Molecular characterization and pathogen detection in *Amblyomma gervaisi* and *Amblyomma varanense* collected from snakes of India

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Abstract:

The main objective of this study was to underscore detail gross and ultra-structural morphology, molecular characterization of ticks found on snakes and their ability to carry zoonotic pathogens. The investigation was carried out throughout the North-Eastern states of India during different seasons from March, 2020 to February, 2021. The outer surface of different species of snakes that were either kept in zoos or captured or killed by local people were thoroughly examined for presence of any ticks. Some of the collected ticks were preserved in absolute alcohol for molecular study while rest was kept in 70% alcohol for Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM). Light microscopy, SEM and TEM revealed specific morphological features through which the collected ticks were identified as *Amblyomma gervaisi* and *Amblyomma varanense* and further confirmation was revalidated by molecular detection. The ticks were commonly found during the rainy season (July to October) and Indian