



## **New Record of Prey of Cicada Killer Wasp *Sphecius convallis* Patton (Hymenoptera: Crabronidae) and New Record of Distribution in Oaxaca, Mexico**

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Source: Entomological News, 129(5) : 567-569

Published By: The American Entomological Society

URL: <https://doi.org/10.3157/021.129.0513>

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## SCIENTIFIC NOTE

NEW RECORD OF PREY OF CICADA KILLER WASP *SPHECIUS CONVALLIS* PATTON (HYMENOPTERA: CRABRONIDAE) AND NEW RECORD OF DISTRIBUTION IN OAXACA, MEXICO<sup>1</sup>

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The crabronid wasp genus *Sphecius* contains 21 described species (Pulawski, 2020). Of these, five are recorded in the New World (Bohart, 2000): *Sphecius convallis* Patton, 1879; *S. grandis* (Say, 1823); *S. hogardii* (Latreille, 1809); *S. speciosus* (Drury, 1773) and *S. spectabilis* (Tashenberg, 1875). In Mexico, only three species have been registered: *S. convallis*, *S. grandis* and *S. speciosus* (Holliday & Coelho, 2006; Coelho et al., 2011). *Sphecius convallis* is distributed in eleven states of Mexico (Fig. 1A): Baja California (Krombein, 1979; Ruíz et al., 2002; Coelho et al., 2011; Pulawski, 2020), Baja California Sur (Coelho et al., 2011; Pulawski, 2020), Chihuahua, Coahuila, Jalisco, Morelos, Querétaro, San Luis Potosí, Sinaloa, Sonora (Coelho et al., 2011) and Tamaulipas (Horta et al., 2007; Coelho et al., 2011). In this work, we record the first record of *S. convallis* from the state of Oaxaca (Fig. 1A). It was identified using keys of Holliday & Coelho (2006).

Holliday et al. (2009) cited 38 species of cicadas as prey of the genus *Sphecius* in the United States of America. *Diceroprocta apache* (Davis), *D. semicincta* (Davis), *Tibicen parallelus* (Davis) and *T. pruinosa* (Say) (Hemiptera: Cicadidae) are cited as prey of *S. convallis*. Furthermore, the authors cited 12 cicada prey species killed by *Sphecius speciosus*, including *Quesada gigas* (Olivier), identified in this work using the keys of Martinelli and Zuchi (1997).

We report the first record of a female (Fig. 1B) *S. convallis* hunting the cicada *Q. gigas* (Fig. 1C) in Bosque El Tequío, Oaxaca, Mexico (8/May/2017). The wasp approached the cicadas on a guamuchil tree *Pithecellobium dulce* (Roxb.) Benth. 1844 (Mimosaceae) when they were singing. The wasp searches for a cicada female to paralyze it with its sting, injects the poison to immobilize it and carries it in flight back to its underground nest. This hunting behavior had already been described by Evans and O'Neill (2007) and Holliday et al., (2009). We observed

<sup>1</sup> Received on May 11, 2020. Accepted on July 26, 2020.

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on some occasions, that while the female wasp manipulated the cicada in the air, the cicada fell to the ground. The wasp would then relocate the cicada and continue to sting the cicada to immobilize it further and attempt to take it away again. However, sometimes the maneuver is complicated on the ground and on occasions the prey managed to escape.

Additional specimens of *S. convallis* were captured: two ♀, Bosque El Tequio (7/May/2019, 17°00'47"N, 96°43'04"W, 1520 masl, J. Sánchez, R. Jarquín, H. Guzmán and A. Mesinas, collectors), one ♀ same locality (16/May/2019), one ♀ same locality (17 /May/2019), one ♀ in San Pedro Apostol, Ocotlan, Oaxaca (12/May/2017, 16°44'13"N, 96°44'05"W, 1483 masl, J. Sánchez, R. Jarquín, H. Guzmán and A. Mesinas, collectors), three ♀ same locality (2/May/2019), one ♀ same locality (9/May/2019, one ♀ same locality (1/May/2020) and three ♀ same locality (8/May/2020), and one ♀, Villa de Zaachila, Oaxaca (9/May/2020, 16°57'31"N, 96°44'46"W, 1519 masl, H. Guzmán and Mateos, E. M., collectors). The material was deposited in the Instituto Politécnico Nacional/ CIIDIR (Centro Interdisciplinario de Investigación Integral Regional Unidad Oaxaca) Insect Collection.

#### ACKNOWLEDGMENT

The authors wish to thank the Secretaria de Investigación y Posgrado (SIP) at Instituto Politécnico Nacional (IPN), for funding the project SIP-20201752 "Estudio faunístico de cigarras (Hemiptera: Cicadidae) en Oaxaca, México". We are grateful to Robert W. Jones (Universidad Autonoma de Queretaro, Mexico) for reviewing the English of the manuscript.

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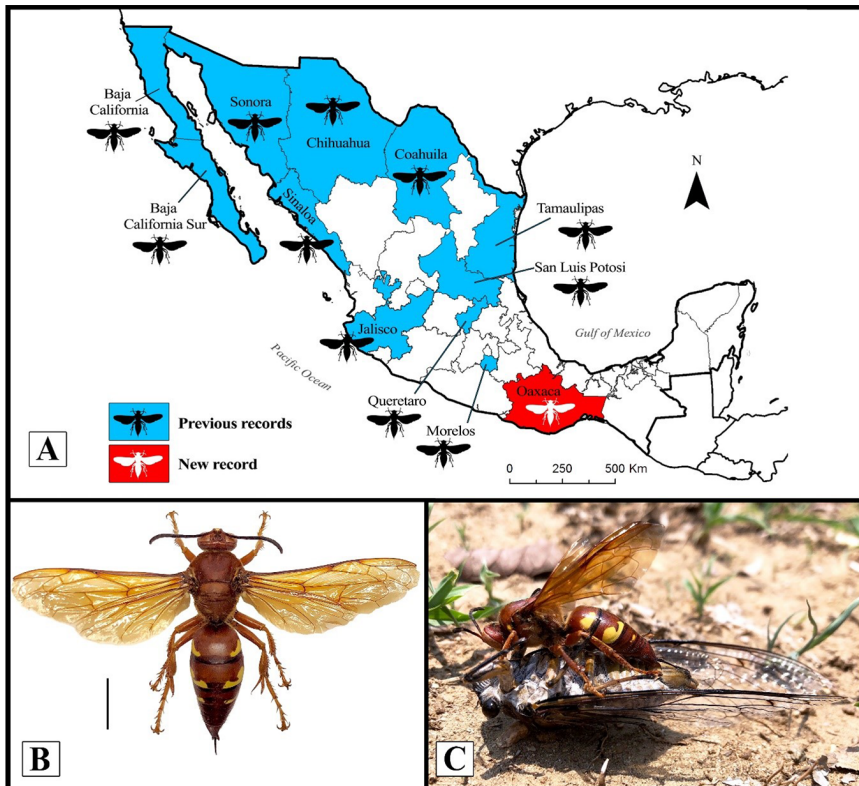


Fig. 1. A) Distribution of *Sphecius convallis* in Mexico. B) Dorsal view of female of *S. convallis* (scale bar = 10 mm). C) Wasp cicada killer attacking a female of *Quesada gigas*.