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Four new species of pholcine spiders (Araneae: Pholcidae) from Southeast Asia

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Abstract

Four new species belonging to four genera of the subfamily Pholcinae are reported from Southeast Asia: *Belisana protumida* **spec. nov.** (male, female), *Khorata bayeri* **spec. nov.** (male), *Pholcus schawalleri* **spec. nov.** (male), and *Uthina khaosokensis* **spec. nov.** (male).

Key words: Taxonomy, biodiversity, Malaysia, Philippines, Thailand

Introduction

The family Pholcidae C.L. Koch, 1850 has a worldwide distribution and occupies a wide range of habitats in a variety of ecosystems (Huber 2005a). To date, 1,398 species and 90 genera have been described (Platnick 2014), with most diversity concentrated in tropical and subtropical regions. Recently, a large number of new species in this family has been reported from Southeast Asia and the Pacific Islands. Huber (2005a, b) revised the genera *Belisana* Thorell, 1898 (with descriptions of 53 new species) and *Spermophora* Hentz, 1841, the latter including nine new species and three new genera (*Aetana* Huber, 2005, *Savarna* Huber, 2005, and *Khorata* Huber, 2005). Huber (2011a) also offered a major revision of the genus *Pholcus* Walckenaer, 1805, including 89 new species, of which 42 new species were from Southeast Asia and the Pacific Islands. Yao and Li (2013) reported 14 new species from Laos, belonging to five genera (*Belisana*, *Calapnita* Simon, 1892, *Khorata*, *Pholcus*, and *Spermophora*).

Huber (2011b) divided Pholcidae into five subfamilies based on cladistic analyses of morphological and molecular data and on qualitative character assessment (Huber 2011a; Dimitrov *et al.* 2013): Ninetinae Simon, 1890, Arteminae Simon, 1893, Modisiminae Simon, 1893, Smeringopinae Simon, 1893, and Pholcinae C.L. Koch, 1850. Pholcinae, the most species-rich subfamily in Pholcidae, can be diagnosed by the presence of proximo-lateral apophyses on the male chelicerae and tarsal comb-hairs arranged in a single row (Huber 2011a). The subfamily is mainly restricted to the Old World with the highest diversity in the humid tropical and subtropical regions (Huber 2011b). In this paper, we describe four new species belonging to the four genera *Belisana*, *Khorata*, *Pholcus*, and *Uthina* Simon, 1893, all belonging to the subfamily Pholcinae and collected in Malaysia, Philippines, and Thailand.

Material and methods

Specimens were examined and measured with a LEICA M205 C stereomicroscope. Details were studied with an Olympus BX51 compound microscope. Illustrations were made using a camera lucida attached to the Olympus BX51 microscope, and inked using an ink jet plotter. Male and female copulatory organs were examined and illustrated after they were dissected from the spiders. Epigynes were removed and treated in 10% warm solution of potassium hydroxide (KOH) before illustration. Left male pedipalps were illustrated. Type specimens were preserved in 75% ethanol. Photographs were taken with an Olympus C7070 wide zoom digital camera (7.1

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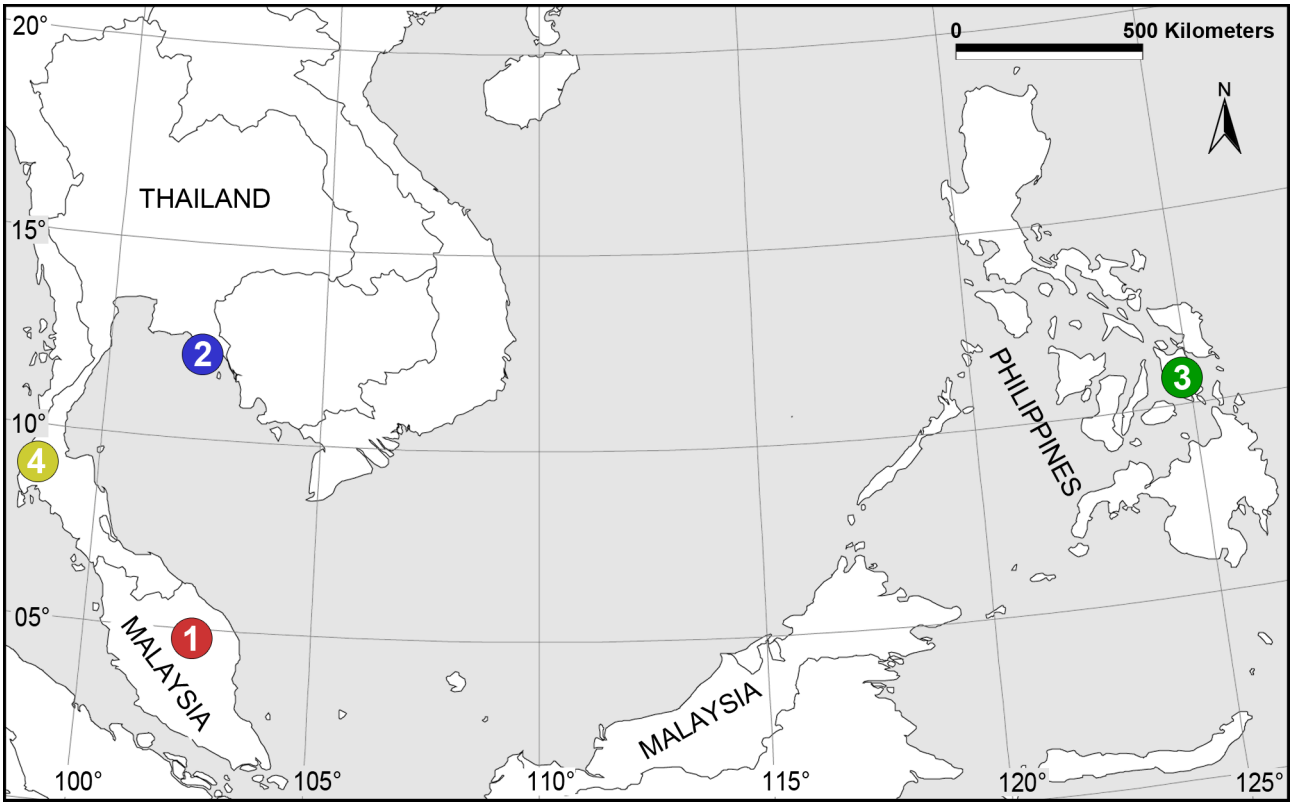

FIGURE 57. Known distribution records of four new pholcine species from Southeast Asia. 1, *Belisana protumida* **spec. nov.**; 2, *Khorata bayeri* **spec. nov.**; 3, *Pholcus schawalleri* **spec. nov.**; 4, *Uthina khaosokensis* **spec. nov.**

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