

Kingsnake Species Revision

It has recently been proposed that the *mexicana* group of kingsnakes consists of three separate species which inhabit the Chihuahuan Desert and adjacent areas.

William Garstka of Harvard and the Univ. of Alabama Huntsville has examined external and internal morphology to diagnose these species.

The gray-banded kingsnake is raised to full species status as *Lampropeltis alterna*. It is confined to the Chihuahuan Desert from the Anticline of Arteaga north to the foot of the Guadalupe Mts. It is primarily nocturnal and saxicolous. The variation of color pattern in *L. alterna* is believed to be mimicry of different models - the red banded forms mimicing the coral snake, *Micrurus fulvius*; the gray and black banded mimicing the rock rattlesnake, *Crotalus lepidus*.

The second species proposed by Garstka is the original *Lampropeltis mexicana*, encompassing the forms south of the Anticline of Arteaga and inhabiting the less arid highlands bordering the desert, mainly pine-oak forests of Nuevo Leon, San Luis Potosi, and Durango states in Mexico. They are also mainly nocturnal and saxicolous.

Garstka does not address the problem of subspecies: *thayeri*, *greeri*, *mexicana*. He does propose that the color variation in this species is primarily a matter of mimicry of several venomous models. The northern dusky rattlesnake, *Crotalus triseriatus aquilus*, shares the range and habitat of *L. m. mexicana*. The pattern match of these animals is quite close.

The color variability of *L. mexicana thayeri* is well known. Garstka theorizes that this may be a case of multiple models of venomous snakes in Nuevo Leon. In this state *Crotalus lepidus*, the rock rattlesnake often has ochre and gray banding. *Micrurus fulvius*, the coral snake, provides a model for the ringed color morph. The mimic-model hypothesis does not fit *L. m. greeri* very well; there is no red-banded model in Durango. More field studies are needed to confirm true geographic differences in *L. mexicana* to confirm the validity of the present subspecies classification. There is a strong possibility of the presence of multiple color morphs such as has been confirmed in *L. alterna*.

The third species of the complex is proposed to be *Lampropeltis ruthveni*. Williams (1978) included this form under *L. triangulum arcifera*, the Mexican mountain milksnake. Most authorities now agree that *ruthveni* is a separate species morphologically and ecologically in spite of the color pattern similarity to *arcifera*. John Ruiz (pers. comm.) has observed that courting and mating behavior of *ruthveni* more closely resembles that of *mexicana* than that of *triangulum*. *L. ruthveni* may mimic the local coral snake, *Micrurus fitzingeri*.

Garstka's proposals, although very attractive to this author, have so far received little attention. It remains to be seen if the SSAR committee accepts the separation of *L. alterna* from *L. mexicana*.

References

- Garstka, William R. 1982. Systematics of the *mexicana* species group of the Colubrid genus *Lampropeltis*, with an hypothesis mimicry. *Breviora*, no. 446.
- Williams, K. 1978. Systematics and natural history of the American milk snake *Lampropeltis triangulum*. Publ. Biol. Geo. Milwaukee Pub. Mus. no. 2.