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SOME CONTRIBUTION ON THE COCCIDIAL PARASITES IN DOMESTICATED GEESE IN DAKAHLIA PROVINCE-EGYPT.

By

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SUMMARY

Examination of 425 geese from different localities in Dakahlia province during a period extended from May 1993 till April 1994 revealed that 25.88% were suffering from coccidiosis.

Five species of Eimeria parasites were detected in the examined geese, one renal; *E.truncata* and four intestinal ; *E.nocens, E. anseris, E.stigmosa* and *E.Parvula* (Tyzzeria parvula) with the ratio of 12.47%, 7.52%, 5.64%, 4.94% and 16.70% respectively.

The incidence rates of renal , intestinal and mixed coccidiosis in geese were 5.88%, 13.41% and 6.58% respectively.

E.truncata showed high rats of infection in winter season (24.65%), also all the intestinal Eimeria recorded were with high incidence in winter except *E.stigemosa* which was high in auumn.

INTRODUCTION

Coccidiosis is one of the most important depletating parasitic disease a attacking geese. There are two forms of coccidiosis in geese , renal (Railiet and Lucet 1981) and intestinal ones (Pellerdy, 1965) each of which is caused by certain species of Eimeria.

According to Lerche (1924) the mortality rate in renal coccidiosis may rise to 80 and even 100% in goslings. Pellerdy (1951) diagnosed intestinal coccidiosis with mortality rate about 30%.

In Egypt, little is known about the Eimerial genera and species which cause intestinal coccidiosis (Fayek et al., 1991) and no publication denoted the renal one.

So the aim of the present study is to throw the light on the coccidiosis in domestic geese in Dakahlia Porovince

MATERIAL AND METHODS

During a period extended from May 1993 till the end of April 1994, a total of 425 domestic geese of difefrent ages (Juvenile till 3 months and adult) were collected from different localities in Dakahila Province.

Collection of coccidial oocysts was tried by using concentration flotation technique as described by Soulsby (1968).

The oocysts in the kidney's collecting tubules and ureters were washed by normal physiological saline and collected by using the same technique mentioned before.

Identification of different specific of Eimeria was carried out according to Pellerdy (1965) and Gajadhar et al., (1983)., depending on the shape of occysts and sporulation time.

RESULTS

The collected oocysts from kidney tubules and ureters were ovoid to elliposidal in shape 20-27 u in length and 16-22 u in width with truncated narrow end covered with micropyle. The oocystic wall was smooth and colourless formed of two layer. The outer, layer was somewhat thick and covered the micropyle forming a collar around it and the inner layer was thin. The sporont was spherical to ovid in shape, located centrally with a clear space around it, Fig. (1). The sporulation time in 2.5% pot. dilcromate solution at 20-25°C ranged from 3-4 days.

Table 1: Prevalence of coccidiosis in geese in Dakahlia Province during a period from May 1993-April 1994.

Total No. exam	-Ve	+ ve	Total infection rate
425	315	110	25.88%

Table 2: Seasonal incidence of renal, intestinal and mixed coccidiosis in geese in Dakahlia province

Season	Numbers of exam. geese	Intestinal		Renal		Mixed	
		No	%	No	%	No	%
Summer	76	5	6.57	0	0.00	0	0.00
Autumn	101	21	2079	1	0.99	4	3.96
Winter	142	19	13.38	16	11.26	19	13.38
Spring	106	12	11.32	8	7.54	5	4.71
Total	425	57	13.41	25	5.88	28	6.58

Table 3: Seasonal prevalence of E. truncata among juvenile and adult geese in Dakahlia Province during the period of examination.

Season	No. of exam. geese	No. of juvenile geese	+ve		No. of adult geese	+ve		Total infection rate
			No.	%		No.	%	
Summer	76	2	0	0.00	74	0	0.00	0.00
Autumn	101	8	2	25.00	93	3	3.33	4.95
Winter	142	92	30	32.60	50	5	10.00	24.64
Spring	106	54	12	22.22	52	1	1.92	12.26
Total	425	156	44	28.20	269	9	3.34	12.47

Table 4: Population dynamics of different species of intestinal Eimeria infecting geese at different seasons in Dakahlia Province.

Season	No. of exam. geese	E. anseris		E. nocens		E. stigmosa		T. parvula	
		No	%	No	%	No	%	No.	%
Summer	76	1	1.31	1	1.31	1	1.31	4	5.26
Autumn	101	6	6.93	7	6.93	7	6.93	21	20.79
Winter	142	11	10.56	15	10.56	8	5.63	32	22.53
Spring	106	6	8.49	9	8.49	5	4.71	14	13.20
Total	425	24	5.64	32	7.52	21	4.94	71	16.70

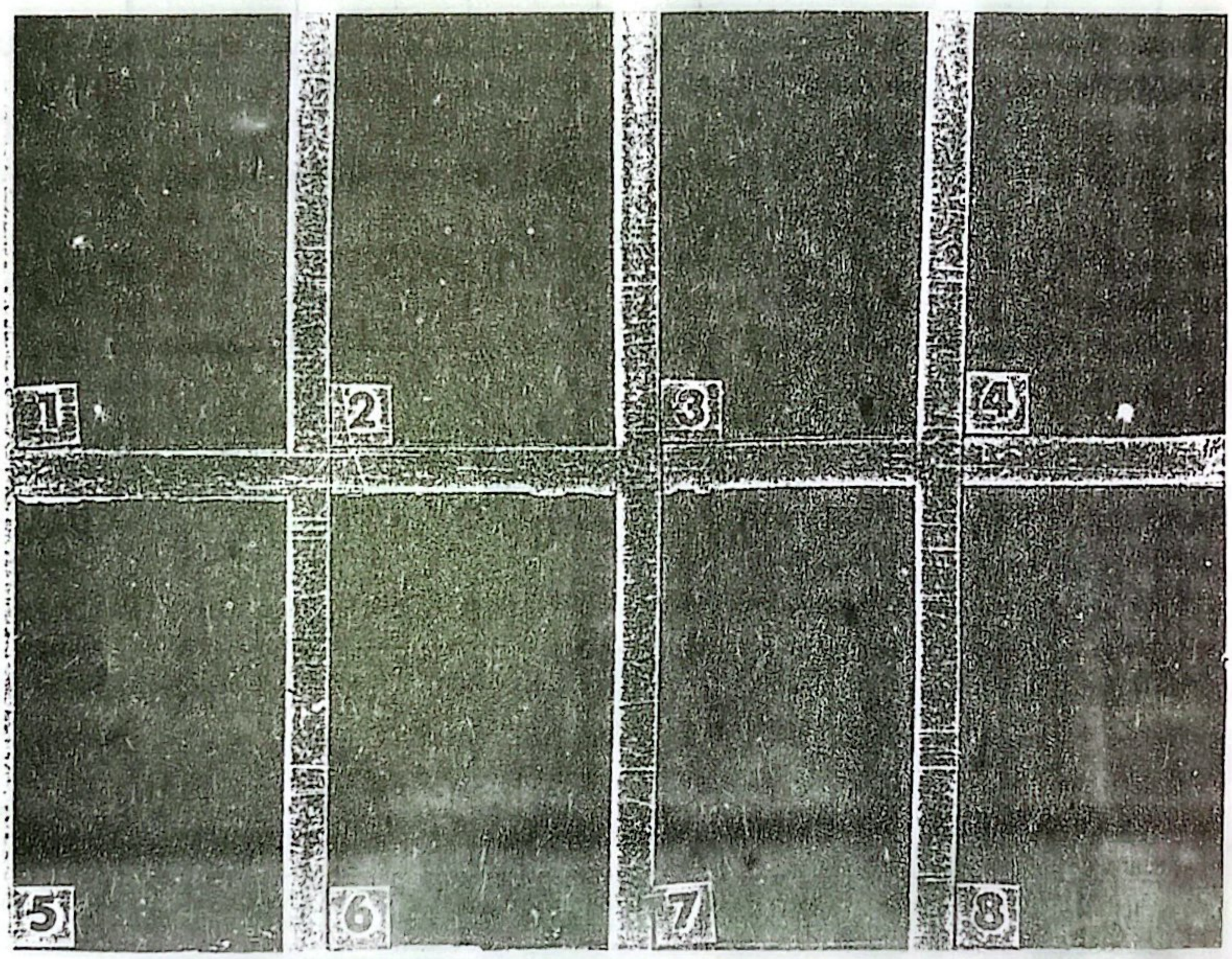
The points of identification of different intestinal coccidia were showen in Table (5) and Plate (1)

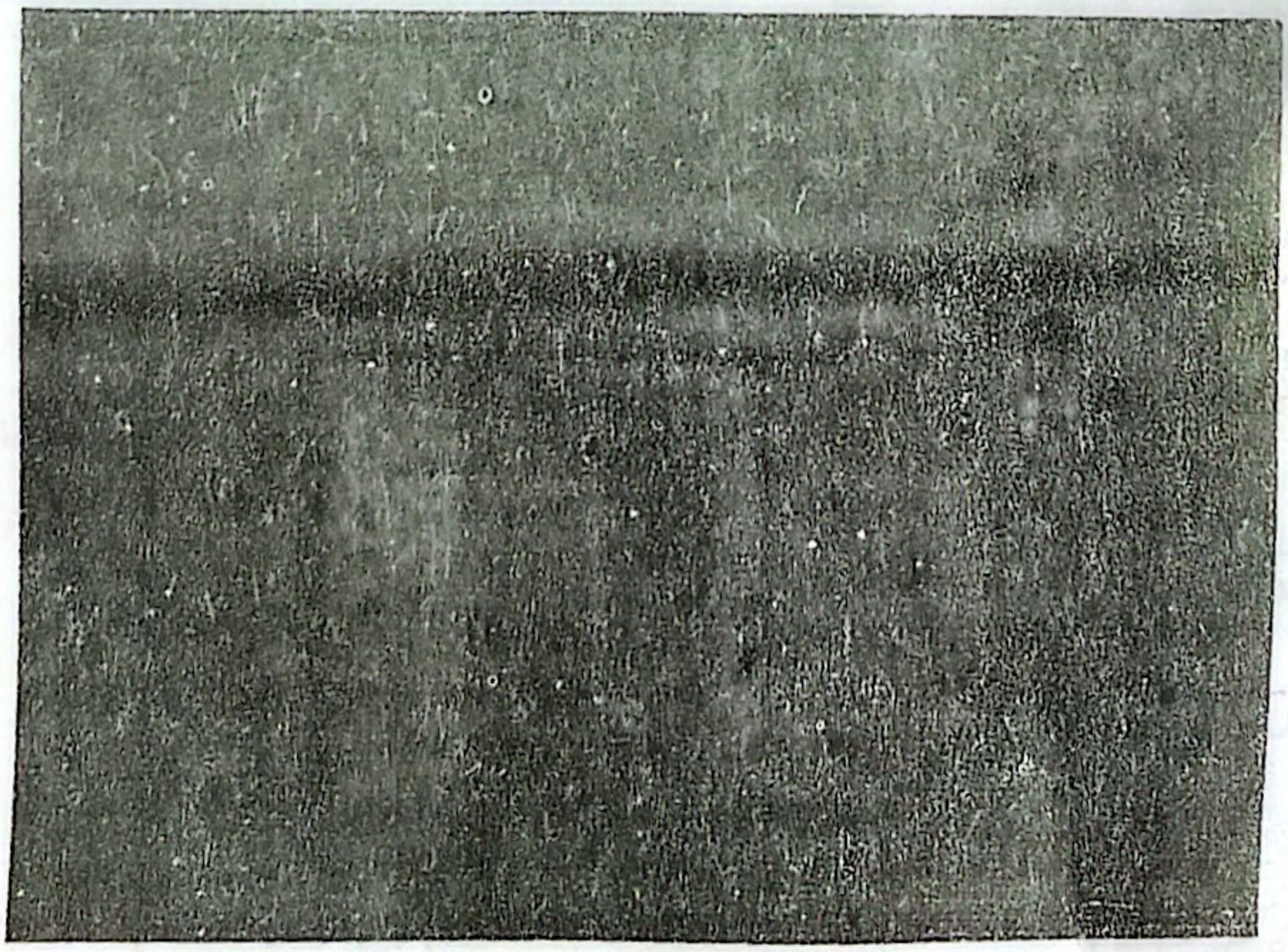
	Shape	Dimension	Sporulation time at 20-25°C
E. anseris	Oval to pyriform with narrow anterior end	16 to 23µ length and from 13 to 18µ in width	2-3 days
E. nocens	Ovoidal to ellipsoidal with flattened end	25-33µ in length and 17-24µ in width	2-5 days
E. stigmosa	Broadly ovoid with narrow end.	17-26µ long and 13.5-19.5µ wide	2-3 days
T. parvula	Spherical to subspherical	11-15µ length 10-13µ width	1-2 days

Plate (1)

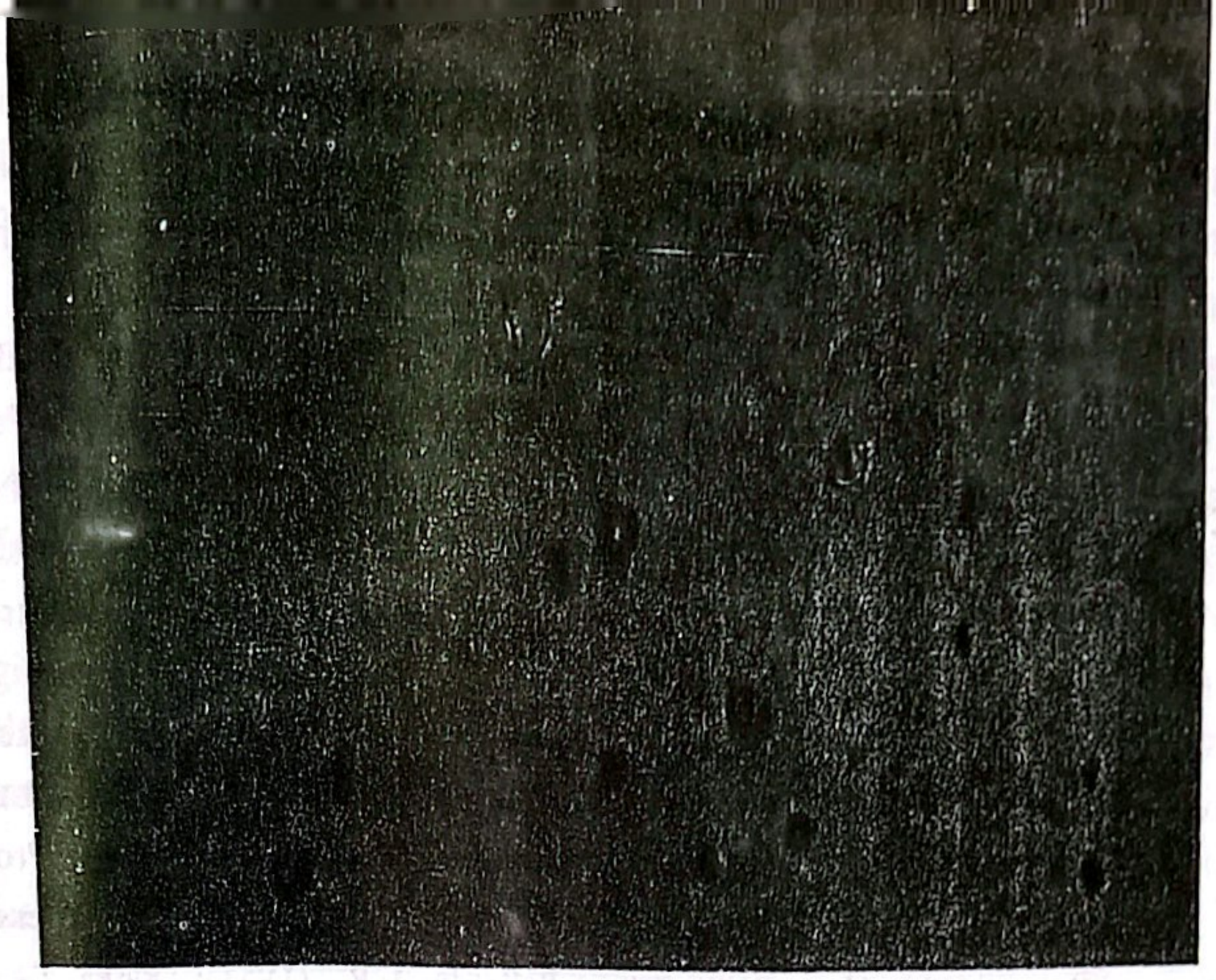
Intestinal Eimeria species sporulated and non sporulated oocysts .

E . anseris | E. nocens | E. stigmosa | T. parvula





E . truncata fresh oocyst (X 400).



Sporulated E . truncata oocyst

Fig (1)

DISCUSSION

In this study, the examination of 425 domestic geese for Eimerial parasites (faecal samples and kidney smears) at different localities in Dakahlia province revealed that 110 (25.88) were infected with Eimeria. This infection rate was intermediate between those detected by Randal and Norton (1973) 70-100% and Sibalic et al. (1962) 7% and Betka and Wilhelm (1976) 2.7%. This variation in the infection rate might be attributed to the variation of climatic conditions, type of food available and species of geee examined.

Dealing with the types of Eimeria recovered from geese, according to shape, dimension and sporulation time, the present study denoted the presence of renal coccidiosis caused by *E.truncata,* with a precentage of 12.47%. This result is considered to be the first record for *E.truncata* in Egypt. The prevalence of renal coccidiosis was high (18.20%) in goslings than in adults (3.34%). This finding is comparable with that recorded by Gajadhar et al., (1983) and Tuggle and Crites (1984). The seasonal dynamics of *E.truncata* was high in winter 24-64%, followed by spring 12.26%, autumn 4.95% and absent in summer (Table 3). These results coincided with these of Gajadhar et al., (1982). Also, Tuggle and Crites (1984) reported a total infection rate of 6.57% and 7.29% in autum and winter respectively. Lastly Clinchy and Barker (1994) found that the prevalence of renal coccidiosis in adult geese was high in autumn followed by spring season.

Regarding to intestinal Eimeria in this task, *E.anseris, E.nocens, E.stigmosa* and *E.parvula (Tyzzeria parvula)* had been recorded. This finding was in agreement with Klimes (1963) , Pellerdy (1965), Soulsby (1968), Hofsted et al., (1984) and Fu et al., (1986).

The total incidence percentages of the recovered species were 5.64%, 7.52, 4.94% and 16.70% (Table 4) for *E.anseris*, *E.stigmosa* and *T.parvula* respectively. All the percentages were high in winter, nearly equal in spring and autumn and low in summer. This observation was not discused before except Fu et al., (1986) who gave the following incidence 43%, 44%, 10% and 3% for *E.anseris*, *E.nocens*, *E.stigemosa* and *T.parvula* respectively without mentioning the effect of climatic conditions. Also, Fayek et al., (1991) added that the prevalence rates of *E.nocens* and *T.parvula* in geese were 12.5% and 27.09* respectively . In this field Soulsby (1982) added that the prevalence of *E.anseis* was generally low and Levine (1985) mentioned that *T.parvula* was rare in domestic geese in the unites states but common in Europe.

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