Slender-horned gazelle (*Gazella leptoceros*), a new host for *Tricholipeurus balanicus* (Phthiraptera: Ischnocera: Trichodectidae)

Çöl Ceylanı *(Gazella leptoceros), Tricholipeurus balanicus* (Phthiraptera: Ischnocera: Trichodectidae) için Yeni Bir Konak

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ABSTRACT

This study was performed to provide information on *Tricholipeurus balanicus* (Werneck 1938) detected on slender-horned gazelles (*Gazella leptoceros*) (Cuvier 1842). Four slender-horned gazelles kept in the El Hamma Zoological Garden in Algeria were examined for lice in April 2015. Three of the four gazelles were infested with lice; of 37 lice collected from the infested animals, 14 were females, 16 were males, and 7 were nymphs. Lice were mainly found on the back and hind legs of the gazelles. The lice were collected by a forceps, preserved in 70% alcohol, and cleared in 10% KOH for 24 h. Thereafter, they were rinsed in distilled water, transferred to 70% and 99% alcohol, mounted on slides in Canada balsam, examined under a binocular microscope, and identified as *Tricholipeurus balanicus (Werneck, 1938).* To the best of our knowledge, *T. balanicus* on *G. leptoceros* has been reported for the first time.
Keywords: *Tricholipeurus balanicus*, *Gazella leptoceros*, Slender-horned gazelle, El Hamma zoological garden, Algeria
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ÖZ

Bu çalışma Çöl ceylanlarında (*Gazella leptoceros*) (Cuvier, 1842) tespit edilen *Tricholipeurus balanicus* (Werneck, 1938) hakkında bilgi vermek amacıyla yapılmıştır. Cezayir'de, El Hamma Hayvanat Bahçesi'ndeki dört Çöl ceylanı Nisan 2015'de bit yönünden incelenmiştir. İncelenen 4 ceylandan üçü bitle enfeste bulunmuş, enfeste hayvanlardan 14'ü dişi, 16'sı erkek ve 7'si nimf olmak üzere 37 bit toplanmıştır. Bitlere ceylanların özellikle sırt kısımlarında ve arka bacaklarında rastlanmıştır. Bitler bir pensle toplanmış, %70 alkolde saklanmış ve saydamlaştırılmak üzere %10 Potasyum hidroksit (KOH) içinde 24 saat bekletilmiştir. Sonra distile su, %70 ve %99 alkolden geçirilmiş, Kanada balsamla lam üzerine yapıştırılarak binoküler mikroskopta incelenmiş ve *Tricholipeurus balanicus* (Werneck, 1938) olarak teşhis edilmiştir. Bu araştırmayla *T. balanicus G. leptoceros*'dan ilk kez kaydedilmiştir.
Anahtar Kelimeler: *Tricholipeurus balanicus*, *Gazella leptoceros*, Çöl ceylanı, El Hamma Hayvanat Bahçesi, Cezayir
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INTRODUCTION

The slender-horned gazelle (*Gazella leptoceros*) (Cuvier, 1842), also known as the rhim or the sand gazelle, is mostly adapted to desert life and can be found in desert areas in North Africa, i.e., Algeria, Tunisia, Libya, and Egypt (1-4).

Today, the genus *Tricholipeurus* Bedford, 1929 is represented by more than 20 species (5-14). Ledger (15) reported 16 *Tricholipeurus* species from animals living in the south of Sahara. Until today, no *Tricholipeurus* species had been reported from *G. leptoceros*.

CASE REPORT

Four slender-horned gazelles were examined for lice in the zoological garden of El Hamma in Algeria. Three of four gazelles were infested with lice. Thirty-seven specimens, 14 females, 16 males, and 7 nymphs, were collected from the gazelles. Louse specimens were collected from the back and hind legs of the gazelles. They were preserved in alcohol and cleared in 10% KOH for 24 h. There after, they were rinsed in distilled water for 24 h and kept first in 70% alcohol and then in 99% alcohol 24 h. They were mounted on

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Figure 1. *Tricholipeurus balanicus* (uncleared): female, dorsal side, original

Figure 2. *Tricholipeurus balanicus* (uncleared): male, original

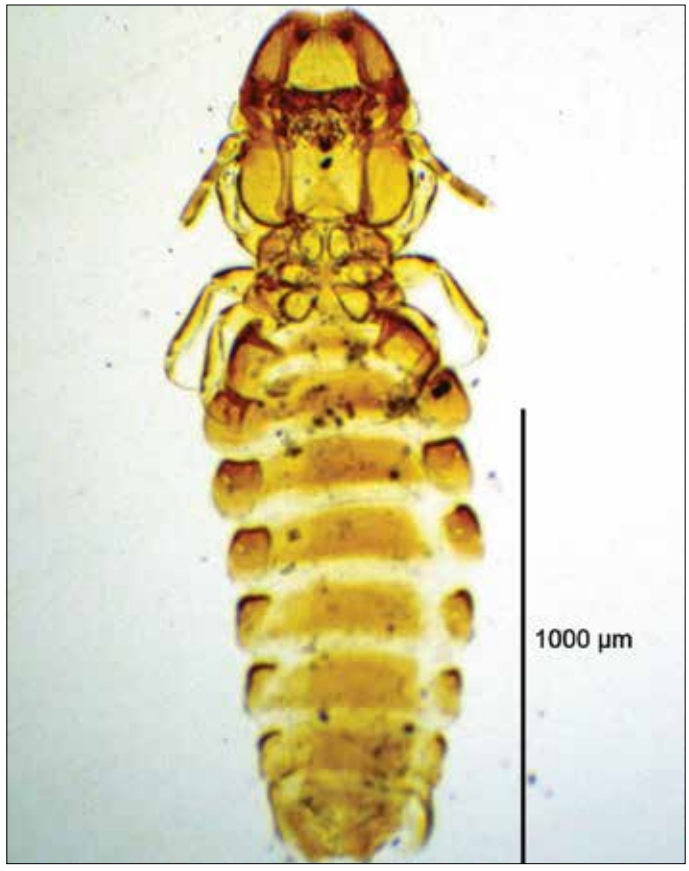

Figure 3. *Tricholipeurus balanicus* (cleared): female, ventral side, original

slides, examined under a binocular microscope (Leica DM 750), and identified as *T. balanicus* (Werneck 1938) (Figure 1-8) using relevant literature (10, 12).

DISCUSSION

The species belonging to the genus *Tricholipeurus* are parasites of Bovidae and Cervidae. Until today, there was no taxonomic key or review on this genus. Similarly to other lice, *Tricholipeurus* species are host-specific; however, some *Tricholipeurus* species have been found on other host species of the same or different host genera (14). *T. longiceps* (Rudow, 1866) is found on the Arabian gazelle (*G. arabica*), *T. cornutus* (Gervais, 1844) on the dorcas gazelle (*G. dorcas*), *T. spinifer* (Hopkins, 1943) on Grant's gazelle (*G. granti*), and *T. parkeri* Hopkins, 1941 on Thompson's gazelle (*G. thompsonii*) (14), while no *Tricholipeurus* lice were recorded from slender-horned gazelle, while *T. balanicus* was described only from the blackbuck (*Antilope cervicapra*) (10). *T. balanicus* was found on the blackbuck in Texas, USA (16). There are only few studies on the morphological characteristics of these species (10, 12). In our study, 16 males and 14 female and 7 nymphs were measured, and their total lengths were 1.90 mm, 1.84 mm, and 1.71 mm, respectively. The total lengths of females in the original description were longer that those of our specimens, while the lengths of males were similar. The head of the female *T. balanicus* in the original description is anteriorly narrower than that in our samples (Figure 3). In our material, the frontal notch was very shallow, and chitinous plates in the anterior margin were different from the original *T. balanicus*.

Figure 4. *Tricholipeurus balanicus* (cleared): male, ventral side, original

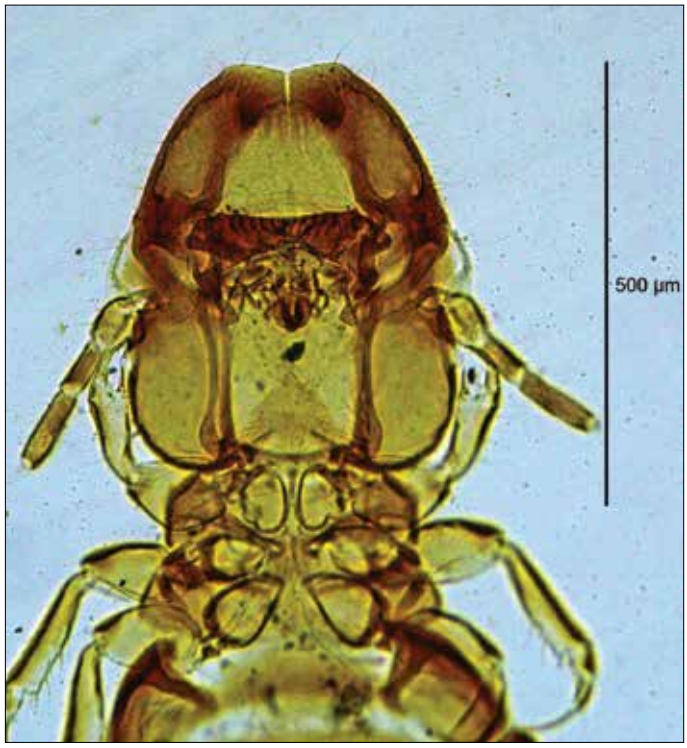

Figure 5. *Tricholipeurus balanicus:* female, head and thorax, ventral side, original

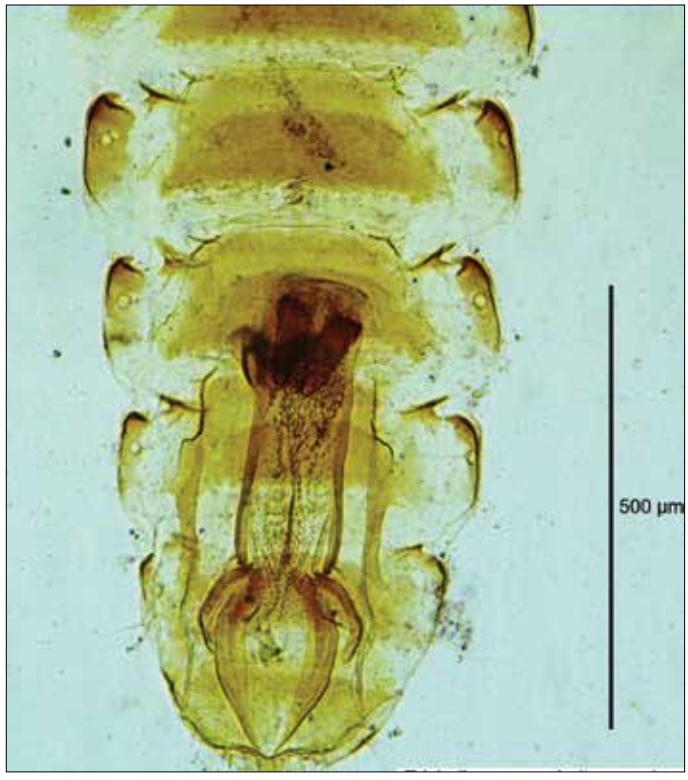

Figure 6. *Tricholipeurus balanicus:* male genitalia, ventral side, original

Figure 7. *Tricholipeurus balanicus:* male genital sac, ventral side original

However, male genitalia and other morphological characteristics were similar with the description and figures of the original work. In our samples, the paramers are more concave than those in Fig. 6 in Werneck's description. Despite these small differences, we consider that our specimens are *T. balanicus*.

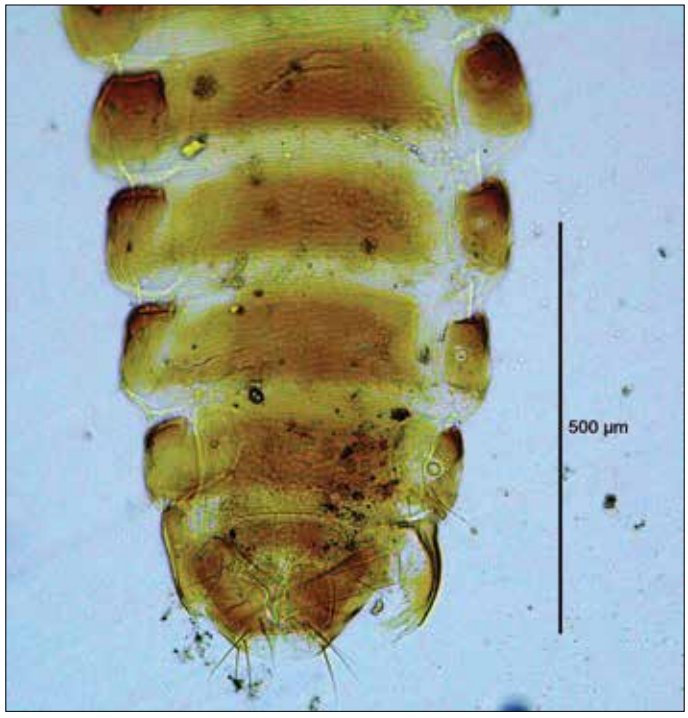

Figure 8. *Tricholipeurus balanicus:* female, abdomen, ventral side, original

As mentioned above *T. balanicus* had been described only from the blackbuck; accordingly, the present study is the first report showing that this species can also parasitize the slender-horned gazelle. In the examined zoological garden, there were no blackbucks, and accordingly, it could be not an accidental infestation between the two host species.

CONCLUSION

T. balanicus was described for the first time on slender-horned gazelle. Further investigations are needed to provide information about the phylogenetic relationship among species and host–parasite associations.

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