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DIAGNOSIS OF EQUINE STRONGYLUS WORMS THROUGH THEIR INFECTIVE LARVAE

By

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SUMMARY

Faecal culture of collected faecal samples collected from horses, donkeys and mules showed higher percentage of infestation with strongylus than the concentration floatation technique. The morphology of the 3rd stage larvae of equine strongylus was given. The general and differential characters of each type was studied in details. Tridontophorus species was presently isolated only from donkeys.

INTRODUCTION

Identification of equine strongylus depended mainly on the morphology of the adults as the shape and measurements of the eggs appeared unreliable. Looss (1902) as well as El Assaly (1986) described the adult worms of strongylus infesting donkeys in Egypt. Selim *et al.* (1972) gave a contribution of the larval stages of equine strongylus.

Therefore, it was found necessary to reach proper diagnosis of equine strongylus worms in egypt through theie larval differentiation.

MATERIAL AND METHODS

The identification of the species larvae was attempted out of 50 individual samples from horses. 50 from mules and a similar number from donkeys.

Faecal cultures for the development of larvae were performed by the principle techniques mentioned by Selim et al. (1972); Cotteleer and Fame Ree (1974); Ricketts and Ross (1974) and Georgi and Georgi (1990). The lugol solution was added as mentioned by Georgi and Georgi (1990) before the microscopical examination.

RESULTS

Faecal culture for collection and identification of the 3rd larval stages was conducted to all cllected faecal samples.

Table (I) : Results of examination of faecal samples from equine strongyles by concentration floatation technique and faecal culture

Host	Number of animals	No. of infected animals	% of infection	No. of performed faecal culture	No. of infected animals	% of infection
Horse	50	44	88	50	46	92
Donkey	50	46	92	50	48	96
Mule	50	44	88	50	47	94

Table (2) : Comparative measurements of the infective larvae studied

Name of species	Total length including sheath in μ	Distance from anterior end of genital premordium	Extension of tail sheath in μ	Number of intestinal cells
Strongylus edentatus	780-822 ± 21	288-314 ± 13	280-296 ± 8	18-20
Strongylus vulgaris	710-768 ± 29	276.7-296 ± 9.7	219.8-236 ± 8.1	28-32
Trichostrongylus Axei	650-730 ± 40	322-307 ± 10	26.8-36.7 ± 4.95	16
Trichonema species	727.2-736.8 ± 4.8	226.8-236 ± 4.6	227.6-256.2 ± 14.3	8
Tridontophorus species	682.6-723.2 ± 21.3	306.6-327.8 ± 10.6	232.2-242.7 ± 5.3	18

Faecal samples examination revealed the horses, donkeys and mules, presence of strongylus eggs in horses 88 %, 92 % and 88 % respectively (Table I).

The culture samples examination revealed infestation rate 92 %, 96 % and 94 % among horses, donkeys and mules respectively. Moreover comparative measurements of the infective 3rd stage strongylus larvae were displayed in (Table 2).

Strongylus edentatus (Fig a) appeared to be 780-822 ± 21μ in length. The oesophagus was filariform being about 1/5th of the total length. The intestinal cells were 18-20 elongated cells with ill-defined anterior and posterior borders. The germinal primordium was located. at a distance of 288-314 ± 13 from the anterior end with the tail blunt and ending gradually. The tail sheath was filamentous and long reaching 280-290 ± 8 μ beyond the tail of the larvae.

St. vulgaris (Fig b) was 710-768 ± 710-768 ± 29 μ in length and relatively broad. The oesophagus was about 0.18of the total length. The intestinal cells were 28-32 with well defined long column ahape. The germinal primordium was located at a distance of 276.7-296 ± 9.7 μ from the anterior end. Extension of sheath beyond the tail of the larvae and rangeb between 219.8-236 ± 8.1 μ.

trichostrongylus Axei (Fig c) the length of the larvae ranged from 650-730 ± 40 μ. The oesophagus was located about 240-250 μ from the anterior end. The intestinal cells were 16 in number being clear with well defined anterior and posterior borders. The germinal primordium lied at a distance ranged from 322-307 ± 10 μ from the anterior end. The tail sheath was short and conical and its extension beyond the tail of the larvae ranged from 26.8-36.7 ± 4.95 μ.

Trichonema warms (Fig d) were 727.2-736.8 ± 4.8 μ in length. The oesophagus was about 0.22 of the total length of the body. The intestinal cells were 8 rectangular cells. The germinal primordium was located at a distance ranged from 226.8-236 ± 4.6 μ from the anterior end. The tail sheath was long and filamentous and its extension beyond the tail of the larvae reached about 227.6-256.2 ± 14.3 μ.

Tridontophorus worms (Fig e) were only isolated from donkeys and their total length ranged from 682.6-723.2 ± 21.3 μ. The oesophagus was about 0.24 of the total length. The intestinal cells were 18 and rectangular in shape. The germinal primordium was located at a distance 306.6-327.8 ± 10.6

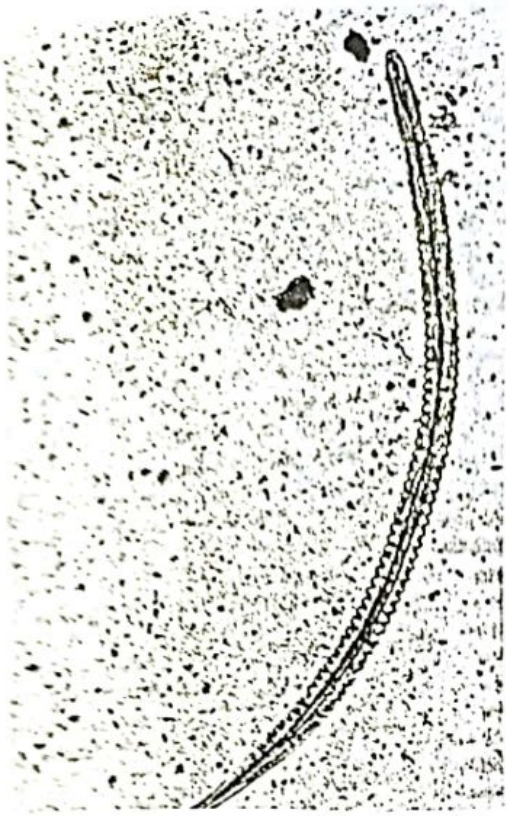

Fig. (a): *Strongylus edentatus*

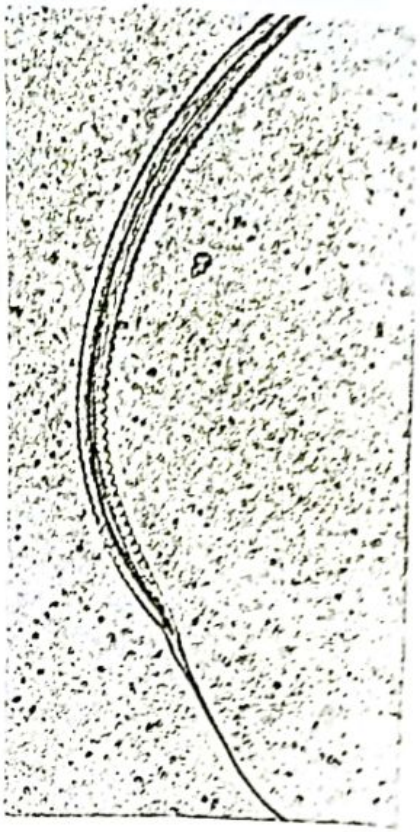

Fig. (b): *Strongylus vulgaris*

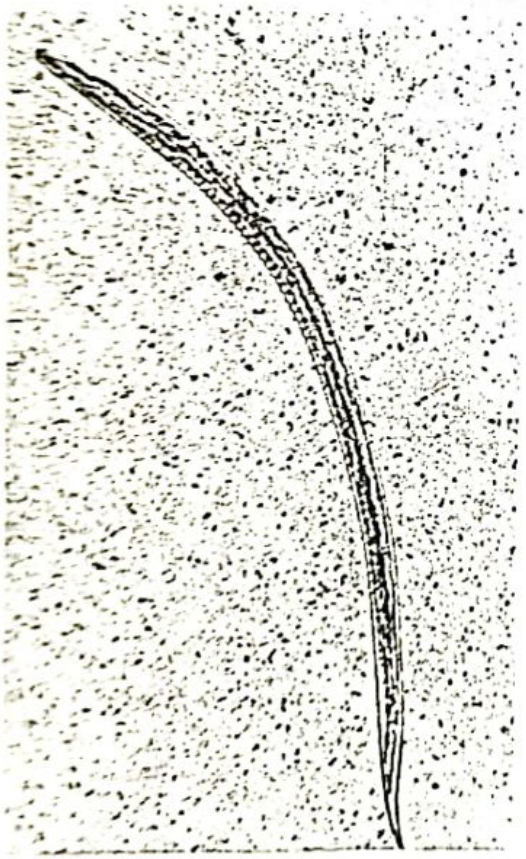

Fig. (c): *Trichostrongylus Axei*

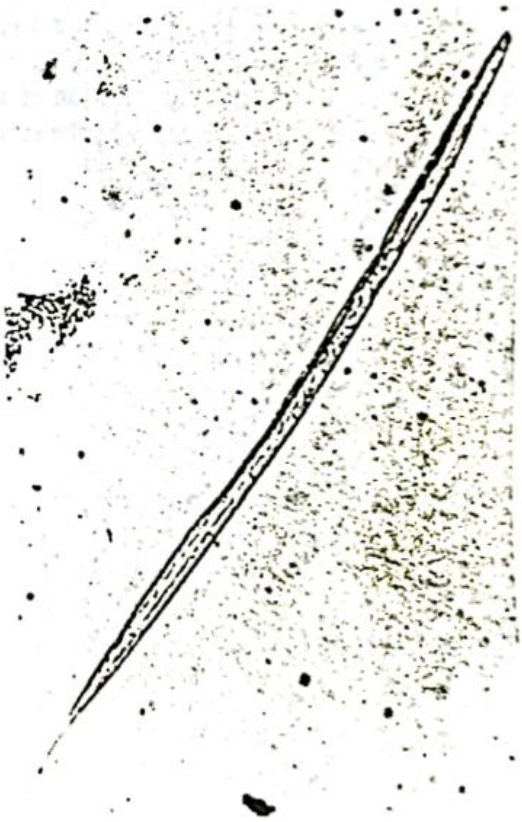

Fig. (d): *Trichonema species*

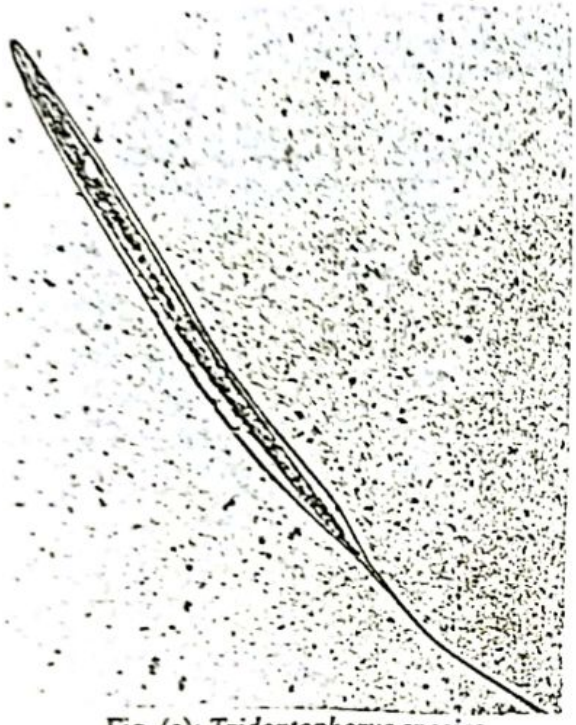

Fig. (e): *Tridontophorus species*

μ from anterior end. The tail sheath was long and filamentous with its extension beyond the tail of the larvae reached about 232.2-242.7 ± 5.3 μ.

DISCUSSION

Faecal cultures of all collected samples from the investigated horses, donkeys and mules showed higher percentage than their coprologic examination, this might be due to light infection of some specimens which escape detection by the concentration floattation technique.

The detailed morphological characters of the investigated larvae were similar to that mentioned by Selim *et al.* (1972): Cotteleer and Fameree (1974): Ricketts and Rossdale (1974): Technical Bulletin No18 (1979) and Georgi and Georgi (1990). More over was of interst to record the presently noticed position of the genital primordium. beside that Tridontophorus worms were only isolated from donkeys during the present study.

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