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## ***Amblyomma marmoreum* on Tortoises of Southern Province, Zambia**

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**ABSTRACT:** Reptiles from Southern Province, Zambia were captured and inspected for ticks. Seven of 18 tortoises (*Geochelone pardalis*) were infested by small numbers of adults and nymphs of *Amblyomma marmoreum*. Under such circumstances, the tick had little apparent effect on the host. None of the 13 specimens representing four species of snakes examined were infested with ticks.

**Key words:** Tortoise, *Geochelone pardalis*, ticks, *Amblyomma marmoreum*, Zambia.

*Amblyomma marmoreum* is a common tick of reptiles in Africa. It has been reported mainly on tortoises and snakes from the southern hemisphere of the continent (Walker and Bezuidenhout, 1973; Norval, 1983). Its ecology and host species have been described by Norval (1975, 1983). Lizards, birds, and wild and domestic mammals are more occasional hosts. In Zambia, *Amblyomma marmoreum* was found only on the puff adder (*Bitis arietans*) by McLeod and Mwanaumo (1978).

During field trips in the area between Kafue and Choma, Southern Province, Zambia, 18 tortoises (*Geochelone pardalis*), one boomslang (*Dispholidus typus*), two puff adders, five black mambas (*Dendroaspis polylepis*) and five spitting cobras (*Haemachatus haemachatus*) were captured and inspected for ticks. These specimens were collected during two consecutive rainy seasons (1986–1987 and 1987–1988), lasting from November through March in Zambia. This is the tortoise's period of maximum activity. In the dry season (May to October), when temperatures in Southern Province range from 4 to 30 C, they enter a state of semihibernation (Norval, 1975). The number of tortoises inspected in the two rainy seasons were four and 14, respectively. The area where specimens were collected (15°49' to 16°48'S,

26°30' to 28°2'E) is mainly woodland savanna (miombo) and has an average annual rainfall of about 800 mm. Livestock are abundant.

Seven of the 18 tortoises were parasitized by *A. marmoreum*. Thirteen adult male ticks (individual tortoises with 1, 0, 1, 2, 5, 3, and 1, respectively), seven adult females (2, 1, 2, 0, 1, 1, and 0, respectively) and five nymphs (0, 1, 0, 0, 0, 0, and 4, respectively) were collected. Larvae were not found. Ticks were not observed on any of the 13 snakes.

The tortoises captured in this study hosted few ticks. This differs from data reported by workers in the Republic of South Africa. Norval (1975) found as many as 89 adult ticks and 67 nymphs on a single tortoise. Walker and Bezuidenhout (1973) reported such heavy infestations of *A. marmoreum* on pet tortoises that it was necessary to treat the reptiles with acaricides. In heavy infestations the hosts, including bird chicks, may die of exsanguination (Walker and Bezuidenhout, 1973). In contrast to South Africa in neighboring Zimbabwe small numbers of this tick were recorded on local reptiles (Norval, 1983). The low infestations recorded in our study may be due to the scarcity of the parasite, because of unfavorable environmental conditions, and the possible low population density of tortoises in the area. Further fieldwork on the ecology of *A. marmoreum* in Zambia is needed to substantiate these hypotheses.

*Amblyomma marmoreum* immature stages can feed on different birds and wild mammals while adults feed on hosts belonging to the orders Chelonia and Squamata (Theiler and Salisbury, 1959; Norval, 1975, 1983). The latter author concludes

that this tick is "of little or no importance for farmers" because it does not transmit heartwater or other livestock diseases (Norval, 1975). *Amblyomma marmoreum*, collected in a Crimean-Congo haemorrhagic fever endemic area of the Republic of South Africa, did not harbor the virus (Rechav et al., 1987). Thus, there is presently no evidence that this tick is involved in the epidemiology of tick-borne diseases in man and domestic animals. Alternatively, its role in the transmission of diseases within and among different wild-life species should be investigated.

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