

Amblyomma hebraeum

Bont Tick,
Southern Africa Bont Tick

Last Updated: December 12, 2006

Importance

Amblyomma hebraeum is a hard tick that infests livestock and wildlife. It also bites humans. The long mouthparts of *Amblyomma* ticks make them difficult to remove manually; these ticks also leave large wounds that may become infected by bacteria or infested by screwworms. *A. hebraeum* can transmit *Ehrlichia ruminantium* (formerly *Cowdria ruminantium*), the agent of heartwater. This tick also carries *Rickettsia africae*, the agent of African tick-bite fever, an emerging zoonosis in rural sub-Saharan Africa and the Caribbean

Species Affected

Immature *A. hebraeum* ticks feed on small mammals, ground-feeding birds and reptiles. Adult ticks can be found on livestock and wildlife including antelope.

Geographic Distribution

A. hebraeum is found in the tropics and subtropics. It prefers moderately humid, warm savannas. This tick is endemic in African countries including South Africa, Zimbabwe, Botswana, Namibia, Malawi, Mozambique and Angola.

Life Cycle

Amblyomma hebraeum is a three-host tick. Immature ticks feed on small mammals, ground-feeding birds, reptiles and all domestic ruminant species. Adult ticks can be found on livestock and wildlife including antelope, and are usually located on the relatively hairless parts of the body. Most are found on the ventral body surface, the perineum, and the axillae, as well as under the tail.

Identification

A. hebraeum is a member of the family Ixodidae (hard ticks). Hard ticks have a dorsal shield (scutum) and their mouthparts (capitulum) protrude forward when they are seen from above. *Amblyomma* ticks are large variegated ticks with long, strong mouthparts. The palps are long; the second segment is twice as long as it is wide. Eyes are present and the festoons are well developed. The males have no adanal shields, accessory shields or subanal shield.

A. hebraeum males are 4.2–5.7 mm long, oval ticks. The capitulum is long, with a rectangular basis; the lateral margins are rounded and the posterolateral angles are rounded and slightly salient. Palpal segment 2 is approximately three times as long as palpal segment 3. The hypostomal dentition is 3.5/3.5. The scutum is smooth and convex, with fine black or brown spots and stripes on a pale greenish-white background. The posteromedian stripe is narrow and is knobbed anteriorly; it rarely reaches the falciform stripe. The poster-accessory stripes are short and well separated from the third lateral spots. The festoons, with the exception of the external festoons, are pale. The scutal eyes are small, slightly convex and circular. The ventral surface is dull greenish-yellow, with distinct ventral plaques and festoons with dark brown scutes (obsolete on the external one). The spiracular plate is moderately large and triangular, with rounded angles. The legs are dark brown, moderately stout, and have apical yellow banding at the distal end of each segment. Coxa I has two unequal spurs, coxae II and III contain salient ridges, and coxa IV has a short stout spur. The tarsi are short and abruptly attenuated.

Unfed *A. hebraeum* females are 5 mm long; engorged females can be up as long as 20 mm. The dorsum is dark greenish-brown or black, punctate and striate. The capitulum is 2 mm long, with a rectangular basis, convex lateral margins and slightly salient posterolateral angles. The palpi are slender; segment 2 is slightly curved and is approximately 2.5 times as long as segment 3. The hypostome is long and slightly spatulate. The dentition is 3.5/3.5. The scutum is ornate, with widespread pale coloration, and is slightly longer than wide. The cervical grooves are deep anteriorly, but become shallow and end in the posterior third of the scutum. The cervical stripe extends posteriorly to the limiting spots and is generally connected to a small frontal spot by a thin line. The scapulae are dark and the punctuations are fine; however, the punctuations are coarser and more crowded in the scapular field. The eyes are pale,



the Center for
Food Security
& Public Health

IOWA STATE UNIVERSITY®

College of Veterinary Medicine
Iowa State University
Ames, Iowa 50011
Phone: 515.294.7189
Fax: 515.294.8259
cfsph@iastate.edu
www.cfsph.iastate.edu



INSTITUTE FOR
INTERNATIONAL
COOPERATION IN
ANIMAL BIOLOGICS

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circular and bulging. The genital opening is level with the interspace between coxa II and coxa III. The legs are thinner than in the male and legs III and IV have pale stripes.

Tick identification to the species level can be difficult, and ticks should be submitted to an expert for identification whenever possible.

Recommended actions if *Amblyomma hebraeum* is suspected

Notification of authorities

Known or suspected *A. hebraeum* infestations should be reported immediately to state or federal authorities.

Federal: Area Veterinarians in Charge (AVIC):
http://www.aphis.usda.gov/animal_health/area_offices/
State Veterinarians:
<http://www.aphis.usda.gov/vs/sregs/official.html>

Control

Measures used to exclude exotic ticks from a country include pre-export inspection and certification that the animals are free of ectoparasites, quarantines upon entry, and treatment with acaricides. In countries where *A. hebraeum* is already present, acaricides can eliminate the ticks from the animal, but do not prevent reinfestation. Three-host ticks spend at least 90% of their life cycle in the environment rather than on the host animal; ticks must be controlled in the environment to prevent their spread.

If ticks are already widespread in a region, eradication can be difficult. Eradication programs are based on animal identification and periodic acaricide treatment of livestock, as well as public education, surveillance, quarantines and movement restrictions.

Public Health

A. hebraeum can transmit *Rickettsia africae*, the agent of African tick-bite fever, to humans. *Amblyomma* tick bites are also painful, and the wound may become infected.

Internet Resources

- Acarology WWW Home Page
http://www.nhm.ac.uk/hosted_sites/acarology/
- Food and Agriculture Organization of the United Nations (FAO). Ticks and Tick-borne Diseases.
http://www.fao.org/WAICENT/faoInfo/Agricult/AGA/A_GAH/PD/pages/DEFAULT.HTM
- The Merck Veterinary Manual
<http://www.merckvetmanual.com/mvm/index.jsp>
- The University of Edinburgh. The Tick Collection.
<http://www.nhc.ed.ac.uk/index.php?page=24.25.121>
- United States Animal Health Association.
Foreign Animal Diseases.
http://www.vet.uga.edu/vpp/gray_book02/fad/index.php

Tick Identification Key

<http://webpages.lincoln.ac.uk/fruedisue/li/FR-webpages/parasitology/Ticks/TIK/tick-key/index.htm>

World Organization for Animal Health (OIE)

<http://www.oie.int>

OIE Terrestrial Animal Health Code

http://www.oie.int/eng/normes/mcode/A_summry.htm

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*Link defunct as of 2006.