty that it has been introduced repeatedly into this country from Europe and elsewhere. I have found this and other hemicopids quite commonly upon fairly moist, *sandy* soils, especially close to waterways in Transitional eastern North America.

Bothropolys multidentatus (Newport). [Q-3*]. The presence of but a single specimen of this extremely familiar and typically dendrophilous northeastern ethopolyine in the Wisconsin collection is not so odd when one recalls that the Levi material was taken largely from leaf litter. This handsome species is usually readily encountered throughout its range, which extends from Maine west to Missouri and south to higher elevations in the Gulf states.

Lithobius forficatus (Linne). [G-1*, J-1*, M-1*, T-1*; published accounts stress its abundance throughout the state]. Numerous collections, representing nearly all stages of both sexes, were made in the localities given above. A widespread European form, *forficatus* has undoubtedly been introduced into the United States repeatedly, probably since colonial times, so that today its presence in or near most areas of human traffic cannot be doubted. It is interesting that the species is rarely found at any great distance from places of human activity, even when such areas are known to be capable of supporting a dense

and varied lithobiid fauna. Consequently in our northern woods it is replaced by the dominant *Bothropolys multidentatus*, and, as Chamberlin pointed out long ago, in the south of the United States it is replaced by the several species of *Ncolithobius* which, despite a superficial similarity of general habitus, are not very closely related to the European form.

Nadabius holzingeri (Bollman). [H-1*, N-1*-2*, O-1*-4*-5*, R-1*, S-1*-2*]. Each of these localities yielded a few specimens assignable to *holzingeri*. This form is clearly more closely allied to *iovensis* than to anything else, the two differing in one or two rather unconvincing features. There is the good likelihood that future research will show *holzingeri* to be a variant of *iovensis*. Bollman's species has been reported from southeastern Minnesota, from Wisconsin, and from Indiana.

Nadabius iovensis (Meinert). [B-1, D-1, F-1*, G-1*, I-1*, O-3*, P-1*, R-1*, S-1*, T-1*, U-2]. Numerous specimens, representing both sexes and all stages of post-anamorphic development, were collected. The species, a hallmark of the mid-western lithobiid fauna, ranges from Idaho [?] east to Ohio and south to Tennessee. It seems completely replaced in the Appalachians by *aristeus* and *pullus*, and in New York and New England by *aristeus* alone.

Sozibius sp. [T-1*]. The poor condition of the single male does not permit further identification.

Taiyubius harriellae (Chamberlin). [T-1*]. The Levis collected one male at Madison. Originally described from Colorado, this distinctive form now has been reported from Nevada, from Wisconsin, from Ithaca, New York, and from eastern Massachusetts—a most remarkable distribution for a North American lithobiid. Perhaps the poverty of records is due to our failure to detect the presence of the species, which may be dependent upon narrowly restrictive environmental conditions. For instance, at Ithaca I have never failed to find specimens but only on non-sandy soil in a very cool, damp ravine through which Cascadilla Creek flows. Despite intensive searching, no other local site yielded a single specimen. On the basis of its

distribution it seems safe to predict its eventual discovery throughout the colder northeastern states.

Tidabius sp. [T-1*]. One specimen was captured, but its condition makes specific identification impossible. It is probably either *tivius*, which Chamberlin reported from Janesville, or *opiphilus*, known only from the type locality at Beloit.

SCUTIGEROMORPHA

Scutigera colcoptata (Linne) [*olim Scutigera forceps* (Raf.)]. [N-3*, T-1*]. Ten specimens were collected. This common domiciliary species, which has been introduced from Europe, should be expected through the United States in, or occasionally near, human habitations.

Some Robber Flies (Diptera: Asilidae)

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This paper presents the descriptions of some miscellaneous species and genera of Asilids.

CHYMEDAX, new genus

Type of genus: *Chymedax delicatulus*, new species.

Minute, slender Asilids belonging to the Laphriinae. Characterized by the presence of only 4 posterior cells. Third antennal segment with a small microsegment at apex, more slender than the third segment, and above it, rising from the third segment there is a small, bristle-like spine. Related to *Despotiscus* Bezzi. Length 6.5 mm.

Head: The head is comparatively long and quite convex anteriorly; face visible in profile only below; proboscis quite small, short and cylindrical. Palpus reduced to a minute stub. Antenna slender and longer than the head; first segment twice as long as second; third segment, microsegment included, not quite twice the combined length of the first segments. At the apex the slender third segment bears a short, distinct microsegment.