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First Report of the Gastropod-Killing Nematode, *Phasmarhabditis hermaphrodita*, in Oregon, U.S.A.

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Nematode associates of gastropods are understudied in comparison to entomopathogenic nematodes, even though the former are known to be common. Furthermore, there is increasing evidence that these nematodes play an important role in the regulation of gastropod populations in nature (Morand *et al.*, 2004). One malacopathogenic nematode species, *Phasmarhabditis hermaphrodita* (Rhabditidae), and its bacterial associate, *Moraxella osloensis* (Moraxellaceae) are currently being used as a commercially available biological control agent (trade name Nemaslug®) of a wide range of pest slugs and snails in European crops (Rae *et al.*, 2007). This product is not currently available in the U.S. because *P. hermaphrodita* was not known from the region despite a number of surveys looking for it (Kaya, 2001; Ross *et al.*, 2010). Recently, however, Tandingan De Ley *et al.* (2014) collected the first specimens of this nematode from a number of pest slug species in California, motivating renewed interest in *P. hermaphrodita* as a biological control agent of invasive gastropods in the U.S. (Tandingan De Ley *et al.*, 2017). Herein we report the first records of *P. hermaphrodita* from Oregon, a gastropod-rich area in the Pacific Northwest of the U.S. (Vlach, 2016). Several dozen nematodes were collected from moribund *Deroceras reticulatum* (Agriolimacidae) under DeSangosse slug refuge traps (0.5 m × 0.5 m) on the Oregon State University campus, in Benton Co., Oregon. The slugs were identified according to Mc Donnell *et al.* (2009). The nematodes were transferred to an NGM agar plate and allowed to grow and reproduce on the plate, eating bacteria that co-cultured with the nematodes (Barrière and Félix, 2006). The nematodes were observed to reproduce through apparent hermaphroditism on the plates; no males were observed across many generations in culture. Molecular methods were used to identify the nematodes collected from the *D. reticulatum* carcass. PCR amplification and subsequent direct DNA sequencing of an ~800 bp segment of the nematode 18S ribosomal RNA gene revealed a sequence that was a 100% match to the 18S rRNA sequence for *P. hermaphrodita* in GenBank (Accession # JQ965811). These records of *P. hermaphrodita* are the first records of this species in North America outside of California and highlight the need for surveys in other states and regions. Research on the infectivity of these US strains to pest and native gastropods is now also required to determine their biological control potential.

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