

## Type Locality and Distribution of the Crab Spider *Xysticus emertoni* Keyserling (Araneida: Thomisidae)

Richard L. Hoffman

Virginia Museum of Natural History  
Martinsville, Virginia 24112, USA

By virtue of the very distinctive genitalic characters of both sexes, *Xysticus emertoni* (Keyserling, 1880) is one of the most easily recognized members of the genus. Collection records published by Gertsch (1939, 1953) and by Dondale & Redner (1978, map 53) imply a boreal distribution generally corresponding to the taiga biome, from Alaska to Newfoundland and extending south through the Rockies to New Mexico and Appalachians to Georgia.

But does the species really occur in Georgia? This question is of some relevance inasmuch as Gertsch designated "Georgia" (from the three localities specified in the original description) as type locality for the species, a choice perhaps inappropriate in light of more recent biogeographic insights<sup>1</sup>. The material from eastern United States examined by Gertsch (both papers) came only from Maine, Vermont, New Hampshire, New York, and Massachusetts. Southward, aside the original record for "Georgia" cited by Keyserling, there is only the record for the District of Columbia given by Marx in 1892. The source of that record alone is enough to invoke suspicion, Marx being frequently implicated in cases of apparent label-mixing. Moreover, *X. emertoni* was not found in Maryland during the inventory work conducted for four years by M. H. Muma and reported in 1945. The species was not discovered in western North Carolina by such

experienced early collectors as Nathan Banks, S. C. Bishop, and C. R. Crosby, and has not been found during extensive field work in recent years by F. A. Coyle.

The original description by Keyserling (1880: 40) states, with reference to the type material: "N. America. In der Sammlung des Herrn E. Simon aus Georgia, von Monnt [sic] Washington und Tuckermanns ravin [sic] in den Whit [sic] Mountains." In the same paper, Keyserling (p. 41) named a closely related species, *X. limbatus*, also from Simon material labeled "Colordo [sic] und Texas" and a female in the University of Breslau "aus Peoria im staate Illinois."

The type material of *X. emertoni* (except for one specimen) and of *X. limbatus* was returned to Simon, who, apparently, decided the two names were synonyms and following one of his less felicitous procedures, combined everything under the first name. Dr. Christine Rollard very kindly loaned me the Simon specimens labeled as *emertoni*, three vials in all, with the following contents (labels transcribed **exactly** as written):

"2.415 X. Emertoni Keysl. / White Montains type".

This vial contains a single adult female.

"2.416 Emertoni Keys. / Georgia, Oregon, Wisc."

This vial contains two adult females.

"14.018. X. Emertoni Keys. / (type ♂ & ♀ limbatus Keys./ Texas, Colorado." This vial contains one adult male, one adult female, one immature male, and four immature females.

<sup>1</sup> Gertsch (1939: 375) stated that "Georgia" - one of the originally cited localities for *emertoni* - is the type locality for the species. He did not, however, allude to the existence of the other specimens seen by Keyserling: syntypes since no holotype was specified in the original description. Since the type locality in such cases is determined by the origin of a subsequently selected lectotype (not heretofore done), Gertsch's designation was invalid (ICZN, Art. 74 (a) (iii), 1985).

Mr. Paul Hillyard informs me that the spider collection of the British Museum (Natural History) contains a female (Reg. 1890.7.1. 3386) labeled "*Xysticus emertoni* Keys./Georgia Type)", apparently retained by



Keyserling from the material now composited under 2.416 in the Paris collection. Presumably the two females remaining under that number are from Oregon and Wisconsin, although it is impossible to attribute either to a locality. Gertsch (1939: 375) was unaware that Keyserling had kept the specimen labeled "Georgia" and indicated that it was in the Muséum national d'Histoire naturelle, Paris. In the belief that (with all other considerations being equal) a lectotype should be selected from

epigynum of the adult female in 14.018 agrees exactly with that of the lectotype MHNP 2.415.

Dr. Gruber advises me (in litt.) that there is no material of *emertoni* from Keyserling's collection in the Naturhistorisches Museum, Vienna. It seems unlikely that we can trace the source for Keyserling's inclusion of the states of Oregon and Wisconsin on the vial label of MHNP 2.416, as they were not mentioned in the original description.

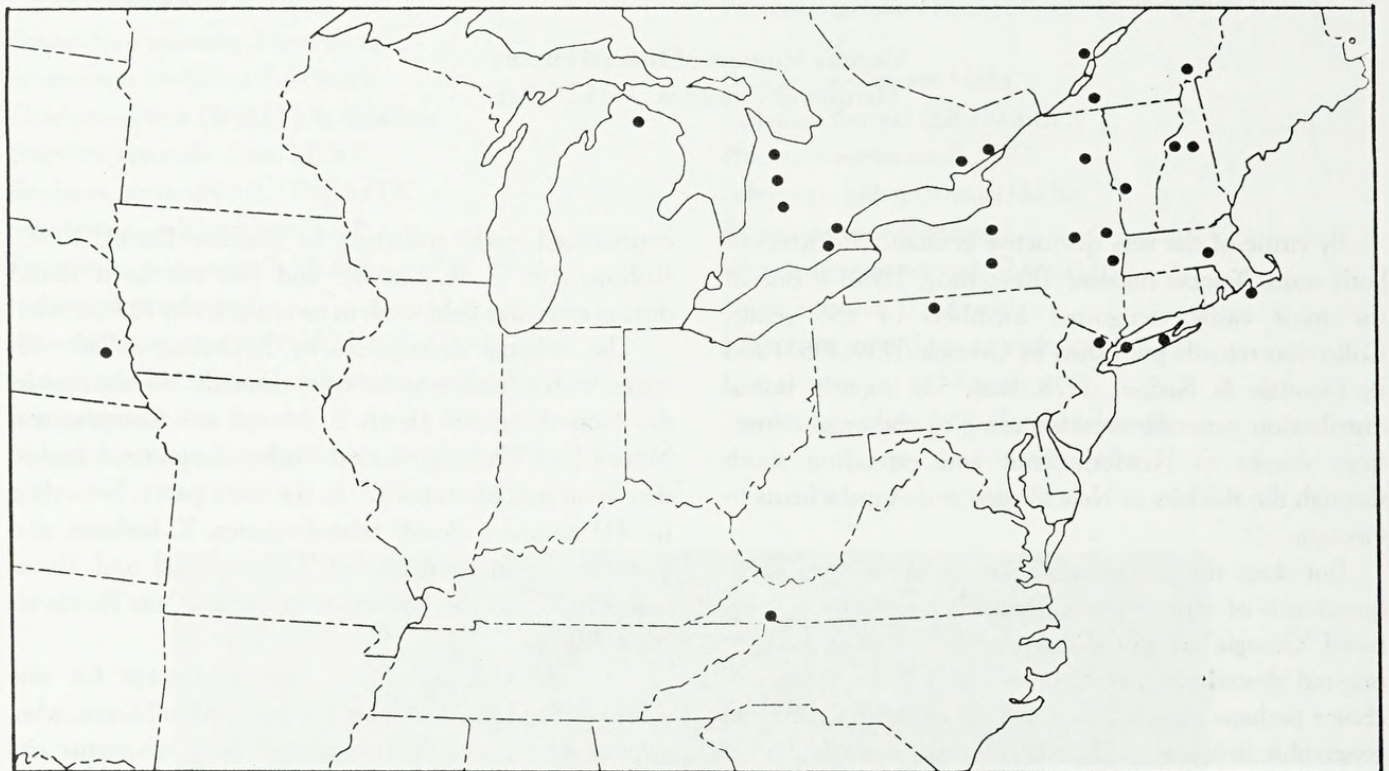


Figure 1. Northeastern United States and adjacent Canada, showing localities for *Xysticus emertoni*. Records for Canada adapted from Map 53 in Dondale & Redner (1978), most of those for the United States from Gertsch (1939, 1953); that for northern Pennsylvania courtesy of N. I. Platnick, American Museum of Natural History.

material deposited with the original owner of a syntype series, and from an unimpeachable locality, I hereby designate the female numbered 2.415 as **lectotype** of *Xysticus emertoni* Keyserling, and the two females numbered MHNP 2.416 and that under BMNH 1890.7.1.3386 as **lectoparatypes**. The White Mountains of New Hampshire (specifically Mount Washington) are thus fixed as the restricted type locality.

The adult male in 14.018 is herewith designated as **lectotype** of *Xysticus limbatus* Keyserling, the others as **lectoparatypes**. The locality "Colorado" is certainly more likely to be correct than "Texas" given what is known about the subboreal distribution of the species. The

#### Appalachian distribution of *Xysticus emertoni*.

Canadian localities are plotted on Map 53 in Dondale & Redner's 1978 treatment of the crab spiders of Canada and Alaska, showing a continuous distribution from eastern Alaska to Nova Scotia. Records published by Gertsch (1939, 1953) imply extensions southward as far as Arizona in the Rocky Mountain system, and into the northern Appalachians in the East, as noted above. I have not been able to search all available museum sources, but appealed to colleagues at Harvard, New York, Ottawa, and Washington for any Appalachian records in their respective collections. There are no specimens from south



of New York in either the USNM (Larcher, in litt.), the MCZ (Leibensperger, in litt.), or the Canadian National Collection (Dondale, in litt.). AMNH has one sample from extreme north-central Pennsylvania (Platnick, in litt.)

That *emertoni* does occur at least disjunctly southward along the Appalachians was first manifested by the capture of an adult male and female at White Top Mountain, Virginia, by a party from the Virginia Museum of Natural History. The specimens were taken during sweeping in a field of waist-high grasses and composites adjacent to beech woods. The external genitalia of both spiders agree exactly with the illustrations published by Dondale & Redner (op. cit., figs. 620, 623) and the epigynum is identical with that of the lectotype in direct comparison. It is noteworthy that specimens of *emertoni* were not taken in a pitfall array operated only a hundred yards distant for more than a year, considering that pitfalls often capture xysticids in substantial numbers. Nor has the species been taken anywhere else in Virginia by the Museum's inventory work, including sites at about 4000 feet ASL which have yielded a number of other boreal arthropods. The inference may be drawn that *emertoni* is partial to open biotopes since all pitfall lines have been placed in heavily wooded areas.

Collection data: VIRGINIA: **Grayson Co.**: White Top Mountain, open field beside FS Rt. 89 at 5000' asl, 25 June 1994, J. M. Anderson, M. W. Donahue, R. L. Hoffman, R. S. Hogan leg. (VMNH 1♂, 1♀).

This locality is approximately 150 miles north of the nearest part of Georgia, a distance which is trivial in the context of the species' enormous transcontinental range but more significant in terms of its peripheral position in a southward direction. Perhaps the premise that Simon's "Georgia" specimens were mislabeled is unjustifiably presumptuous, but is maintained because of the scarcity of *emertoni* in Virginia and the absence of any records for the mountains of North Carolina and Tennessee. The position of the Virginia locality vis-à-vis nearest localities in the coherent range of *emertoni* is shown on the accompanying map.

#### ACKNOWLEDGMENTS

I am indebted to a number of colleagues for their

generous and prompt assistance in various phases of data accumulation: Dr. Christine Rollard for loan of the Simon material (MNHP); Paul Hillyard for information on material in The Natural History Museum (BMNH); Dr. Jürgen Gruber for information on the Vienna collection; Scott Larcher for help with literature and searching the USNM collection for records; Laura Leibensperger (MCZ) and Dr. Norman Platnick (AMNH) for the same service at their institutions; and Dr. Frederick A. Coyle for information from his own field experience. Dr. Charles D. Dondale verified the absence of southern Appalachian material in the CNC, and kindly reviewed a draft of the manuscript.

#### REFERENCES

- Dondale, C. D., and J. H. Redner. 1978. The Crab Spiders of Canada and Alaska. In: The Insects and Arachnids of Canada, Part 5. Research Branch, Canada Department of Agriculture, Ottawa, Publication 1663, 255 pp.
- Gertsch, W. J. 1939. A revision of the typical crab-spiders (Misumeninae) of America north of Mexico. Bulletin of the American Museum of Natural History 76: 277-442.
- Gertsch, W. J. 1953. The spider genera *Xysticus*, *Coriarachne*, and *Oxyptila* (Thomisidae, Misumeninae) in North America. Bulletin of the American Museum of Natural History 102: 413-482.
- Keyserling, E. 1880. Die Spinnen Amerikas. Laterigradae. Bauer & Raspe, Nürnberg.
- Marx, G. 1892. A list of the Araneae of the District of Columbia. Proceedings of the Entomological Society of Washington, 2: 148.
- Muma, M. H. 1945. An annotated list of the spiders of Maryland. The University of Maryland, Agricultural Experiment Station, College Park. Bulletin A38. 65 pp.



Hoffman, Richard L. 1996. "Type locality and distribution of the crab spider *Xysticus emertoni* Keyserling (Araneida: Thomisidae)." *Banisteria : a journal devoted to the natural history of Virginia* 8, 47–49.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/270570>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/298452>

#### **Holding Institution**

New York Botanical Garden, LuEsther T. Mertz Library

#### **Sponsored by**

BHL-SIL-FEDLINK

#### **Copyright & Reuse**

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Virginia Natural History Society

License: <http://creativecommons.org/licenses/by-nc-sa/4.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.