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First record of *Myrmarachne formicaria* (De Geer) (Araneae: Salticidae) in Pennsylvania

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Abstract. *Myrmarachne formicaria* (De Geer) (Araneae: Salticidae) is reported from Pennsylvania for the first time, **new state record**. Seventeen specimens were collected in Lindgren funnel and bucket traps during 2016. This connects the two reported ranges of this species in Ohio and New York.

Key Words. Lindgren funnel, bucket trap, new record

Introduction

The large genus *Myrmarachne* MacLeay contains 186 species with representatives in every biogeographic region (World Spider Catalog 2017). *Myrmarachne formicaria* (De Geer) was first detected in North America from a collection in Ohio in 2001 and reported in 2006 (Bradley et al. 2006). It was later reported by Gall and Edwards (2016) in New York in the Buffalo area. While photographs of *M. formicaria* in Pennsylvania have been posted on BugGuide.net, no known specimens have been deposited in a museum to document this range expansion. Presented are the first records of *M. formicaria* from Pennsylvania connecting the two reported ranges.

Materials and Methods

Trapping was conducted by the Pennsylvania Department of Agriculture's (PDA) Bureau of Plant Industry and USDA Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine (PPQ). The PDA samples were collected during surveys in agricultural settings, with one survey targeting grape (*Vitis* sp.) vineyard pests and the other targeting pests of solanaceous crops, particularly on tomatoes. Traps used in these surveys were multicolor bucket traps (or universal trap) with a configuration of white bucket, yellow funnel, and green lid. The traps were baited with either *Spodoptera littoralis* (Boisduval) or *Autographa gamma* (Linnaeus) (Noctuidae) in grapes and *Spodoptera litura* (Fabricius) or *Chrysodeixis chalcites* (Esper) lures in tomatoes. Traps were established in mid to late April.

The USDA APHIS PPQ samples were collected in twelve-unit Lindgren funnel traps placed in urban or industrial settings identified as likely entry points for new pests. The Mercer County location was next to a trucking depot adjacent to a river, and the Venango County site at a Pennsylvania Department of Transportation truck depot adjacent to an airport. The funnel traps were baited with *Ips* or *Chalcographus* lures (Coleoptera: Curculionidae). The Venango County trap was hung on June 20th 2016, and the Mercer County trap was hung on July 5th, 2016.

All traps were serviced every two weeks until removed in September (USDA) or November (PDA). Bucket-collected specimens were placed into a 200 mL Nalgene bottle with paper towel to absorb excess moisture, and were kept in cold storage until sorted. Lindgren funnel samples were placed into ethanol after removal until sorting and identification. Specimens were deposited in the Pennsylvania Department of Agriculture Collection, Harrisburg, Pennsylvania (PADA).

Results

Seventeen specimens (14♂, 3♀) of *M. formicaria* were collected from August 5th, 2016 to September 28th, 2016 in eight collection events from four counties: Erie, Venango, Mercer, and Crawford. Collection

of these specimens was likely ancillary, as Salticidae attraction to these lures has not been documented. Individuals may have simply been drawn to the presence of suitable prey or occurred purely by chance.

The calendar ranges of the samples reported should not be taken as a true estimate of the phenology of *M. formicaria* in Pennsylvania. As spiders are not a target group for identification in survey samples at PDA (who also processed the USDA APHIS PPQ samples), detection was a chance encounter due to the author's curiosity for a charismatic Salticidae with "generous" chelicerae. Verbal reports from other taxonomists at PDA noted encountering *M. formicaria* prior to first detection, but these were discarded and are unverifiable. After confirmation from the USDA Systematic Entomology Laboratory was obtained after the initial detection, taxonomists were instructed to screen for the spider resulting in 16 specimens comprising seven records.

Myrmarachne formicaria can be distinguished by the male chelicerae projecting more than 50% of the carapace length, and the female palpal tarsus being dorsoventrally flattened and bent downward distally (Bradley et al. 2006).

Material Examined

US: Pennsylvania: Crawford County: 24989 PA 99 Bucket S (41.82660 °N, -80.07904 °W), August 24, 2016, Col. J. Caldwell (1♂); Erie County: 9440 West Main Bucket S (42.18807 °N, 79.91250 °W), August 5, 2016, Col. J. Caldwell (1♂); 7608 McGill Road Bucket S (42.15317 °N, 79.93328 °W), September 28, 2016, Col. J. Caldwell (4♂, 1♀); 7608 McGill Road Buck A (42.15315 °N, -79.93344 °W), September 28, 2016, Col. J. Caldwell (2♂, 2♀); Mercer County: Yourga Trucking-MER04 (41.19768 °N, -80.50558 °W), September 13, 2016, Col. M. Dykstra (1♂); Venango County: Franklin PennDOT -CT3, (41.37058 °N, -79.86098 °W), August 11, 2016, Col. M. Dykstra (1♂); 3394 PA 417 Bucket C, (41.48908 °N, -79.79496 °W), August 12, 2016, Col. J. Caldwell (2♂); Franklin PennDOT – CT3, (41.37058 °N, -79.86098 °W), September 7, 2016, Col. M. Dykstra (2♂).

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