ROUND 1

Reviewer A:

Recommendation: Revisions Required

1. Relevance of the title to the content of the article: Regular
Remarks
Authors should evaluate change the paper title to "Description of seven cases of human infestations by ticks of the Argasidae and Ixodidae families in Panama and Costa Rica".
Resp: We changed the title to “Description of human infestations by ticks in Panama and Costa Rica”.

2. Summary: Presents the general idea of the topic, objectives, research methods, results and conclusions, written in an objective and concise manner; and are found according to the maximum number of words per section: Good

3. Introduction: Presentation of the subject, justification of the problem, objectives, hypotheses and methodological foundation, exposing the subject in an orderly and detailed manner: Good

4. Methodology: Describes the procedure, methods and techniques used in data collection and analysis: Regular
The comments are in attached file.
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

5. Ethical aspects. Does the manuscript have a paragraph on ethical aspects, where it mentions approval by the ethics committee, informed consent, and strict compliance with research ethics? Yes

6. Results: They are presented adequately and it is not redundant with tables or graphs shown: Regular
The comments are in attached file.
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

7. Discussion: They present a level of critical analysis in correspondence with the problem presented. Purposes of the article, scope, support theory and proposed methodological design: Regular
The comments are in attached file.
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

8. Conclusions: Presents the author's inferences and teachings in relation to the investigated topic, it must correspond to the objectives of the study: Good

9. References. Quality of bibliographic references and if they are in accordance with the Vancouver format: Good

10. Redaction. Is the manuscript correctly written? Does it contain any spelling or grammar mistakes? Acceptable

11. Contributions. What are the main weaknesses of the manuscript and how the author can do to improve it
The paper describes cases of tick bites and related reactions, in humans from Panama and Costa Rica. Articles with this objective are scarce, for this reason I congratulate the authors for their contribution. Before being accepted for publication, authors should address some concerns that have been reported regarding tick identification, pathogen detection, and discussion. The comments are in the attached file.
Resp: Thanks for the comments. We did the modifications, which are below (Comments in the text and answers) and also highlighted in the text.

Comments in the text and answers:

The authors should evaluate change the paper title to "Description of seven cases of human infestations by ticks of the Argasidae and Ixodidae families in Panama and Costa Rica".
Resp: We changed the title to "Description of human infestations by ticks in Panama and Costa Rica".

Male or female
Resp: Unfortunately, we do not verify the sex of the adults prior to processing.

Why do the authors believe that the species of tick found in the environment was responsible for the lesions observed in humans?
Resp: Thanks for the question. During the evaluation in the cabin, no other arthropods were found that could cause similar damage, e.g. bed bugs or kissing bugs, and other arthropods likes mosquitoes were are present into the cabin. On the other hand, the lesions found and the affected person's reports are consistent with other cases caused by *O. puertoricensis* in Panama.

Reference the work of Mangold et al. (1998).
Mangold AJ, Bargues MD, Mas-Coma S (1998) Mitochondrial 16S rRNA sequences and phylogenetic relationships of Rhipicephalus and other tick genera among Metastriata (Acari: Ixodidae). Parasitol Res 84:478–484
Resp: We changed the reference.

The identification of the tick was performed inaccurately. I suggest you delete this case.
Resp: Thanks for the suggestions, because it was relevant to improve the text. Nevertheless, we prefer to keep this case instead of deleting it for two reasons: the affected person is a field biologist who knows how to recognize ticks among other hematophagous arthropods likes chiggers and other mite, even though he didn't preserve them (1); the aim of the note is to raise awareness about the importance of ticks in public health, beyond the transmission of diseases (2). In particular, to us it is

relevant demonstrate the differences between the affectation of the bites, the duration of the lesions, according to individual bites or for massive infestation by a cluster of larvae, like this case.

Moreover, in the region where the affected person was bitten, the most prevalent genus associated to parasitizing humans corresponds to *Amblyomma*; in fact, *Amblyomma mixtum* is the species that most affects people in this type of environment, including massive infestations of larvae. Although we do not conjecture or speculate about which species was, we can rely on the tick gender identification provided by the affected person.

Bermúdez et al. (2021) carried out the identification of Ixodes cf. boliviensis morphologically (Bermúdez et al., 2018) and molecularly (Mangold et al. 1998). What was the tick identification method that the authors used?
Resp: The tentative designation of *Ixodes* cf. *boliviensis* was proposed by Bermúdez et al. (2021) due to genetics difference to Southern America *I. boliviensis* (type region), from *Ixodes boliviensis* previously identified by Fairchild et al. (1966) and later re-described by Bermúdez et al. (2018). These last two works present identification keys for adults from Panama; although, Bermúdez et al. (2018) presents morphological characteristics of this taxon. Both keys have been useful to identify this taxon, and other taxa, in Costa Rica. Therefore, although the identification key of Bermúdez et al. (2018), leading to *I. boliviensis*, we follow the criteria of Bermúdez et la. (2021), to designate the female of this case as *I*. cf. *boliviensis*.

How long did erythema migrans-like remained?
Resp: This information was including in the text.

Specify which pathogens were tested by PCR.
Resp: This information was including in the text.

Cite references for DNA extraction protocols and PCR reactions in the text.
Resp: This information was including in the text.

I don't understand the sentence. “In addition, *Coxiella burnetti* was include as protocol of prevention.”
Resp: This sentence was deleted.

Authors should incorporate into the discussion the eco-epidemiological aspects that may explain the occurrence of tick infestations in humans in each location.
Variables such as abundance, diversity of tick species and primary hosts should help explain the occurrence in humans of each tick species in Panama and Costa Rica.
Resp: Thanks for the recommendation. Some sentences were added in the text. However, it should be noted that the information suggested to enrich the text (e.g. abundance) is practically unknown in certain regions of these countries, despite the fact that there are several publications that generally mention ticks in humans.

Rewrite the sentence: In contrast, the rest of the affected were parasitized

Resp: We modified the sentence to "The rest of the affected were parasitized by three species of Ixodidae and,…"

Table
These references are not cited in the reference list. These primers are not specific for tick-borne pathogens.
Resp: In Panama, 16S rRNA primers are used as an initial screening of TBD and then, depending on the presence of bands, the search is extended with other primers like gltA, ompA, flaB.

Reviewer B:
Recommendation: Revisions Required

1. Relevance of the title to the content of the article: Poor
Remarks
Change "Description of seven cases of ticks bites in Panama and Costa Rica" to Description of ticks bites in humans from Panama and Costa Rica
Resp: We changed the title to "Description of human infestations by ticks in Panama and Costa Rica".

2. Summary: Presents the general idea of the topic, objectives, research methods, results and conclusions, written in an objective and concise manner; and are found according to the maximum number of words per section: Good
All my suggestions were made directly in the attached manuscript file!
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

3. Introduction: Presentation of the subject, justification of the problem, objectives, hypotheses and methodological foundation, exposing the subject in an orderly and detailed manner: Good
All my suggestions were made directly in the attached manuscript file!
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

4. Methodology: Describes the procedure, methods and techniques used in data collection and analysis: Regular
All my suggestions were made directly in the attached manuscript file!
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text!

5. Ethical aspects. Does the manuscript have a paragraph on ethical aspects, where it mentions approval by the ethics committee, informed consent, and strict compliance with research ethics? Yes

6. Results: They are presented adequately and it is not redundant with tables or graphs shown: Good
All my suggestions were made directly in the attached manuscript file!

Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

7. Discussion: They present a level of critical analysis in correspondence with the problem presented. Purposes of the article, scope, support theory and proposed methodological design: Regular
All my suggestions were made directly in the attached manuscript file!
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

8. Conclusions: Presents the author's inferences and teachings in relation to the investigated topic, it must correspond to the objectives of the study: Good
All my suggestions were made directly in the attached manuscript file!
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

Thanks,
9. References. Quality of bibliographic references and if they are in accordance with the Vancouver format: Poor
All my suggestions were made directly in the attached manuscript file!
Resp: All modifications are evidenced in the answers below (Comments in the text and answers) and highlighted in the text.

10. Redaction. Is the manuscript correctly written? Does it contain any spelling or grammar mistakes?
Needs some language corrections
Resp: We incorporate grammar improvements in the text.

11. Contributions. What are the main weaknesses of the manuscript and how the author can do to improve it.
I suggest that the manuscript be proofread by a native English speaker.
Resp: We incorporate grammar improvements in the text.

Comments in the text and answers:
Here, you should add the follow citation: Rickettsia amblyommatis isolated from Amblyomma mixtum (Acari: Ixodida) from two sites in Panama, because, this article has information about Panamá.
Resp: Thanks for the recommendation. However, for the idea we want to present, that manuscript is not necessary.

Here, you must report the follow publication: Isolation of Rickettsia rickettsii in Rocky Mountain Spotted Fever Outbreak, Panama. This paper has so important information about tick borne diseases from Panamá.
Resp: Thanks for the recommendation; since the aforementioned work presents the last RRSF case descriptions in Panama, we add the reference.

You must remove this case! How are you absolutely sure it was immature ticks? Why couldn't it be mites? We know that ticks affect men more often, but their information is very speculative. Please remove this case 3 from your manuscript, as unlike case 1 here you do not have any tick specimens collected and did not identify any ticks. This case is too much of a guess!

Resp: We handle this case based on what the affected person told us, which is a field biologist who knows how to recognize ticks from among other arthropods (insects or mites) that could cause bites; on the other hand, he removed the ticks, although unfortunately he did not keep them. Thus, because the anamnesis presented to the affected, his knowledge to differentiate and recognize ticks from other arthropods, we prefer to keep this case instead of deleting it.

Moreover, the reasons to maintaining this case is within the objectives of the manuscript, since the non-preservation of ticks (either by those affected or by medical personnel in hospitals) is a common practice that prevents us have more data. This case serves as an example of the need to preserve the samples, in addition to present a case that differentiates the bites of multiple ticks, with those individual. Therefore, although we are aware of the reluctance of the reviewers, we prefer to keep this case in our manuscript.

DESCRIBE HOW THE DNA EXTRACTION WAS DONE !

Resp: We add the references related to the applied methods!

I can't understand why did you add this phrase!

Resp: This sentence was deleted.

In reality 6, one of the cases was just a hypothesis. You did not identify tick specimens in case 3.

Resp: We explain the reasons why we want to maintain case 3, both because of the confidence in the identification of the affected person in the field, and because of the objective of presenting the different manifestations of tick bites, which varies not only due to the characteristics of the disease. person or ticks, but also by the number of ticks involved.

In this case and case 7, it is important to note that this species of A. ovale tick can act as a rickettsial vector for humans. (A human case of spotted fever caused by Rickettsia parkeri strain Atlantic rainforest and its association to the tick Amblyomma ovale)

Resp: Thanks for the mentioning it, we add a sentence about that.

Remove case 3. You are claiming that they were tick immatures but did not identify any ticks. "…multiple bites by *Amblyomma* immature for some hours" How are you sure of this information?

Resp: As we explained in the previous answers, we have certainty in the information provided by the affected person in case 3, who, as we explained in previous comments, is a field biologist with sufficiency in recognizing immature ticks.

TBD, You need to describe the acronym in full before quoting it for the first time!

Resp: We add the acronym.

Table
Remove, you don't have these (49,50,51,52) references cited in the text!
Resp: These references were including in the table and in the references.

Figure
And how about the letter E and F? Please, include the legend about figure E and F.
Resp: We add information to these images in the legend.

ROUND 2

Thanks for the review process. We have enclosed a revised version of the manuscript "Description of seven cases of ticks bites in Panama and Costa Rica".

Regarding to the comments of the Reviewer B:

The authors' response was not convincing to maintain case 3. The authors' justification is not expressed in the text and we think that not every biologist is a specialist in arthropod identification, so we insist that this case should be removed. Because there is no scientific proof that the individual was parasitized by 150 tick larvae! If the author does not remove case 3, we will have to reject the article, as the case does not have scientific proof and takes away the quality and seriousness of the manuscript.
Resp: We accept the initial and current comments of both reviewers regarding to the case 3. All modifications are remarked in the text.

There are two mistakes in table 1. Please, fix that.
Resp: Althoughthe use of the initial or first paper to present a protocol is important the use of the following articles cannot overridden. In this case, Oteo et al. (2014) present adequate protocols for both *gltA* and *ompA* genes. Therefore, it cannot be considered a mistake and we prefer to keep it, since the use of this reference does not detract the quality of the manuscript in terms of information or replicate.