A new species of *Psammophis* (Serpentes: Psammophiidae) from the Turpan Basin in northwest China

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Introduction

Turpan Basin (Xinjiang Uygur Autonomous Region, China) can harbor great biodiversity of endemism with its unique geographic and climatic settings. Prior herpetofaunal surveys in this region, however, only resulted in the findings of *P. lineolatus*, which is the only representative of psammophiid snake occurring in China.

Material & Methods

- During several surveys of herpetofaunal diversity in the Turpan Basin, we collected three sloughs and one adult specimen (road kill on 23th September 2020; Figure 1) of the psammophiid snake near the Aydingkol Lake (Figure 2). One specimen of *P. lineolatus* was collected from Shanshan county in September 2020 (Figure 2). Two other incomplete skins of the psammophiid snake were obtained from eastern town of Xia in August 2017 from a local man in Tuokesun county (Figure 2).
- Molecular data collection: two mitochondrial genes coding cytochrome *b* (Cytb; 1117 bp) and NADH dehydrogenase subunit 4 (ND4; 1338 bp).
- Phylogenetic analysis (Maximum Likelihood and Bayesian inference).
- The calculation of the uncorrected *p*-distances between and within the three representative Asian *Psammophis* snakes (subclades in Clade II; see Figure 3).
- Morphological analyses (conducting on 14 metric and 12 meristic characters as well as some qualitative characters; see Figure 4)

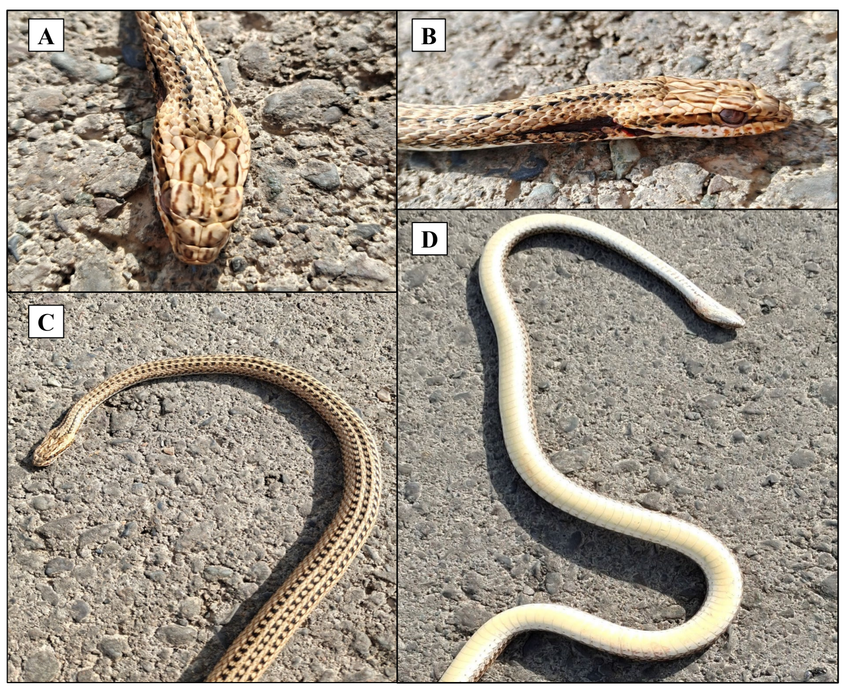

Figure 1 General views of *P. turpanensis* sp. nov.

Result

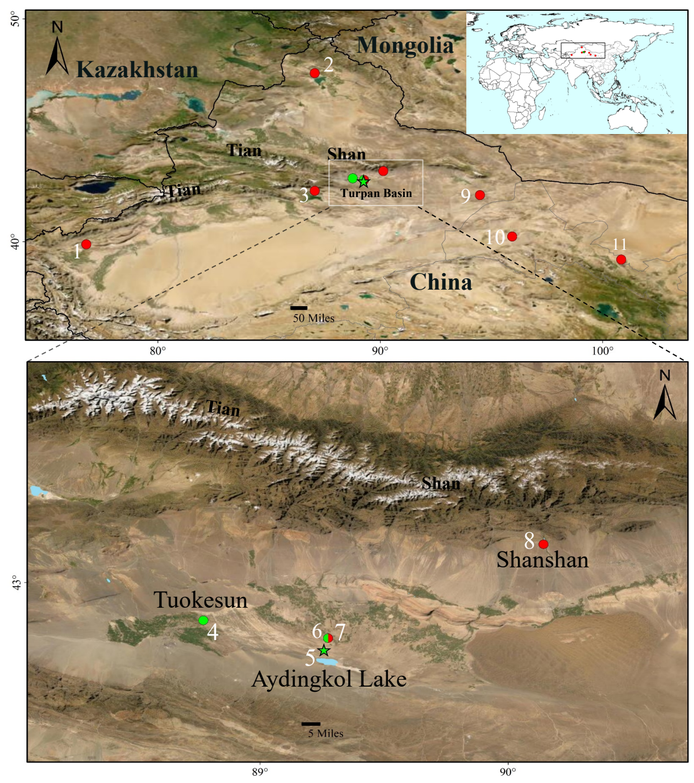

Figure 2 Collection sites

Figure 4 Photographs of the main characteristics of *P. turpanensis* sp. nov.

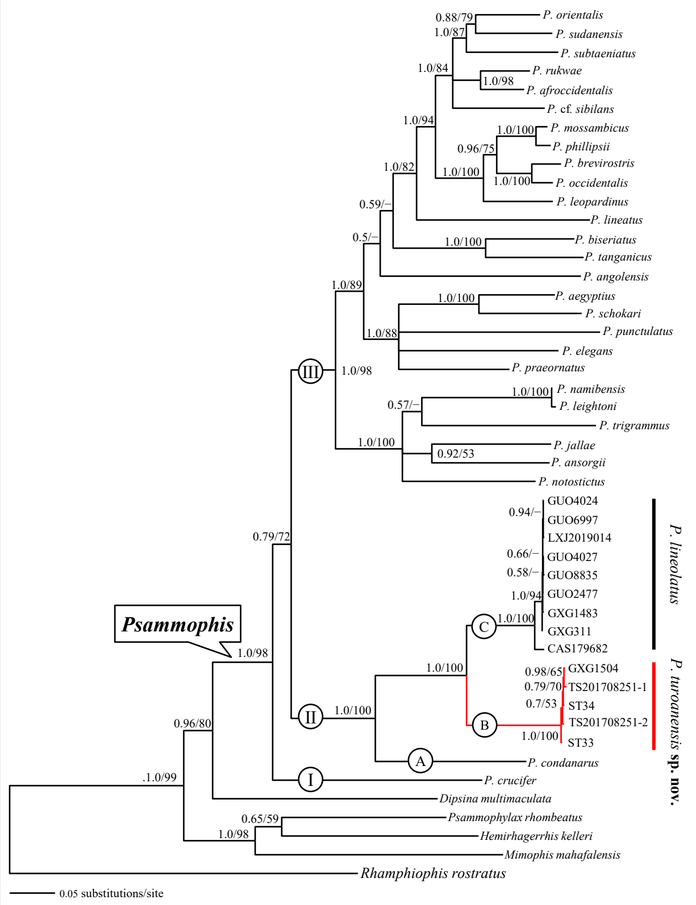

Figure 3 Phylogenetic tree

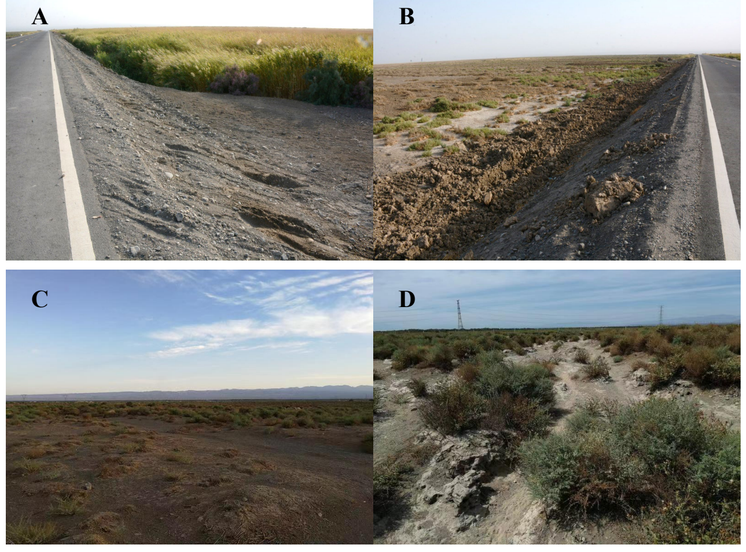

Figure 5 Habitat scenario *of P. turpanensis* sp. nov.

Phylogenetic analyses revealed that this specimen and other snake sloughs and skins from different localities in the Turpan Basin formed a clade that is sister to *P. lineolatus* and exhibite substantial divergence from congeners in Clade II with uncorrelated *p*-distance from11.9 ± 0.9% to 15.8 ± 1.6% for the ND4 gene and 10.2 ± 0.8% to 14.5 ± 1.1% for the Cytb gene.

Conclusion

Morphological comparisons and molecular analysis congruently suggest that the single specimen collected by us in the Turpan Basin is distinct from *P. lineolatus* and other congeners, which we describe as new species, *Psammophis turpanensis* sp. nov. The discovery of *P. turpanensis* **sp. nov.** is the 35th species of *Psammophis* snake recognized to date, and the second species of *Psammophis* known from China.

Acknowledgements:

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