Species of Ticks in Domestic and Wild Animals in Sri Lanka

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Ticks are a group of ectoparasitic blood sucking arthropods, reported worldwide on mammals, reptiles, birds, amphibians and insects. They are primarily parasites of wild animals and only 10% of the species feed on domestic animals. The objective of this two and a half year long study was to identify the species of ticks in domestic and wild animals in Sri Lanka. Sixty locations were selected from 22 districts in Sri Lanka using convenience sampling, and ticks collected from dogs, cattle, buffalo, cats, sheep, goat, pig, and domestic poultry. They were transported to the laboratory in 70% ethanol medium and morphologically identified. Ticks present on wild animals in parks at Minipe, Mihintale, Udawalala, Randenigala, Yala and Wasgamuwa were also collected and identified. Wild animals sampled were wild boar, deer, sambur, mouse deer, barking deer, pangolin, mongoose, porcupine, wild buffalo, elephant, bear, monkey, flying squirrel, rabbit, bat, bandicoot, wild cat, civet cat, peacock, frog, tortoise, monitor lizard, cobra, python and boiga snake. Citizens in Kandy district, through personal contacts, collected and handed over ticks they could find on wild animals encountered and also from domesticated animals. A total of 1376 ticks were collected from wild animals while 13,170 were collected from domestic animals. We were also able to collect 43 ticks from human, by direct removal from the body. According to the results, 11 new species of ticks, which were originally found only in wild animals, were found on domestic animals. Species recorded from domestic dogs were *Haemaphysalis turturis, H. cuspidata, H. histricis* and immature *H. spinigera, H. aculeata, Amblyomma testudinarum, A.clypeolatum, Hyalomma marginatum,* and *Dermacentor auratus.* Domestic cattle harboured *H. turturis, H. cuspidata, H. kyasanurensis, H. histricis, A. testudinarum,* and *Amblyomma* spp. We recorded *H.turturi* and *Amblyomma* sp. from buffaloes; *H.cuspidata* from sheep; *H.turturis, H.spinigera, H.histricis, A.testudinarum,* and *A. integrum* from goats. Species recorded from domestic poultry were *H. turturis, H. aculeata,* and from domestic pig were *H. bispinosa, Rhipicephalus sanguinus, R. haemaphysaloides.* Cats were infested with *R. boophilus, R. haemaphysaloides, H. turturi, H. cuspidata,,* and nymphs of *H. spinigera.* Tick species generally found on dogs and cattle were R. *boophilus, R. sanguinus, R. haemaphysaloides, H. bispinosa, H. intermedia, A. integrum. Hy. marginatum, Hy. bravipuctata* and *Nosomma monstrosum* were found only on buffaloes.

Five unidentified species were found both from domestic animals and wild animals. Of these, two belonged to the genus *Haemaphysalis* while the others were from genus *Amblyomma.* The *Haemaphysalis* species resembled *H. bispinosa* and *H. spinigera* but the shape of the scutum was different. Two unidentified *Amblyomma* species were found only on pangolins. The other female *Amblyomma* species was found from wild boar, sambur, cattle and buffalo. *Aponomma* species were found only on pangolins and reptiles, while immature of *H. cornigera* and adults of *A. clypeolatum* were present only on wild animals. According to previous studies, *A. testudinarum* and *A. clypeolatum* had been recorded only from buffaloes and *H. cuspidata* in goats living in jungle areas. We were able to collect these three species from other animals in urban areas. We suspect that wild animals including wild boar, mouse deer, barking deer, porcupines, and monkeys, may have introduced these tick species to domestic stock. Since ticks are vectors for many diseases such as tick borne rickettsiosis, babasiosis, theileriosis, Kyasanur forest disease, tick- borne encephalitis, hemorrhagic fever varieties, and Lyme disease, it is very important to conduct further studies on these new invaders to investigate their potential role in transmission of zoonotic diseases.