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A STUDY OF PARASITIC INFECTION IN CAMEL AND LLAMA AT GIZA ZOO (EGYPT)

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Abstract

Gamels and llamas from Giza zoo (Egypt) were examined for gastro - intestinal parasites. *E. bacteriani, E. dromedarii* and *E. pellerdyi* were the predominant *Eimeria* spp. found in 7 Zoo camels. The infection rate reached its peak during September, while the lowest was during winter . Camels had *Trichuris* sp., *Capillaria* sp. and *Trichostrongylus* spp. eggs, while llamas had *Trichostrongylus* spp. eggs only.

INTRODUCTION

Though camel is an economically important animal, yet, little information is available regarding its parasitic diseases. There are very few reports on the incidence of gastrointestinal protozoan parasites in camels and llamas at the Giza Zoo (Egypt).

The effects of protozoan parasites on the health of camels and diagnosis of infection is very important, as protozoan parasites are the cause of severe diseases among camels throughout Africa and Asia. A number of protozoan parasites including Trypansoma, Theileria, Toxoplasma, Eimeria have been reported to occur in camels (Biod *et al.* 1986).

Changing in camel husbandry practices leading to intensificantion of production could lead to an increase in the prevalence of infection with gut dwelling protozoa

such as *Eimeria* spp. (Higgens 1986). Thus , the present study deals with a brief description of the most prevalent species infecting camels and llamas in Giza Zoo (Egypt).

MATERIALS AND METHODS

At Giza Zoo, nine camels (bacterian camels) and nine llamas (3 domestic , and 6wild ones) from Asia belonging to family Camelidae were examined for gastrointestinal parasitic infections.

Fresh faecal samples from adult camels (*Camelus bacterian*) and llamas were collected separately in clean plastic bags during the year 1991. Each sample was examined by direct smear flotation method using saturated solution of sodium chloride and sedimentation techniques (Soulsby 1982). Recovered oocysts were examined fresh in feces, mean measurment of about twenty fresh ones of each species and about ten fields have been examined. For sporulation of Eimeria oocysts, the fecal samples were incubated individually in Petri-dishes at room temperature (25-28^{O}C) in 2.5% aqueous solution of potassium dichromate.

RESULTS AND DISCUSSION

Out of the nine camels and nine llamas examined for gastrointestinal parasitic infection, 7 camels were found positive for *Eimeria* spp., oocysts and helminth infections, i.e. *Trichuris* sp., *Capillaria* sp. and *Trichrostronglus* spp. eggs, while the other two were negative . On the other hand , 6 wild llamas were found negative for gastrointestinal parasites, the other 3 domestic llamas were found positive for *Trichrostronglus* spp. only.

In the present study , oocysts isolated from the 7 zoo camels are *E. bocteriani* (Fig 1), *E. dromedarii* (Fig. 2), *E. pellerdyi* (Fig. 3) species. Differentiation was

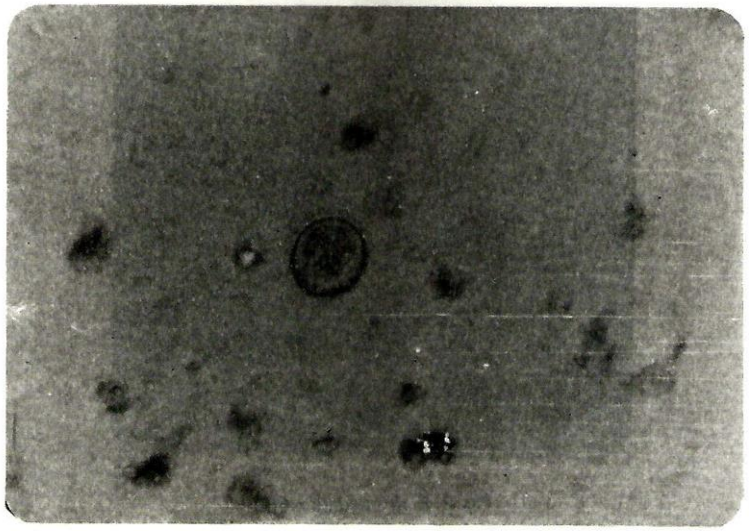

Fig. 1. E. bactriani x 600

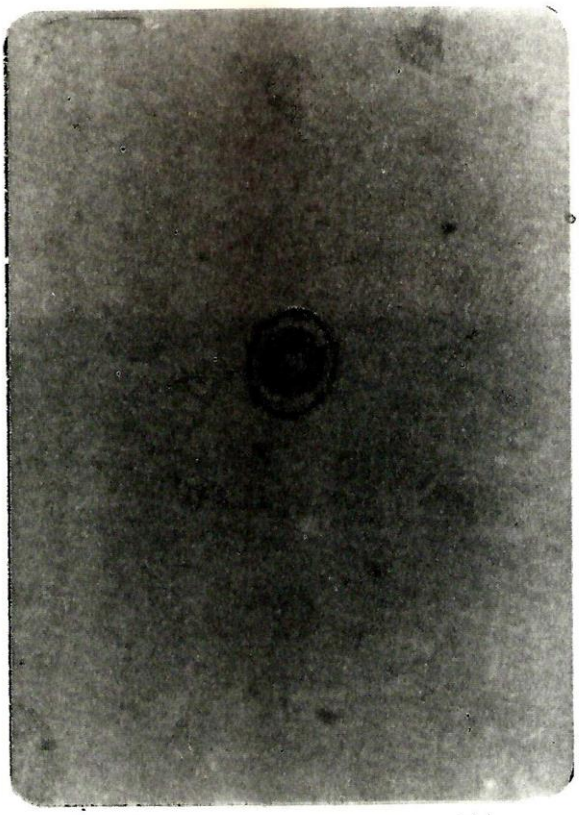

Fig. 2. E. dromedarii x 600

Fig. 3. E. pellerdyl x 600
Fig (1)

based on the brief description of occysts and details shown in Table 1. Species differentiantion of the present study were compared with the detailed characteristics of each species listed by semiquantitatively estimation of oocysts in the feces.

Animals were found infected throughout the year, but the proportion of infection was increased appreciably in the period from July to October. The peak of infection occurred during september, and the lowest was in November then December , January and February. The peak of infection during September may be attributed to the favourable environmental conditions for oocysts to reach the infective stage.

Our results agree with those cited by Rutter (1967) , Levine and levine and Ivens (1970) , Pellerdy (1974) and Gill (1976) Concerning the identification of isolated species of *E. bacteriani* , *E. dromedarii* and *E. pellerdyi.*

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Table 1. Characteristics of Eimeria species from Zoo camels Giza .

Eimeria species	Oocyst characters				Sporocyst characters		
	Size (micron)	Shape	Wall	Micropyle	Stieda body	Sporocyst residual body	Sporulation time
E. boctriani	21.1-25.2x19-21.3	Spherical	Two layers wellowish Brown	Present	Absent	Present	15-18 days
E. dromedarii	25.2-29.4 x 21	Ovoid	Two layers light brown	Present & capped	Absent	Absent	10-15 days
E.pellerdyi	23.1-25.2x16.19	Ovoid	Two layers light yel-low	Absent	Present	Absent	6 days

Table 2. Monthly semi-quantitative evaluation for the prevalence f Eimeria species in camel s faeces at Giza Zoo (January- Deceber 1991).

Month	Positive				
January	-	+	-	-	-
February	-	+	-	-	-
March	-	-	++	-	-
April	-	-	++	-	-
May	-	-	++	-	-
June	-	-	++	-	-
July	-	-	-	+++	-
August	-	-	-	+++	-
September	-	-	-	-	++++
October	-	-	-	+++	-
November	-	+	-	-	-
December	-	+	-	-	-

- = no oocyst
+ = one occyst / field
++ = 1-5 occysts/ field
+++ = 6-20 oocysts/field
++++ = more than 20 occysts/ field

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دراسة العدوي الطفيلية في الجمال واللاما في حديقة الحيوان بالجيزة (مصر)

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تم فحص الجمال واللاما بحديقة الحيوان بالجيزة للطفيليات المعويه فوجد أن هناك ثلاثة أنواع من الايميريا : أيميريا بكتيرنيا وايميرياد روما داري وايمريا بلليردي . وهذه الأنواع وجدت في سبعه جمال بالحديقه ولم توجد في اللاما

وجد أن معدل العدوي يصل الي نهايتة في شهر سبتمبر، بينما يقل أثناء فصل الشتاء ، ووجد بالجمال بويضات انواع ديدان ترايكيوريس ، كابلاريا ، ديدان تريكوسترونجيلس ، بيما في اللاما بويضات ديدان تريكوسترونجليس.