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## **FIRST RECORD OF TAIL BIFURCATION IN HORVATH'S ROCK LIZARD *IBEROLACERTA HORVATHI* (JULIAN ALPS, FRIULI, NORTH-EASTERN ITALY)**

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**Riassunto – Prima segnalazione di biforcazione della coda nella Lucertola di Horvath *Iberolacerta horvathi* (Alpi Giulie, Friuli).** L'osservazione, avvenuta il 14-9-2019, di un individuo di Lucertola di Horvath *Iberolacerta horvathi* su un muro di sostegno della strada della Val Raccolana, rappresenta la prima segnalazione della biforcazione della coda nel genere *Iberolacerta*.

**Parole chiave:** Lucertola di Horvath, *Iberolacerta horvathi*, Biforcazione della coda, Alpi Giulie, Friuli, Italia.

**Abstract –** The observation on 14-9-2019 of an individual of Horvath's rock lizard *Iberolacerta horvathi* on a retaining wall of the Raccolana Valley road is the first record of tail bifurcation in the genus *Iberolacerta*.

**Key words:** Horvath's rock lizard, *Iberolacerta horvathi*, Tail bifurcation, Julian Alps, Friuli, Italy.

### **1. – Introduction**

Horvath's rock lizard *Iberolacerta horvathi* (MÉHELÝ, 1904) has an Alpine - Dinaric distribution (SILLERO *et al.*, 2014) and inhabits montane environments up to 2000 m a.s.l. (DARSA, 1972). The species lives both in natural habitats, such as rock faces, screes, beds and banks of watercourses, pastures with rocks, and in environments deriving from human intervention, such as road scarps, walls, bridges, weirs, embankments and other structures (RASSATI, 2010).

In amphibians and reptiles, tail regeneration after amputation, with the possibility of multiple regeneration, is a known phenomenon (STEFANELLI, 1951), but its frequency on a population scale is poorly known. The process assumes different morphological and size characteristics in the various individuals (cf. bibliography cited below). It has already been described in various families of Sauria and specifically in Lacertidae in *Acanthodactylus aegyptius* (STARK *et al.*, 2018), *Acanthodactylus erythrurus* (MONTES-GAVILÁN *et al.*, 2018), *Algyroides nigropunctatus* (KOLEŠKA & JABLONSKI, 2015), *Lacerta agilis* (DUDEK & EKNER-GRZYB, 2014; GORDEEV, 2017; KOLENDA *et al.*, 2017; RAMADANOVIĆ & ZIMIĆ, 2019), *Lacerta viridis* (STOJANOV *et al.*, 2011), *Lacerta schreiberi* (MONTES-GAVILÁN *et al.*, 2018), *Ophisops elegans* (TAMAR *et al.*, 2013), *Podarcis bocagei* (MONTES-GAVILÁN *et al.*, 2018), *Podarcis erhardii* (BROCK *et al.*, 2014), *Podarcis liolepis* (MONTES-GAVILÁN *et al.*, 2018), *Podarcis melisellensis* (BAECKENS *et al.*, 2018), *Podarcis muralis* (BADIANE, 2017; POLA & KOLEŠKA, 2017; MONTES-GAVILÁN *et al.*, 2018; SORLIN *et al.*, 2019), *Podarcis virescens* (MONTES-GAVILÁN *et al.*, 2018), *Teira dugesii* (KOLEŠKA *et al.*, 2017), *Timon lepidus* (MONTES-GAVILÁN *et al.*, 2018), *Zootoca vivipara*



**Figure 1** - Individual of *Iberolacerta horvathi* with tail bifurcation / Individuo di *Iberolacerta horvathi* con biforcazione caudale (Photo G. Rassati).

(DUDEK & EKNER-GRZYB, 2014; KOLENDA *et al.*, 2017). Tail bifurcation was not previously known in the genus *Iberolacerta*.

## **2. – Materials and methods**

Over the last 20 years, the present author has conducted numerous field surveys aimed at better defining the knowledge of *Iberolacerta horvathi* with particular regard to Italy (RASSATI, 2019). Some of these activities were carried out in the Raccolana Valley (Julian Alps, Friuli, North-eastern Italy) where the first quantitative data (together with others from the Lumiei Valley, Carnic Alps) on the species in Italy were collected by means of a standardized methodology. During the surveys, examination of the individuals was performed at a very close distance and by way of photographs with a compact camera.

## **3. – Results and discussion**

On 14-9-2019 an individual of *Iberolacerta horvathi* with lateral caudal bifurcation in the proximal third (Fig. 1) was observed on a concrete retaining wall of the

Raccolana Valley road (46°23'32"N 13°27'58"E) at 1075 m a.s.l. The site is near the valley head on the lower slope of the Jôf di Montasio group and has SW exposure. The gradient is greater than 100% and vegetation is absent. The surrounding area is characterized by rocks and, to a small extent, screes, as well as a wood of European beech *Fagus sylvatica* and Norway spruce *Picea abies*.

The colour pattern was that typical of the species, as were the morphometric indices and morphognostic traits, with the exception of the tail (Fig. 1); the individual, very alert and active, had no other noteworthy characteristics and appeared to be in a generally good condition. More than 100 individuals have been observed in the area, used for many years for various investigations (RASSATI, 2019), and tail bifurcation was not recorded in any other one.

Caudal autotomy is a defensive mechanism used by many lizard species in response to attempted predation or an intraspecific aggressive interaction (ARNOLD, 1984; BATEMAN & FLEMING, 2009). In the reported case, it was not possible to determine the cause of the tail breakage.

On the basis of the available information, it is believed that the described case is the first record of tail bifurcation in the genus *Iberolacerta*, and thus also in *I. horvathi*.

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