

Tail trifurcation recorded in *Algyroides nigropunctatus* (Duméril & Bibron, 1839)

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The Dalmatian *Algyroides*, *Algyroides nigropunctatus* (Duméril & Bibron, 1839), is a diurnal lizard belonging to the family Lacertidae. It occurs on the coasts of the Adriatic and Ionian seas from easternmost part of Italy (Istria) to southern Greece (Sillero *et al.* 2014). This species inhabits coastal areas as well as inland mountain regions, mainly in central-western Balkans (Albania, southern parts of Serbia/Kosovo – Metohija, eastern Macedonia and eastern Montenegro; Ajtić *et al.* 2005, Urošević *et al.* 2015) which reflects the strong influence of Mediterranean climate on these areas.

As other lacertid lizards, *A. nigropunctatus* uses caudal autotomy as widespread strategy to avoid being predated (Bateman & Fleming 2009; Pafilis *et al.* 2009). Bifurcation or more rarely trifurcation of tail is occasionally observed as a probable result of previous injury possibly caused by predation, not by developmental tail deformity (Lynn 1950). There are several previous records of tail bifurcation in lacertid lizards (e.g. Tamar *et al.* 2013; Dudek & Ekner-Grzyb 2014) and also in other families – e.g. Anguidae (Conzendeny *et al.* 2013) or Gekkonidae (Kumbar *et al.* 2011). Natural tail trifurcation in lizards seems to be more exceptional as there is few records in available literature (e.g. Pheasey *et al.* 2014).

On June 7th 2015 between 11.00 h and 12.00 h of local time we recorded and captured an adult *A. nigropunctatus* male (Fig. 1A) basking on a rocky place close to Dedaj village, Metohija, Serbia/Kosovo (42.28528°N 20.55711°E, 332 m a.s.l., DM68 in the 10 x 10 UTM geographic coordinate grid system – new locality record sensu Urošević *et al.* 2015). After a closer examination of the individual we found out that it has trifurcated tail. The tail was trifurcated approximately 10 mm posterior to the cloaca (Fig. 1B, C). The longest tail measured approximately 30 mm. The second longest tail measured approximately 15 mm with a smaller third tail growing from its base and measuring approximately 10 mm. The individual was in good condition without other deformities or injuries. As far as we know there are no other previously observed cases of tail trifurcation in this species. Total number of individuals observed on the locality was two adults.

As expected, tail bifurcation or trifurcation is usually considered as a result of previous injury caused by predation (Lynn 1950) and is probably relatively common deformity in species using tail autotomy. Most frequently, a predator may cause an injury but the tail sometimes stays attached which subsequently causes an incomplete caudal autotomy. This injury might be extensive enough to start the regeneration process and growing of a new tail in the place of injury while the original tail stays attached (Dudek & Ekner-Grzyb 2014). However, our specimen seemed to have its original tail completely removed considering different scalation on all of its regenerated tails (Fig. 1B, C). Alibardi (2010) describes an experiment leading into a formation of supernumerary tail using autotransplantation of spinal cord and ependyma (for details see the article). Spinal cord seems to be the essential element promoting the process of regeneration in supernumerary tail formations in natural conditions in reptiles (Evans & Bellairs 1983). We cannot be sure

which one of the two mechanisms described above was present during formation of this specific tail trifurcation and whether there were some other factors included. However considering findings of Alibardi (2010) we expect that specimen we observed could have suffered a major crushing injury resulting in fragmentation of the vertebrae and subsequent separation of individual regenerating tails. There are also records of bifurcated tails of approximately even length ("twin" tails) (Mitchell *et al.* 2012; Cordes & Walker 2013) which may indicate complete loss of original tail as well. However, the specimen was not collected and preserved therefore we cannot proceed with further examination by x-ray.



Figure 1. Recorded specimen of *Algyroides nigropunctatus* with trifurcated tail. A - overall view in natural condition; B - ventral view; C - dorsal view.

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