

Ectoparasites of birds and mammals of Costa Rica 2. Ticks*

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This paper is the second of a series on the ectoparasites of birds and mammals of Costa Rica and reports some of the species of ticks collected from these hosts and from reptiles. The ticks were identified by Kohls. Specimens of *Ixodes auritulus* are deposited in the Rocky Mountain laboratory collection and specimens of the other species were given to Dr. Rodrigo Zeledón, School of Microbiology, University of Costa Rica.

As vectors of disease, ticks are the most important of all the arthropods with the possible exception of the mosquitoes. The number of human and animal diseases known to be transmitted by ticks is constantly increasing. One of the basic projects of the Louisiana State University Center of Medical Research and Training program in Costa Rica is to survey the ticks, and to study their ecology, and the disease organisms associated with them. This project is being carried on as a joint effort with various health agencies of Costa Rica and the Rocky Mountain Laboratory of the U. S. Public Health Service.

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About 15 species of ticks have already been reported from Costa Rica. All of these except *Ixodes auritulus* are included in a comprehensive paper on the ticks of Panama by FAIRCHILD, KOHLS and TIPTON (1). In that report, 47 species in 10 genera are recorded from Panama and it seems probable that most of these will eventually be recorded from Costa Rica too.

The present study is merely a preliminary phase of the larger one previously mentioned. In our study, species of *Amblyomma*, especially the larvae known as seed ticks or "garrapatitas", were the most numerous and occurred on a wide variety of hosts. Our records of unidentified larvae and nymphs of

Amblyomma include at least two species which cannot be determined because the immature stages of most species in this genus are still unknown.

TICK AND HOST RECORDS

Amblyomma auricularium (Conil)

Seven females were collected from the four-toed anteater, *Tamandua tetradactyla* Gray, Province of Guanacaste, Santa Cruz, 25 February 1963. This tick has been reported in Central America from a number of hosts including armadillo, coati, cat, opossum, hog, philander, and anteater.

Amblyomma dissimile (Koch)

One male was collected from the common iguana, *Iguana iguana*, Province Puntarenas, 15 km E.S.E. Potrero Grande, Gromaco, 27 January 1963. This is a common reptile tick which has been recorded from a number of snakes, iguana, and the common toad, *Bufo marinus* (Linné) in Panama. In all probability it is also common in Costa Rica.

Amblyomma longirostre (Koch)

The following host records were made: One nymph from the clay-colored robin, *Turdus grayi* Bonaparte, Province of San José, University of Costa Rica, 15 December 1962. One nymph from the streak-headed woodcreeper, *Lepidocolaptes souleyetti* (Des Murs), Province of San José, Río Parrita, Playón, 9 January 1963. One nymph from the black striped woodcreeper, *Xiphorhynchus lachrymosus* (Lawrence), Province of San José, Río Damitas, 14.5 km north Quepos, 12 January 1963. One female from the chestnut-capped warbler, *Basileuterus delatrii* Bonaparte, Province of San José, University of Costa Rica, 1 November 1962. One larva from the broad-winged hawk, *Buteo platypterus* (Vieillot), Province of Cartago, Instituto Internacional de Ciencias Agrícolas, 7 December 1962. In Panama, adults of this species appear to be restricted to the porcupine, *Coendou rothschildi* Thomas (FAIRCHILD *et al.*, 1).

Amblyomma ovale (Koch)

Nymphs were collected from Tomes spiny rat, *Proechimys semispinosus* (Tomes), Province of San José, Río Damitas, 14.5 km north Quepos, 13 January 1963. According to Fairchild *et al.* the adults occur primarily on carnivores.

Amblyomma spp.

Immature ticks which could not be identified to species were as follows. One nymph from the bright-rumped attila, *Attila spadiceus* (Gmelin), Province of Puntarenas, Potrero Grande, Gromaco, 29 January 1963. One nymph from the buff-throated saltator, *Saltator maximus* (P. L. S. Müller), Province of Puntarenas, Quepos, 20 February 1963. One nymph from the black-hooded antshrike, *Thammophilis bridgesi* Sclater, Province of Puntarenas, Río de la Vieja Bridge (Pan American Highway), 10 March 1963. Two larvae from the rufous-and-white wren, *Thryothorus rufalbus* Lafresnaye, Province of Puntarenas, Río Guacimal, Monte Verde, 21 April 1963. Three nymphs from the riverside wren, *Thryothorus semibadius* Salvin, Province of Puntarenas, Río la Vieja Bridge (Pan American Highway) 10 March 1963. Two nymphs from the stripe-breasted wren, *Thryothorus thoracicus* Salvin, Province of Limón, 25 km N.N.E. Turrialba, 19 May 1963. One nymph from the cane brake wren, *Thryothorus zeledoni* (Ridgway), Province of Limón, Río Madre de Dios, Finca La Loba, 22 February 1963. One nymph from the rufous-browed pepper shrike, *Cyclarhis gujanensis* (Gmelin), Province of Puntarenas, Río Guacimal, Monte Verde, 22 April 1963. Three larvae from the green hermit, *Phaethornis guy* (Lesson), Province of Cartago, Moravia de Chirripó, Hacienda Moravia, 24 October 1962. Four larvae and two nymphs from the gray-capped flycatcher, *Myiozetes granadensis* Lawrence, Province of Puntarenas, 1 mile south Dominical, 22 November 1962 and Province of Puntarenas, 9 miles N.W. Puerto Cortez, 8 March 1963. Two larvae from the slaty spinetail, *Synallaxis brachyura* Lafresnaye, Province of Puntarenas, Río Coronado, 8 March 1963. One larva from the white-eared groundsparrow, *Melospiza leucotis* Cabanis, Province of Puntarenas, Río Guacimal, Monte Verde, 23 April 1963.

Haemaphysalis leporispalustris (Pack.)

Larvae of this tick were collected from the black-striped sparrow, *Arremonops conirostris* (Bonaparte), Province of Limón, Finca La Lola, 8 May 1963. This very widely distributed tick is a vector of tularemia and Rocky Mountain spotted fever among animals in nature but it very rarely bites man.

Ixodes auritulus Neumann

This tick was collected at high altitudes in two localities. The records are as follows. Two larvae from the mountain robin, *Turdus plebejus* Cabanis, Pro-

vince of Cartago, Volcán Turrialba, 2 March 1963. One female, one larva, and one nymph from the timberline wren, *Thryorcbilus browni* (Bangs), two larvae from the black-billed nightingale thrush, *Catharus gracilirostris* Salvin, one larva from the sooty robin, *Turdus nigrescens* Cabanis, and one nymph from the volcano junco, *Junco vulcani* (Boucard), Province of San José, Cerro de la Muerte, 3 to 9 miles north La Georgina, March 1963.

Ixodes sp.

A larva which could not be identified to species was collected from the Kentucky warbler, *Oporornis formosus* (Wilson), Province of San José, University of Costa Rica, 16 October 1962.

RESUMEN

En este trabajo se ofrece una lista de las garrapatas que fueron coleccionadas en algunos vertebrados de Costa Rica.

SUMMARY

A list is given of the ticks which were collected from vertebrates in Costa Rica.

LITERATURE CITED

1. FAIRCHILD, G. B., G. M. KOHLS, AND B. J. TIPTON (In press)
The ticks of Panama (Acarina: Ixodoidea), *In Ectoparasites of Panama*. R. L. Wenzel, editor, Chicago Natural History Museum.