

An Instance of Tick Feeding to Repletion Inside a Human Nostril

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ABSTRACT

A single fully engorged nymphal tick of the genus *Amblyomma* was collected from the nostril of a field researcher returning from Kibale National Park, Uganda. While unfed ticks have previously been removed from human nostrils, this is the first time that a specimen so situated was permitted to feed to repletion and detach naturally.

KEYWORDS

Tick, *Amblyomma*, human nostril, Uganda.

Introduction

Ticks (Acari: Ixodoidea) are a relatively small group (about 850 species worldwide) of large (adults 2 to 30 mm in length), obligately hematophagous, ectoparasitic mites of paramount importance in the transmission of disease among domestic and wild mammals; they are second only to mosquitoes as vectors of human disease (Sonenshine et al. 2002). Humans, by virtue of their sophisticated learning and grooming abilities, seldom suffer prolonged tick attachment on parts of the body that are subject to regular visual examination or palpation; among those that do, many are inexperienced children. Thus, cases of tick parasitism of human eyelids, or the eyeball itself, are infrequent (Miyamoto and Miyamoto 1990; Singh et al. 2006), while cases of otocariasis — parasitism of the ear canal — are more often seen by veterinarians than by physicians

(Keirans and Pound 2003). We are aware of just a single record of an attached, blood-engorged tick being mistaken for a hemorrhoid (Chang 1958a, 1958b; see notes on this specimen in Robbins and Robbins 2003). Here we report what we believe to be only the second tick collection from human nostrils, and the first in which a tick so situated was able to feed to repletion.

In 2006, a team from the Yale University Department of Anthropology began long-term research on primates and elephant ecology at Mainaro (lat 0°21'35"N, long 30°23'18"E), a site in Uganda's Kibale National Park, one of the largest (766 km²) protected forests in Uganda. This park is home to multiple species listed as endangered or vulnerable by the International Union for Conservation of Nature and Natural Resources and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Struhsaker 1997; IUCN 2007). The

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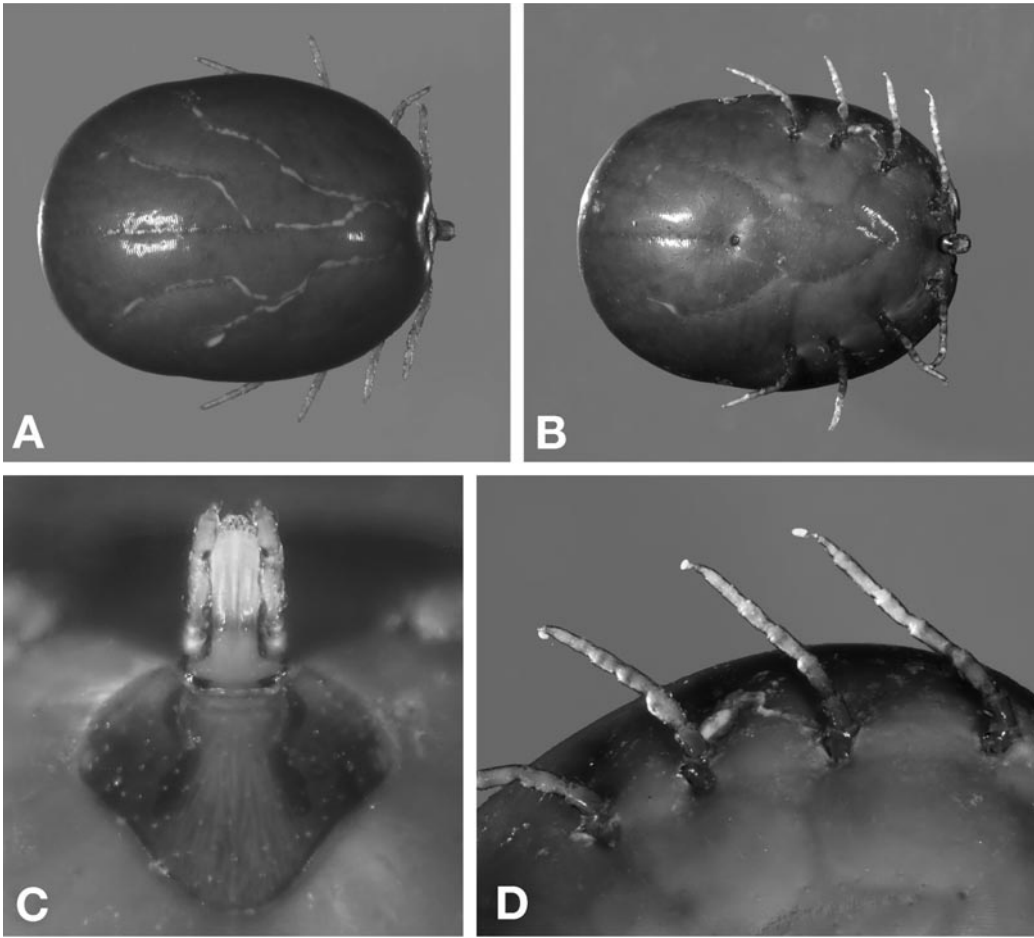


FIGURE 1. Nymphal *Amblyomma* (YPM 412973). A. Dorsal view. B. Ventral view. C. Capitulum and scutum. D. Legs (note coxal spurs).

Mainaro site consists of undulating hills and valleys (elevation about 1200 m) covered in a mosaic of vegetation types, including unlogged mature forest, former homesteads undergoing natural succession, and several areas where succession has been arrested because of elephant activity (Struhsaker et al. 1996; Chapman et al. 1997; Struhsaker 2003; Aronsen and Teelen 2007).

Tick infestation occurred during June 2008 fieldwork at the Mainaro site, while Aronsen was conducting vegetative surveys, primate censuses, chimpanzee nest counts and group follows of gray-cheeked mangabeys (*Lophocebus albigena* (Gray)) in both mature forests and disturbed or reforested areas. On about 29 June 2008, Aronsen noted an unusual sensation in his right nostril and determined that a tick had attached itself

there. Because he was about to depart Uganda, he decided not to extract the tick until his return to the United States, but on 4 July 2008, during a stopover in Amsterdam, the Netherlands, a fully engorged tick was expelled into his hand by a strong sneeze. The specimen was retained and deposited on 24 July 2008 in the Division of Entomology of the Peabody Museum of Natural History, Yale University (catalog number YPM 412973). Subsequently, it was shipped to the Walter Reed Army Medical Center, Washington, DC, USA, where Robbins identified it as a nymph of the pantropical genus *Amblyomma*. On its return to the Yale Peabody Museum, the tick's diagnostic morphological characters were photographed (Figure 1).

Ticks commonly infest the nostrils or nasal cavities of reptiles, birds and mammals, irritating

or incapacitating their hosts and transmitting a range of infectious agents (Amerson 1966; Gladney et al. 1972; Hesse 1985; Cunha et al. 2007). Apparently the only other record of ticks collected from the nostrils of humans is that of Walton (1960), who encountered this phenomenon in the Bunyoro and Kayonza ("Impenetrable") Forests, also in Uganda. Like our case, Walton's tick specimens were nymphal *Amblyomma*, but were described as white, meaning that they had not begun to imbibe blood, although their human hosts reported a mild tenderness when the nose was touched or blown. Walton (1960) speculated that this insignificant reaction might occur if humans were serving as alternate hosts for a tick species that usually infests an anthropoid ape, such as the chimpanzee (*Pan troglodytes* (Blumenbach)). However, while *Amblyomma cohaerens* Dönitz has occasionally been collected from Ugandan *P. troglodytes* and the hamadryas baboon (*Papio hamadryas* (Linnaeus)), this tick chiefly parasitizes the African buffalo (*Syncerus caffer* (Sparrman)) and warthog (*Phacochoerus africanus* (Gmelin)) (Matthysse and Colbo 1987). The former species is common within Kibale. Moreover, subsequent collecting has shown that African primates are more often hosts of the unrelated tick genus *Rhipicephalus*, 12 species of which have been recorded from primates in Africa — exactly one-fifth of the African *Rhipicephalus* fauna (Walker et al. 2000). Because the preimagines (larvae, nymphs) of most Afrotropical *Amblyomma* cannot be determined to species using morphological characters (Robbins, unpublished data), the species responsible for human nasal parasitism in Uganda will remain unknown pending formal rearing studies or molecular genetic analysis.

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