

Persian dwarf snake consists of six species, scientists discover

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A: *Eirenis persicus*; B: *Eirenis angusticeps*; C: *Eirenis walteri*; D: *Eirenis nigrofasciatus*. Credit: Photos of (A & D) are taken by F. Heidary; (B) by R. Masroor; (C) by R. Nazarov.

The Persian dwarf snake is wrongly classified as one species, scientists say. New research shows it is composed of six different species, a finding which might be important for the conservation of the snake.

The Persian dwarf snake or *Eirenis persicus* lives in an area stretching from southern Turkey to the northeast of Pakistan. Mahdi Rajabizadeh, a former PhD student of Ghent University professor Dominique Adriaens, decided to investigate its biodiversity.

Together with researchers from six other countries, he examined 30 male and 30 female specimens, based on extensive field expeditions and museum specimens. The scientists used advanced techniques such as geometric morphometrics, molecular phylogeny and ecological niche modeling.

Six different species

The research, which was published in the *Zoological Journal of the Linnean Society*, revealed that the Persian dwarf snake is not a single species at all. It is composed of 6 different species, wrongly classified as the species *Eirenis persicus*. A molecular clock analysis revealed that the divergence and diversification of the *E. persicus* species group mainly correspond to Eocene to Pliocene orogeny events subsequent to the Arabia-Eurasia collision.

The six species are *Eirenis nigrofasciatus*, *Eirenis walteri*, *Eirenis angusticeps*, *Eirenis walteri*, *Eirenis mcMahonii* and *Eirenis occidentalis*. Except for *E. occidentalis*, which is a completely new discovery by the researchers, these species were already described between 1872 and 1911. However, during the last half of the previous century, herpetologists considered them as a single species with some difference in color and pattern, because the overall morphology is quite similar.

Importance of taxonomy

The findings might be important for the conservation of the snake. Mahdi Rajabizadeh is a member of the IUCN Species Survival Commission (SSC), a science-based network of more than 10,000 volunteer experts from almost every country of the world. "Eirenis persicus was not listed in the IUCN Red List of Threatened Species", he says, "because it was regarded as a species with a great distribution range. But each of the 6 newly identified species within the Persian dwarf snakes must be put on the Red List, since each of them actually has a limited distribution."

The research of Mahdi Rajabizadeh puts emphasis on the importance of taxonomy and indicates that, without sophisticated taxonomy in a changing world, we may lose [species](#) we did not identify yet.

Provided by Ghent University

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