



CASE REPORT

First report of *Plagiorhynchus* spp. in the Mallard Duck (*Anas platyrhynchos*) in Van, Turkey

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Yeşilbaşlı Ördekte (*Anas platyrhynchos*) *Plagiorhynchus* spp.'nin Türkiye'de (Van) İlk Bildirimi

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Öz

Van'ın Erçek bölgesinde ölü olarak bulunan yeşilbaşlı bir ördek Yüzüncü Yıl Üniversitesi Veteriner Fakültesi Parazitoloji Anabilim Dalına getirildi. Nekropsi incelemesinde ördeğin bağırsağında bulunan 6 adet *Acanthocephala*'nın morfolojik özelliklerine göre *Plagiorhynchus* cinsine ait olduğu tespit edildi. Bu olgu Türkiye'de yeşilbaşlı ördeklerde tespit edilen ilk bulgu olması nedeniyle önemlidir.

Anahtar kelimeler: *Plagiorhynchus* spp., yeşilbaşlı ördek, Türkiye.

Abstract

A dead mallard duck (*Anas platyrhynchos*) was found in the Ercek district of Van province and was brought into Parasitology Department of Yuzuncu Yil University. After the necropsy, some acanthocephalans were found in the intestinal wall of the mallard duck. Acanthocephalans were identified as *Plagiorhynchus* spp. according to their morphological peculiarities. It is important because this case is the first report of this infection in a mallard duck in Turkey.

Keywords: *Plagiorhynchus* spp., mallard duck, Turkey





Anas platyrhynchos, the mallard duck, is a bird that belongs to the Anatinae subfamily and the waterfowl family Anatidae. It lives a wide range of habitat and climates, from Arctic tundra to subtropical regions (John 1981). In spite of several investigations on helminths in chickens and birds, very little has been done on investigating the importance of intestinal helminths in the ducks.

The common internal parasitic infections occur in birds include cestodes, nematodes and coccidians (Badparva et al 2015). Currently, 23 species of the nominotypical subgenus of *Plagiorrhynchus* Lühe, 1911 (Acanthocephala, Plagiorrhynchidae) are considered valid (Amin 2013). *Plagiorrhynchus* spp. infects the small intestine of birds and mammals. The parasites are transmitted by insects of frequently the genera Coleoptera or Orthoptera (Richardson and Nickol 2008).

Ever since, *Plagiorrhynchus* spp. has been commonly identified in various bird species in different parts of the world including East Asia, North America, South Africa and Australia (Schmidt and Kuntz 1966, Moore 1983, Amin et al 1999, Smales 2003). In addition to these several birds, *Plagiorrhynchus* spp. has also been recorded from the gut of predatory birds (Ferrer et al 2004) and of avian scavengers, for example crows (Jones 1928, Smales 2003). The aim of this study was to report the mallard ducks *Anas platyrhynchos* as a new host for acanthocephala of the genus *Plagiorrhynchus* in Turkey for the first time.

The Van province (38° 28' N 43° 20' E) is part of the Eastern Region of Turkey. The city is located around the Lake Van, the largest lake of Turkey. There are approximately 500 bird species so far recorded in Turkey (Sekercioglu 2006). Although approximately 500 bird species were recorded from Turkey, all of the acanthocephala fauna infested these birds are still unknown. Van Lake Basin lies along fly ways of many migratory birds and this closed basin is hosted 213 of the bird fauna found in Turkey (Ozdemir and Durmus 2009). A dead mallard duck (*Anas platyrhynchos*) was found in the Ercek district of Van province and was brought into Department of Parasitology of University of Yuzuncu Yil. After the necropsy, acanthocephalans were found in the intestinal wall of the mallard duck. The parasites were isolated by washing the intestines and passing the contents through a sieve. The collected parasites were kept in 70% ethanol with 5% glycerol. The acanthocephalans were examined with a light microscope to take morphological measurements and to determine sex. *Plagiorrhynchus* spp. was identified according to literatures McDonald (1988) and Dimitrova (2009b).

Identification of parasites (all female): Total length 10 mm approximately (figure 1). Trunk elliptical, narrowed posteriorly to proboscis, 9.07 mm long and 1.32-1.57 wide. Proboscis cylindrical and 0.924 mm long, 0.20-0.30 mm wide at base (figure 2). Proboscis armament consists of 20-24 longi-



Figure 1. The light microscopic view of *Plagiorrhynchus* spp

tudinal rows of 15-18 hooks. Hooks similar shape and 70-75 μ m long. Eggs 45-60 μ m by 17-30 μ m oval.

Worms of the phylum Acanthocephala are known as spiny-headed or thorny-headed worms due to the nature of their holdfast organ, called a proboscis. Animals of all vertebrate classes serve as definitive hosts for acanthocephalans (Richardson and Nickol 2008). Birds harbor more species than do mammals. Species of acanthocephalans from avian hosts are mainly represented by a few broadly distributed genera and are harbored by birds of relatively few taxonomic orders. Waterfowl (Anseriformes) are the most heavily parasitized group of birds with acanthocephalans species. Species of the genus *Corynosoma* and *Polymorphus* are the most common forms in waterfowl. The genera *Plagiorrhynchus* spp. is one of the most common forms in shorebirds (Charadriiformes) (Richardson and Nickol 2008). Although *Plagiorrhynchus* spp. has already been reported parasitizing American Robins, European Starlings and domestic fowl (Holloway 1966), to the authors' knowledge the infection in Mallard duck has not been previously recorded. However, the finding of six female specimens allowed identification to the genus level only, providing the first evidence of acanthocephala of *Plagiorrhynchus* parasitizing Mallard duck.

Consequently, these findings highlight the importance of postmortem evaluations of wild birds. Furthermore, the



Figure 2. Detail of hooks of the proboscis

present study contributes by describing a new host for *Plagi-orchynchus* spp. More research is required to evaluate the possible damage caused by acanthocephalan infections and other helminth infections in birds.

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