

Intensive infestation of Siberian pit-viper, *Gloydius halys halys* by the common snake mite, *Ophionyssus natricis*

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Abstract. We describe a case of intensive infestation of wild population of Halys pit-viper (*Gloydius halys*) by common snake mite (*Ophionyssus natricis*) in west Siberia. In the examined population all adult individuals (n = 10) were infected by *O. natricis*. Infection intensity varied from 3-4 to more than 20 mites per adult pit-viper. This is the second observation of *O. natricis* in west Siberia.

Key words: snakes, ectoparasites, *Gloydius halys*, *Ophionyssus natricis*, West Siberia.

The common snake mite, *Ophionyssus natricis* (Gervais, 1844) Camin, 1953 (Acari: Macro-nyssidae) is the most commonly reported ectoparasite among captive Squamata (Kettle 1990; Klauber, 1997; Wozniac & DeNardo 2000; Jacobson 2007). However, *O. natricis* is relatively rare in wild populations (Camin 1953; Kettle 1990; Stanyukovich & Iohanssen 2005; Bakiev, 2007). An intensive infestation with *O. natricis* in a population of Siberian pit-viper, *Gloydius halys halys* (Pallas, 1776) (Viperidae: Crotalinae) was recorded during our field investigations.

An isolated population of *G. h. halys* was studied in the southeastern part of Novosibirsk region (West Siberia, Russia; 54°30'45''N, 84°03'20''E). A detailed description of study area is provided in Simonov (2009). Data for this report were obtained from 23rd to 30th August 2008. Ten adult and 4 neonate snakes were captured and examined for morphological features and occurrence of ectoparasites. At the same time, four individuals of *Natrix natrix scutata* (Pallas, 1771) were also captured. All

specimens were released at the capture place after examination.

Acarine ectoparasites were identified as common snake mites (*O. natricis*) according to the key of Bregetova (1956) and the key of Moraza et al. (2009) (for genus *Ophionyssus*). We detected mites on all adult pit-vipers, but not observed any on neonates, nor on *N. n. scutata*. Ectoparasites were located on the soft tissues around the eyes, under scales and shields on the underside of a snake's head and more often in loreal pits (Fig. 1). Intensity of infestation was estimated as 3 mites per snake for two specimens, 4 for one specimen and more than 20 for seven individuals. However, an accurate count of their numbers was not possible, as the mites were very mobile.

Parasitism with *O. natricis* in natural populations of snakes has been reported for *Platyceps florulentus*, *Psammophis sibilans*, *P. schokari*, *Spalerosophis diadema*, *Naja haje*, and *Telescopus dhara* in Egypt (Yunker 1956), for snakes of genera *Nerodia*, *Heterodon* (Camin 1948), *Coluber*, *Thamnopitis*, *Lampropebtis*, *Ela-*

phe, *Masticophis*, and *Crotalus* (Schroeder 1934) in America and for *Natrix natrix*, *N. tessellata*, *Elaphe diene*, *Coluber karelini*, *Macrovipera lebetina*, *Echis carinatus*, *Dolichophis caspius* from the former USSR (Markov et al. 1964; Belova & Grigoriev 1981, Stanyukovich & Iohanssen 2005; Bakiev 2007). *Ophionyssus viperae* Miron

& Ivan 2003 that were described from *Vipera ursinii* in Romania, were synonymised with *O. natrix* after Moraza et al. (2009). Also wild lizards were reported as hosts to *O. natrix*: *Sceloporus graciosus* and *Uta stansburiana* in USA (Goldberg & Bursey 1991a, 1991b) and *Tiliqua scincoides* in Australia (Watharow & Reid 2002).

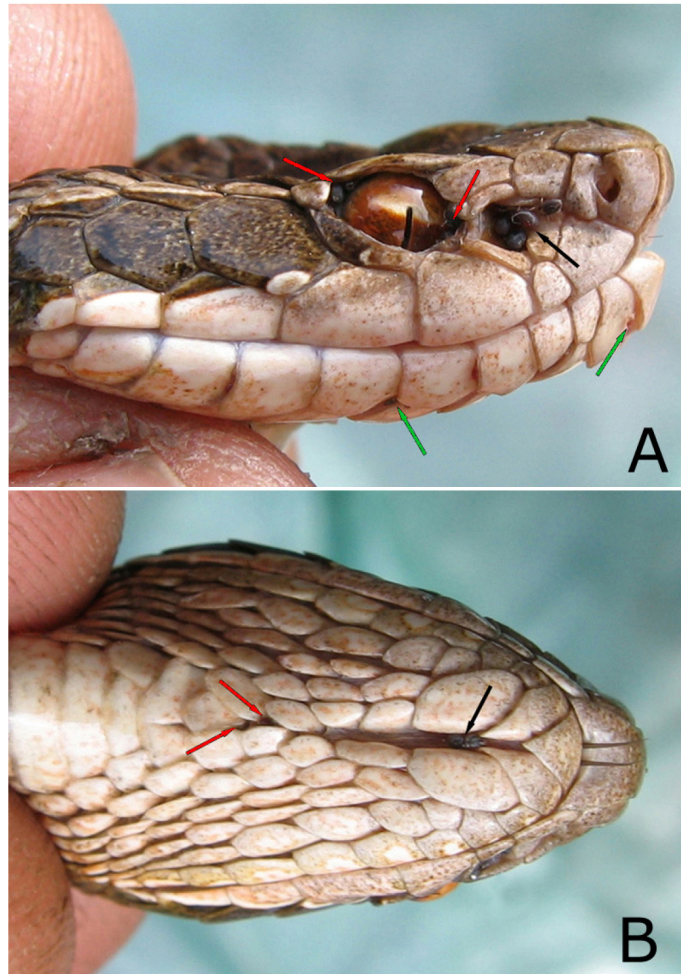


Figure 1. Common snake mites *O. natrix* on the head of *G. h. halys*: (A) in loreal pits (black arrow), on the soft tissues around the eye (red arrows) and between infralabials (green arrows); (B) between anterior genials (black arrow) and among gular scales (red arrows).

However, no described natural infestations with *O. natricis* were as prevalent as found in our study. Goldberg & Bursey (1991a, 1991b) stated that only 8% of *S. graciosus* and 11% of *U. stansburiana* were infested with *O. natricis*. According to Markov et al. (1964), 4% of *N. natrix* and 20% of *N. tessellata* were infected. Belova & Grigoriev (1981) made the first report of *O. natricis* in west Siberia, when one specimen of snake mite was found on *N. natrix* in Novosibirsk region. Thus, we have the second observation of *O. natricis* in west Siberia and the first for *G. h. halys*. Along with Crotalinae, Garret & Harwell (1991) also noticed *O. natricis* location in loreal pits for captive *Bothriechis nigroviridis*. They report that mite infestations have been associated with loreal pit inflammation and impaction. Also for reptiles in captivity, Wozniak & DeNardo (2000) noted that the skin around chronically attached mites often becomes reddened and swollen. We did not observe any visible signs of lesions.

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