

Distribution of the subgenus *Acridophaga* Reuss, 1927 (Serpentes: Viperidae) in Iran

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Two localities for *Vipera erivanensis* are reported. Examination of four specimens of *Vipera* (*Acridophaga*) from the northwestern of Iran showed the occurrence of *Vipera erivanensis* on Kiamaki Mountain, adjacent to the Armenian border and on the eastern slope of Sabalan Mountain. In the western and central Alborz, *Vipera ebneri* is present.

The *Vipera ursinii* complex (*Acridophaga*) has a complicated taxonomic history. Among the *Vipera ursinii* complex, which includes taxa of northeastern Turkey, Transcaucasia, and north and northwestern Iran, Reuss (1933) provided a rudimentary description of a single specimen of *Acridophaga renardi erivanensis* from near Erivan. Knopfler and Sochurek (1955) described *Vipera ursinii ebneri* from central Alborz near Damavand Mountain in Iran. Various authors expressed the opinion that the mountain steppe vipers distributed in northwestern Iran, Transcaucasia, and northeastern Turkey are of this taxon (Saint Girons, 1978; Street, 1979; Welch, 1983). Joger (1984) re-evaluated *erivanensis* from the original description of Reuss and identified steppe vipers of the area as *Vipera ursinii erivanensis*. This taxonomic change was accepted by later herpetologists (Golay et al., 1993; Gruber, 1989). During this time, *Vipera ursinii ebneri* was identified as *Vipera ursinii erivanensis*. Hoggren et al. (1993) raised the subspecies to a full species rank. Finally, in a comprehensive review of both taxa, Nilson and Andren (2001) raised it to full species. In this report, we follow Nilson and Andren (2001) and recognize *Vipera ebneri* and *Vipera erivanensis* based on a combination of meristic and color pattern characteristics. *Vipera ebneri* has a lower count of ventral and subcaudal scales than *Vipera erivanensis*. In addition, supralabials of *Vipera ebneri* are uncolored, while in *Vipera erivanensis* they are darkly spotted along their margins.

Nilson and Andren (2001) restricted the distribution of *Vipera erivanensis* to northeastern Turkey, Armenia, Nakhjavan, and Azarbaijan (Fig. 1) and distribution of *Vipera ebneri* to the north and northwestern of Iran. In his books on snakes of Iran, Latifii (1991 and 2000) followed an earlier taxonomy and regarded all Iranian vipers of the subgenus *Acridophaga* as *Vipera erivanensis*, while in later publications (e.g. Mallow et al., 2003) Iranian vipers were referred to as *Vipera ebneri*. Although some researchers believe *Vipera erivanensis* to be distributed in northwestern Iran, there are no localities given (Mallow et al., 2003). In this study, we examined new materials from northwestern Iran to shed more light on the distribution of these two species in northwestern parts of the country. Four museum specimens of *Vipera* (*Acridophaga*) from the northwestern of Iran were examined. Two were adult male specimens in the Zoological Museum of Gorgan University (ZMGU) labeled ZMGU473-4, collected from eastern Azerbaijan Province, Kiamaki Mountain (38° 49'N 46° 10'E).

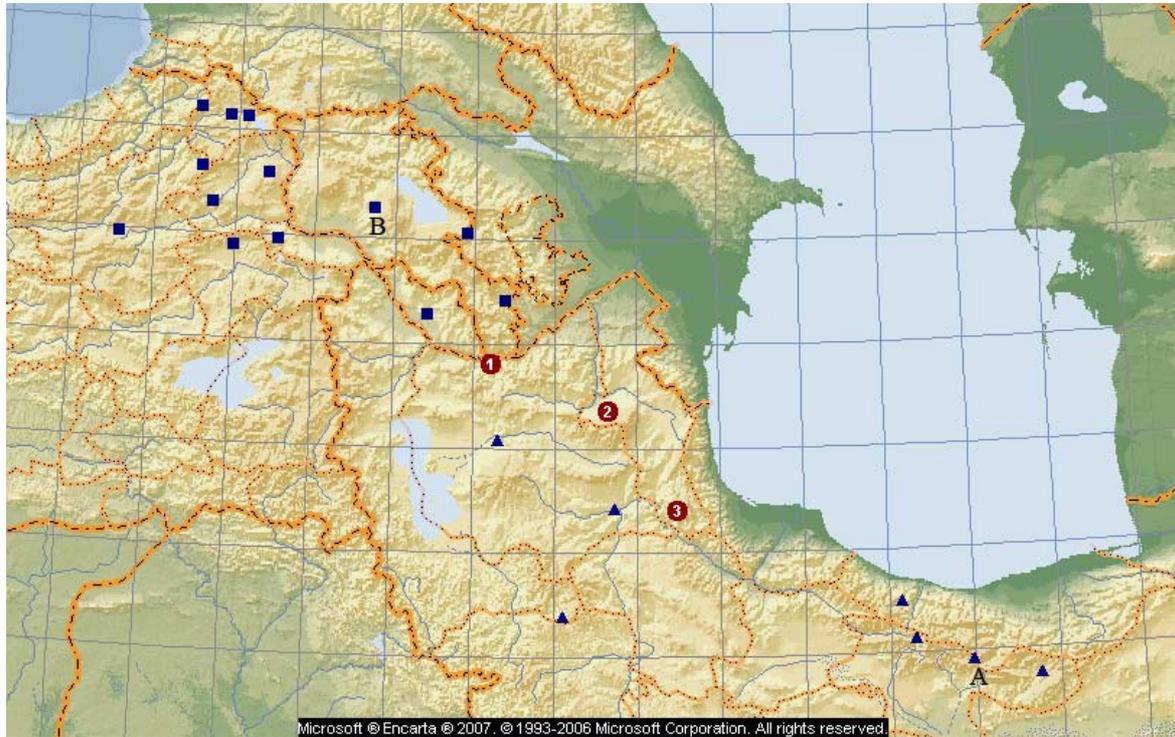


FIGURE 1. ■: Localities of *Vipera (Acridophaga) erivanensis* (Baran et al., 2005) (Nilson and Andren, 2001). ▲: localities of *Vipera (Acridophaga)* in Iran noted by Latifi (2000). ●: newly found localities of *Vipera (Acridophaga)* in Iran, 1: Kiamaki Mountain. 2: Sabalan Mountain. 3: Susahab village. A: type locality of *Vipera ebneri*. B: type locality of *Vipera erivanensis*.



FIGURE 2. *Vipera (Acridophaga) erivanensis* collected from the eastern slope of Sabalan Mountain



FIGURE 3. *Vipera (Acridophaga) ebneri* collected from Susahab village in the western Alborz Mountains.

TABLE 1. Morphological characters of examined specimens. Ven: number of ventral scales (Dowling, 1951). Gul: number of gular scales. Scd: number of subcaudal scales. Dor: number of dorsal scales (anterior/midbody/posterior). Sup: number of supralabial scales (right/left). Ifl: number of infralabial scales (right/left). Cir.oc: number of circumocular scales (right/left). Lor: number of loreal scales. (right/left) (Nilson and Andren, 2001) SVL: snout vent length (mm). TL: tail length (mm). Morphological data on *Vipera ebneri* and *Vipera erivanensis* from Mallow et al. (2003) and data on *Vipera (Acridophaga)* of Iran from Latifi (1991). The number of subcaudal scales is presented for each sex separately; the remaining characters are for both sexes.

| Characters | (ZMGU 473) (F) | (ZMGU 474) (F) | (ICST'ZM 7H1099) (M) | (ICST'ZM 7H1098) (F) | <i>V. ebneri</i> Mallow et al. 2003 (M and F) | <i>V. erivanensis</i> Mallow et al. 2003 (Mand F) | <i>Vipera</i> (<i>Acridophaga</i>) Latifi 1991 (M and F) |
|------------|----------------------|----------------------|----------------------------|----------------------------|--|--|---|
| Ven | 138 | 137 | 132 | 131 | 123-134 | 133-143 | 123-145 |
| Gul | 2 | 2 | 2 | 1 | | | |
| Scd | 29 | 27 | 37 | 25 | 23-34 (M) 19-25 (F) | 23-30 (M) 32-39 (F) | 21-37 |
| Dor | 21-21-17 | 21-21-17 | 21-21-17 | 21-21-17 | --21-- | --21-- | --21-- |
| Sup | 8/10 | 9/9 | 9/9 | 8/8 | 8-10 | 8-10 | 8-9 |
| Ifl | 10/10 | 10/10 | 10/10 | 10/10 | | | 9-11 |
| Cir.oc | 8/10 | 10/9 | 11/9 | 9/10 | 8-10 | 8-11 | 9-11 |
| Lor | 6/6 | 6/8 | 4/5 | 4/5 | -- | -- | -- |
| SVL | 297 | 228 | 335 | 320 | -- | -- | -- |
| TL | 33 | 28 | 54 | 49 | -- | -- | -- |

The specimens were preserved in formalin; so, they were relatively darkened. The two remaining specimens were an adult male and an adult female from the private collection of A. Naderi. The female specimen (ICST'ZM7H1098) was collected from Gilan Province, near Susahab village (37° 25'N 48° 28'E). The male specimen (ICST'ZM7H1099) was collected from Ardabil Province on the northern slope of the Sabalan Mountain, Shabil village (38° 19'N 47° 50'E) (Fig. 2). Both

specimens were preserved in ethanol and were in good condition. The specimens were labeled "International Center for Science, High Technology, and Environmental Science Zoological Museum (ICSTZM)". Morphological data on the specimens are presented in Table 1. The color pattern of the specimens is shown in Figures 2 and 3.

The ventral and subcaudal pholidosis and supralabial patterns of the specimens are similar to *Vipera erivanensis* from Kiamaki Mountain and the northern slope of Sabalan Mountain. The single specimen from Susahab village in the westernmost of Alborz Mountains, based on the absence of supralabial patterning and on scalation (Table 1), seems to be *Vipera ebneri*. Although Latifi (1991, 2000) did not examine specimens from these localities and identified all Iranian specimens of the subgenus *Acridophaga* as *Vipera erivanensis* (= *Vipera ebneri*), the examination of his data on the number of ventral and subcaudal scales of the specimens examined reveals that he studied both *Vipera erivanensis* and *Vipera ebneri* in his recorded localities.

After Latifi's death in 2005, his reptile collection in the Razi Vaccine and Serum Research Institute became inaccessible, so we do not know the localities from which *Vipera erivanensis* and *Vipera ebneri* were obtained. Based on the results of this work, we may conclude that distribution of *Vipera erivanensis* reaches south of the Aras Valley and extends into the northwestern of Iran. On Kiamaki Mountain, adjacent to the Armenian border and on the northern slope of Sabalan Mountain, *Vipera erivanensis* is present. Based on a single specimen of *Vipera ebneri* from the westernmost of Alborz Mountains in Susahab village, it is almost certain that *Vipera ebneri* is present in the western and central Alborz Mountains. Based on Latifi (1992, 2000), the occurrence of both species in other regions of the Azerbaijan Mountains in Eastern Azerbaijan Province is possible.

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