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Short Communication

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A common tortoise tick, *Hyalomma aegyptium* Linne 1758 (Acari: Ixodidae), identified on eastern hedgehog (*Erinaceus concolor* Martin 1838) in Central Anatolia

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Abstract: Ticks are obligate blood sucker arthropods that infect animals and humans. A common tortoise tick, *Hyalomma aegyptium*, was collected from a young and an adult male hedgehog, *Erinaceus concolor*, from Central Anatolia in July 2008. More ticks were determined on the young one. This is the second record of tortoise tick that parasitizes a hedgehog.

Key words: *Hyalomma aegyptium, Erinaceus concolor*, ticks, Turkey

Orta Anadolu'daki kirpiden (*Erinaceus concolor* Martin 1838) teşhis edilen kaplumbağa paraziti *Hyalomma aegyptium* Linne 1758 (Acari: Ixodidae)

Özet: Keneler birçok hayvanı ve insanı enfekte eden zorunlu kan emici eklembacaklılardır. Kaplumbağa kenesi olarak bilinen *Hyalomma aegyptium*, Temmuz 2008'de orta Anadolu'da bir genç bir de ergin kirpiden, *Erinaceus concolor,* alınmıştır. Genç olanda daha çok keneye rastlanmıştır. Bu kaplumbağa kenesinin bir kirpiye parazit olduğuna dair ikinci bir kayıttır.

Anahtar sözcükler: *Hyalomma aegyptium, Erinaceus concolor*, parazit, Türkiye

Introduction

The eastern hedgehog, *Erinaceus concolor* Martin 1838, is distributed in Asia Minor, Israel, Syria, Lebanon, Iraq, Iran, and the South Caucasus (1,2). Doğramacı and Gündüz (3) stated that 3 subspecies of *Erinaceus concolor* exist: *E. c. drozdovskii* in Turkish Thrace, *E. c. concolor* in the Black Sea region, and *E. c. transcaucasicus* in the rest of Anatolia.

Ticks are obligate blood sucker arthropods that infect terrestrial and some marine as well as flying

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vertebrates. To date more than 800 tick species have been recorded. The subgenus *Hyalomma* includes 15 species, with a high veterinary and public health importance (4). *Hyalomma aegyptium*, a common tortoise tick, is distributed from Morocco, Spain, and south France to Southern Asia. Adults, nymphs, and larvae target mainly tortoise, dog, cattle, pig, wild deer, jackals, roe deer, wild boar, European hare, fox, mustelid, squirrel, hamster, horse, hedgehog, and birds (5-7). This tick is spread by migrating birds, such as *Anthus t. trivialis, Emberiza caesia,* and *Coturnix c. coturnix* (8).

Ixodes hexagonus is known as hedgehog tick in the literature (9). In addition to this tick, *Hyalomma impeltatum, H. marginatum*, *H. lusitanicum,* and *Rhipicephalus sanguineus* also infect hedgehogs (10,11). *H. aegyptium* transmits *Theileria hirci* in goats although it is not responsible for any human and domestic animal pathology in north-western Europe (4). Similarly, it also transmits haemogregarine *Hemolivia mauritanica* to tortoises. Merdivenci (12) reported that this tick could transmit *Borrelia* sp., an agent of Lyme borreliosis, to humans in south-eastern Anatolia according to Hoogstraal and Kaiser's work (8). Recently, Güner et al. (13) isolated a novel spirochaete, *Borrelia* turcica, from *H. aegyptium* on tortoises in İstanbul.

The aim of this study was to report an additional host record of *Hyalomma aegyptium* in Central Anatolia.

Two eastern male hedgehogs, a young and an adult, were collected in July 2008 from Kırıkkale (39°50′N-33°30′E) from a reedy river bed covered with rosehips and a cultivated garden with bean, tomato, parsley, lettuce, and corn. Ticks were collected with forceps and placed into screw-capped tubes filled with 70% ethyl alcohol for later identification. Afterwards, the hedgehogs were set free in their habitats. Tick identification was performed using a stereo microscope and specific keys of Karaer et al. (14). Specimens are housed at the Zoology Museum of Biology Department of Kırıkkale University.

All the 32 adults, collected from the soft skin under the spines of hip and ear from each hedgehog, were identified as *Hyalomma aegyptium* (Figures 1 and 2).

Ten males and 10 females (one nymph and 9 adults) were found to be mating on the young hedgehog at the beginning of July in Kırıkkale, which has a semi arid climate (Figure 3).

Hyalomma aegyptium has been commonly recorded on cattle and buffaloes from Balkan countries, Pakistan, Russia, India, and southern Marmara Region of Turkey by various authors (15-

Figure 1. A female adult tick collected from the soft skin under the spines of hip of the adult hedgehog.

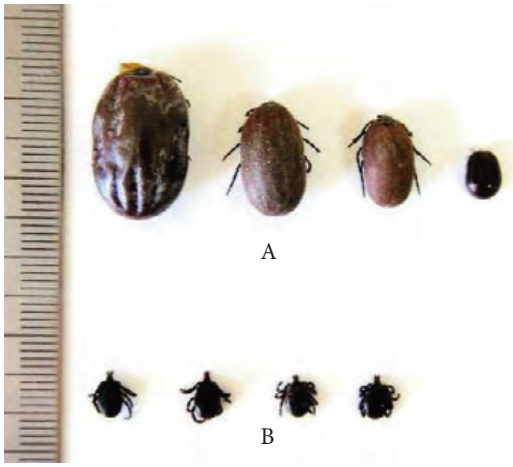

Figure 2. Three adult and 1 nymph females (A) and 4 adult male (B) ticks, *Hyalomma aegyptium,* were identified from eastern hedgehogs in Kırıkkale.

Figure 3. Mating adult *Hyalomma aegyptium* on the young hedgehog.

17). In addition, this tick was only reported from *Testudo graeca* in Iran (4).

This preliminary study shows that eastern hedgehogs could play a role as hosts for *Hyalomma aegyptium* in Central Anatolia. In contrast to Tavassoli et al. (4), we determined immature ticks on the hedgehogs in this study. Vatansever et al. (18) stated that 50% of ticks biting humans are mostly nymphs and a few adults of *H. aegyptium* in Turkey. *H. aegyptium* would transmit *Borrelia sp*. to humans in urban areas of Central Anatolia. Therefore, population of the hedgehogs as well as tortoises should be taken under control or certain insecticides should be applied to these hosts as well as areas.

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