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The study of Lico contamination by Haemoproteus spp in Sistan region

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ABSTRACT: Lico with Scientific name Turdoides Caudatus and English name Common Babbler is one of the wild life birds that live in southeast of Iran, in Sistan region. Parasitic pollutions are one of the main factors in decrease of growth and emerge of mortality in birds. In this study for the purpose of determining amount of Lico contamination to haemoproteus in summer 2014, we prepared blood smears from 50 licos and after staining with Gimsa solution, they examined with optical microscope. The results showed that 14 percent of licos were afflicted by Haemoproteus. Statistical analysis showed that significant differences exist between two genders of male and female in affliction by this parasite. Control of insects that carrying infection can have an important role in control of this disease in wild life.

Keywords: *Haemoproteus* spp, Lico, Blood parasite, Sistan

INTRODUCTION

Common Babblers are one of the wildlife birds that have wide ranges. According to available information, their numbers still have not reached the threshold of vulnerability. These birds have extended in tropical regions such as Iraq, Iran, Afghanistan, Pakistan and India. The bird can be found in arid and arable areas with shrubs and scattered trees in South East Iran (Mosavi *et al.,* 2011). Viral, bacterial and parasitic diseases are always threatening the bird population wildlife. Protozoan diseases are usually seen in poultry and the other birds (Saif *et al.,* 2008). Haemoproteus species contains a lot of protozoan intracellular parasites and has extended in the birds all around the world (Graczvk *et al.,* 1994). This parasite is the most common blood parasite in birds and has been reported 67% of the bird species (Cains and Bennet, 1992). Haemoproteus infection often occurs in warm climate areas which there are carriers and host birds. Disease transmission occurs by biting Diptera of the ceratopogonidae and hippoboscidae family (Saif *et al.,* 2008). The asexual evolution of parasites occurs in the bird's blood environment and sexual evolution occurs in carrier flies (Sa, 1995). Pathogenicity of the genus varies from changes in physiology to death, depends on the parasite species (Donovan *et al.,* 2008 and Marzal *et al.,* 2005). Symptoms of the disease in experimental infection contains lameness, diarrheal, depression, weight loss and anorexia. Sometimes anemia and enlargment of the liver are seen in this disease, too (Saif *et al.,* 2008). So far, many studies have been done in this field on the pigeon, dove and domesticated poultry (Adriano and Cordeiro, 2001; Youssefi and Rahimi, 2011; Islam *et al.,* 2013). But the pathogenicity of this parasite has been little noticed in wildlife birds, therefore, in this study, we evaluated the Common Babbler contamination rate with Haemoproteus species.

METHODS AND MATERIALS

50 Common Babblers (28 female and 22 male) were collected by trapping from different regions of Sistan. Blood samples were collected from the wing vein to prepare the blood smear. Thin smears prepared and dried expose to air. Smears fixed with methanol and colored with Giemsa solution. Used the optical microscope with × 1000 magnification for searching Haemoproteus species. The results were analyzed with SPSS analysis software.

RESULTS

Collected results shows that 14% of Common Babblers contaminated with Haemoproteus species. Which 17.85% females (5 numbers) and 9.09% males (2 numbers) were contaminated.

Table1: The rate of contamination to Haemoproteus according to sex.

Sex	Total	Contaminated	Contamination rate
Male	22	2	9.09
Female	28	5	17.85

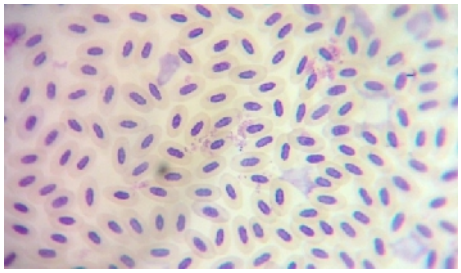

Fig. 1. Hhaemopotreuscolumbae in Common Babbler's RBCs.

The results showed the significant differences in contamination rate between the two sexes of female and male (p-value<0.05). The viewed *Haemoproteus* species determined *Haemoproteus columbae* according to diagnostic key (Fig. 1.).

DISCUSSION

This is the first study to evaluate the Common Babbler's contamination with Haemoproteus species. The pathogenicity of the *Haemoproteus columbae* is usually low but an acute infection has been reported that causes severe losses in young pigeons (Dey *et al.,* 2010). Pigeons contamination rate has been reported 6.86% which contamination with *Haemoproteus columbae* has been reported more than 30% (Youssefi and Rahimi, 2011). Quails contamination rate with Haemoproteus species has been reported 12.5% (Islam *et al.,* 2013). In wild turtle dove in Brazil contamination with Haemoproteus has been reported from 19.3% to 100% (Adriano and Cordeiro, 2001). Parasitic contamination rate differs in different part of the world. These differences may relate to the variety of the geography and the frequency of the Haemoproteus carriers (Nematollahi *et al.,* 2012). Bird's behavioral aspect such as nesting behavior and some natural physiological conditions may be make some species more prone to infection (White *et al.,* 1998). Female's more affected and this may be due to female behavioral habits that is because of their presence in the nest and feeding the chickens which leads to more contact with disease carrier insects. Controlling the disease carrier insects can cause a significant role in controlling the bird's wildlife.

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