

Morphological variation between three populations of the Caspian Bent-toed Gecko, *Cyrtopodion caspium* (Eichwald, 1831) in Northern Iran: evidence for incipient speciation?

(Sauria: Gekkonidae)

Faraham Ahmadzadeh, Vida Hojati, Afshin Faghiri

Abstract. In order to determine population variation in the Caspian Bent-toed Gecko, *Cyrtopodion caspium*, nine morphometric, six meristic and four ratios were assessed in 48 adult males from three populations in the northern part of Iran (Moghan Steppe, Damghan and Sari). The Moghan population proved to be the largest in most characters compared to the Damghan and Sari populations. Principal Components Analysis (PCA) discriminated the Moghan population in the northwest of Iran from the other two populations. Although all populations occupy different habitats, the lack of significant differences between two geographically close populations (Sari and Damghan) shows that habitat type on the larger scale is not the reason for separation. So it is inferred that the geographic isolation of the Moghan population and reduced gene flow are responsible for the incipient speciation occurring between these populations.

Key words. Morphological variation, *Cyrtopodion caspium*, Moghan, Damghan, Sari, Iran.

Introduction

With more than forty species in thirteen genera, Iran has a diverse gecko fauna (LEVITON et al. 1992, RASTEGAR et al. 2008, FIROUZ 2005, ANDERSON 1999). *Cyrtopodion caspium* (Eichwald, 1831) is the most common gecko in northern Iran and comprises two subspecies in the Caspian Sea region (ANDERSON 1999, SZCZERBAK et al. 1996). *C. caspium caspium* is widely distributed in the eastern part of the Caucasus, Middle Asia including Turkmenistan, Uzbekistan, southern Tajikistan, southwestern Kazakhstan, northern Afghanistan and Iran (SZCZERBAK 2003, KAMI 2005). The northern border of its range is a line from Komsomolets Bay on the northeastern shore of the Caspian Sea to the northern coast of the Aral Sea and Syr Darya. In Iran it is known to occur in the Mazandaran and Gorgan regions, northern and eastern Khorasan, extending south to Sistan from sea level up to 1700 m (ANDERSON 1999). *C. caspium insularis* (Akhmedov & Szczerbak, 1978) occurs on the island of Vulf in the Caspian Sea and is known only from the type locality. It differs from the nominate subspecies in having the first pair of postmental shields usually separated from each other by gular scales, though there may be a tiny dot-like contact, while in the nominate subspecies they are broadly in contact (AKHMEDOV & SZCZERBAK 1978).

According to the literature and distribution maps, this species has not been recorded from the western part of the Caspian Sea coastal region (ANDERSON 1999, SZCZERBAK 2003). Recently, AHMADZADEH et al. (2008) reported this gecko from Bileh-sovar county, its southernmost known distribution in the western part of the Caspian Sea. Morphologically, this