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Parasitic phase of *Anocentor nitens* (*Acarina : Ixodidae*) in cattle

RODRIGUEZ DIEGO (J.), JIMÉNEZ (T.). Phase parasitaire d'*Anocentor nitens* (*Acarina : Ixodidae*) chez les bovins. *Revue Élev. Méd. vét. Pays trop.*, 1989, **42** (2) : 231-232.

La phase parasitaire d'*Anocentor nitens* (Neumann) chez les bovins a été étudiée. Le stade larvaire est présent jusqu'à 15 jours après l'infestation (post-infestation : p.i.) en même temps que les nymphes à partir du 8ème jour p.i. Des nymphes ont été observées jusqu'au 23ème jour après l'infestation et des adultes ont été vus à partir du 15ème jour p.i. Les tiques mâles se sont montrées actives à partir du 17ème jour p.i. et le détachement des femelles gorgées a commencé entre le 22ème jour et le 24ème jour p.i. Un détachement massif est apparu à partir du 28ème jour p.i. Les sites préférentiels des stades parasitaires étaient les oreilles et le cou (parois latérales). *Mots clés* : Bovin - *Anocentor nitens* - Tique - Stade parasitaire - Cuba.

INTRODUCTION

Different authors (3, 4, 6) have undertaken studies regarding the biology of the tropical horse tick, *Anocentor nitens* (Neumann). In Cuba the pre-parasitic phase of *A. nitens* in cattle has been documented (1). However, studies of the parasitic phase are needed in order to have an integral knowledge of the tick's biology. This would allow a more complete assessment of its behaviour in our environment and favour the effectivity of tick control programmes.

MATERIAL AND METHODS

Engorged females of *A. nitens* from naturally infested cattle were collected and placed in optimal conditions for oviposition (28 ± 1 °C and 80 per cent relative humidity). Eggs were collected in vials and maintained under identical conditions ; 10 to 15-day-old larvae were used.

Three 1-year-old calves were infested with ± 16,000 larvae each. These animals were checked every 24 hours through the larval period by means of random scraping of areas with major abundance, a total count of 40 individuals being performed. After nymphal development, counts were made every 48 hours up to the end of the experiment.

Data concerning preferential sites of attachment of different tick stages on the animals were recorded. Percentages of each sampling were calculated considering the average of the results obtained for the three infested calves.

RESULTS AND DISCUSSION

Figure 1 shows the development of the different parasitic stages of *A. nitens*. Engorged larvae were seen 5 days after hosts were exposed to the ectoparasite. The moulting process began 6 to 7 days post infestation (p.i.) and the last moulting larvae were observed 14 days p.i. HOOKER *et al.* (1912) (cited by STRICKLAND *et al.*, 6) found larvae moulting to nymphae up to 16 days p.i. In the present study larvae were mainly located on ear, neck (lateral side) and anus.

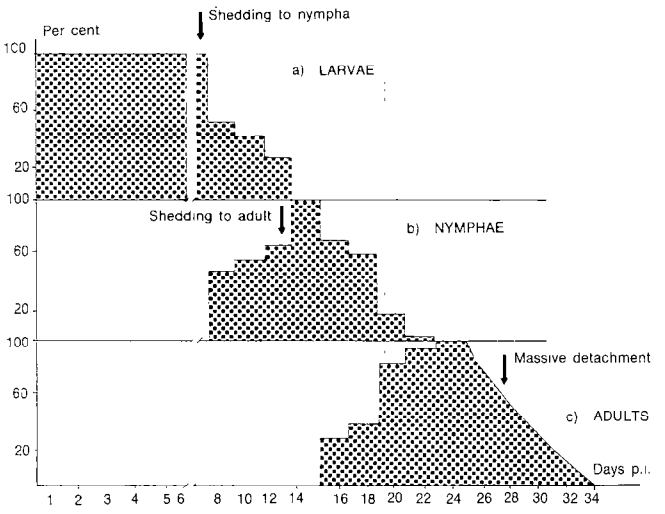

Fig. 1 : Development of parasitic phases of A. nitens *in cattle.*

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Reçu le 05.09.88, accepté le 27.09.88.

The first nymphae began to be seen 8 days post infestation (p.i.), concomitant with larvae in moulting phase (Fig. 1). Moulting from nympha to adult was evident 12 days p.i., more pronounced 15 days p.i. This agrees with the day-range reported by HOOKER *et al.* (1912). After 14 days p.i. the nymphae coexisted with adults. Last nymphal stages were seen 23 days p.i. During this period nymphae were mainly located on ears and neck (lateral side) ; ticks were scarce on the perianal area.

Adult stages were detected 16 days p.i., mainly on the ears, as well as on the lateral sides of the neck. MOREL (5) states that *A. nitens* attaches itself to predilection sites according to the structural characteristics of the hypostome (short), the interior of the ear being the best place. Males were observed with active movements from day 17 p.i. ; the end of the parasitic stage (beginning of detachment of the first engorged females) was determined as 22 to 24 days p.i. This does not agree with HOOKER *et al.* (1912) who report different periods, although in accordance with DRUMMOND *et al.* (3) in cattle infested with *A. nitens*. This phase is usually longer than the pre-imaginal phases of Ixodids (5), and this was also evident in our study. The end of the parasitic phase with massive detachment of engorged females of *A. nitens* occurred 28 to 34 days p.i. DRUMMOND *et al.* (3) state that this phase ended 35 days p.i.

The period from tick larval infestation to mature stage development, in Ixodids, depends primarily upon environmental temperature (2, 5). In contrast with Argasid ticks, Ixodids are affected by temperature in terms of feeding and the complex development process of different tick stages. This could explain that our results are similar to those described by DRUMMOND *et al.* (3) under other environmental conditions, since the body temperature of one-host ticks depends on the host's body temperature ; this is maintained relatively stable in a 5 to 40 °C range of environmental temperature because cattle are homoiothermal (2).

Several engorged females that seemed normal and were expected to detach, failed to do so and had to be manually detached. Similar observations have been reported for cattle infested with *A. nitens* (3) and *Dermacentor albipictus* (4). This behaviour could be caused by some type of disorder in Ixodid ontogenesis (immune reaction, etc.). A few other females were small and only partially engorged, similar to observations reported in the literature (3).

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The parasitic phase of *Anocentor nitens* (Neumann) in cattle was studied. Larval stage was present up to 15 days post-infestation (p.i.), concomitant with nymphae from day 8 p.i. Nymphae were observed up to day 23 p.i., adults being seen from day 15 p.i. onwards. Male ticks disclosed active movements from day 17 p.i. and detachment of engorged females began 22 to 24 days p.i. Massive detachment occurred from day 28 p.i. Preferential sites of parasitic stages were ear and neck (lateral side). *Key words* : Cattle - *Anocentor nitens* - Tick - Parasitic stage - Cuba.

RODRIGUEZ DIEGO (J.), JIMÉNEZ (T.). Fase parasítica de *Anocentor nitens* (*Acarina : Ixodidae*) en ganado bovino. *Revue Élev. Méd. vét. Pays trop.*, 1989, **42** (2) : 231-232.

Se estudió la fase parasítica de *Anocentor nitens* (Neumann) en ganado bovino. La fase larvaria del ixódido se encontró hasta los 15 días posinfestatión (p.i.), concomitante con las ninfas desde el día 8. Las ninfas estuvieron presentes hasta los 23 días p.i., observándose adultos desde el día 15. Los machos mostraron movimientos activos desde el día 17, mientras que el desprendimiento de las teleóginas se inició entre los días 22 y 24 p.i. El desprendimiento masivo ocurrió a partir del día 28. Los estadios parasíticos del ixódido se localizaron preferencialmente sobre oreja y tabla del cuello. *Palabras claves* : Ganado bovino - *Anocentor nitens* - Garrapata - Fase parasítica - Cuba.

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