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***Polistes dominula* (Christ) (Hymenoptera: Vespidae: Polistinae) Recorded from Nebraska**Louis S. Hesler¹**Abstract**

Polistes dominula (Christ), a Palearctic paper wasp that has established in various areas of North America, is reported for the first time from the state of Nebraska based on specimens from the city of Lincoln. Potential implications of its presence in Nebraska are discussed.

Polistes dominula (Christ) is a Palearctic paper wasp that has been introduced at least twice into North America (Liebert et al. 2006). It was first detected in the eastern U.S. near Boston, Massachusetts in the late 1970s (Hathaway 1981), and a second introduction of *P. dominula* was found along the Pacific coast of North America (Landolt and Antonelli 1999). Both eastern and western populations of *P. dominula* have expanded (Liebert et al. 2006), and this species has become established in central North America, including Missouri (Arduser and Stevens 1999), Minnesota (Liebert et al. 2006), and South Dakota (Hesler 2010).

On 26 September 2010, about 10 individuals of *P. dominula* were found in Lincoln, Lancaster County, Nebraska, foraging simultaneously with several individuals of a native paper wasp, *P. fuscatus* (F.), on flowers of stoncrop (*Sedum* sp.) and ornamental onion (*Allium* sp.; Fig. 1). Several individuals were collected for identification using diagnostic characters in Buck et al. (2008). Specimens of *P. dominula* (Fig. 2) were identified based on coloration, dense punctation of the mesopleuron, and strong ridging of the propodeum (Buck et al. 2008). Voucher specimens are held at the North Central Agricultural Research Laboratory, USDA-ARS, Brookings, South Dakota.

The wasps from Lincoln represent the first specimens of *P. dominula* collected in Nebraska. However, a nest attributable to *P. dominula* was collected in Lincoln on 21 August 2008 (University of Nebraska-Lincoln 2011). It is unclear whether the presence of *P. dominula* in Lincoln was due to geographic range expansion from neighboring state(s) or the result of a separate anthropogenic introduction. *Polistes dominula* may spread throughout Nebraska, given its expansion in other areas of North America and its presence in nearby states with common landscape features. Surveys for *P. dominula* are needed in other areas of Nebraska to determine its rate of spread and the extent of its geographic distribution in the state.

The observations in Lincoln also document the co-occurrence of *P. dominula* with the native paper wasp, *P. fuscatus*. This is important because the two species, which are sympatric in eastern North America, compete for nesting space and prey (Buck et al. 2008). *Polistes dominula* may have a competitive advantage over *P. fuscatus* because of its broader prey spectrum (Cervo et al. 2000), greater tendency for nectar storage (Silagi et al. 2003), faster development, higher

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Figure 1. *Polistes dominula* (yellow arrows) foraging with a native paper wasp, *P. fuscatus* (red arrows), on flowers of *Allium* sp. in Lincoln, Nebraska.

productivity (Armstrong and Stamp 2003), and lower incidence of parasitism (Buck et al. 2008). However, *P. dominula* may initially become more prevalent than *P. fuscatus* in newly colonized areas, but eventually the two species may reach population levels in which they coexist in a given region (Gamboa et al. 2004, Buck et al. 2008, O'Brien 2010). Nonetheless, future studies are needed to determine the possible impacts of *P. dominula* on the abundance of prey species and on *P. fuscatus*.

Finally, like *P. fuscatus*, *P. dominula* nests in anthropogenic structures, and is well adapted to urban and suburban environments (Cervo et al. 2000, Silagi et al. 2003). Therefore, *P. dominula* is an additional stinging hymenopteran that humans are likely to encounter unwantedly in Lincoln and eventually in other cities and towns in Nebraska. This record serves to alert pest management and medical personnel of its presence in the Lincoln area. Pest management practitioners in Nebraska should be aware of the potential spread of *P. dominula* in Nebraska and act to manage this wasp and minimize the number of stinging incidents resulting from encounters between it and humans.

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Figure 2. Side view of *Polistes dominula* from Lincoln, Nebraska.

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