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GLASNIK ZEMALJSKOG MUZEJA U BOSNI I HERCEGOVINI.

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The Rôle of the Regenerated Tail of the Lacertidae at the Preservation of the Species.

(A Contribution to the Biology of Lacerta taurica fiumana Wern.)

By Dr. **St. J. Bolkay,**
Keeper of the Department of Vertebrates at the Sarajevo State-Museum.

Uloga regeneriranog repa guštera kod uzdržanja vrsta.

(Prilog biologiji Lacerta taurica fiumana Wern.)

Napisao: Dr. **St. J. Bolkay,**
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It is well-known that the tail of the Lacertidae is arranged for autotomy, i. e. if it is seized by an enemy, it breaks off more or less easily. I say »more or less«, because one can divide the whole family of the Lacertidae in two great groups, according to the frailty of the tail. Already Prof. L. de Méhely[1]) has pointed to the fact that his »Neolacertae« has a much more tough tail, than the »Archaeolacertae« of tender constitution. He has also related that we may catch a Green Lizard *(Lacerta viridis* Laur.) for instance by the tail and draw it out of its hole. I have caught according to this method a big specimen of the Great Green Lizard *(Lacerta major* Blgr.) at Mostar (Hercegovina) in 1918.

The tail of the Lacertids is serving essentially for two important vital functions: the one is that of a balancing-organ during the running and jumping, the other is the rôle of a magazine for reserve-food. We may very clearly observe on continually fasting Lizards that the tail in the first line begin to grow lean in consequence of the consumption of the reserve-food accumulated in it. Upon this function of the tail drew already Dr. Rob. Mertens[2]) our attention. He is relating in his article cited below that some lizards, living in dry localities (deserts, steppes), has in their tail a very important magazine of food.

In the following observation, which I made in the marshes of Hutovo (East-Hercegovina) on a small island called »Karaotok« (Black Island) on the 23d of April 1924, I had an occasion to observe the rôle of the regenerated tail during the pairing-act.

It was on a warm and sunny, but windy day, as I went out about noon (11^h 25′ a. m.) to study the mode of life of the beautiful, little lizard *Lacerta*

[1]) L. v. Méhely, Materialien zu einer Systematik und Phylogenie der *muralis*-ähnlichen Lacerten. Ann. Mus. Nat. Hung. Budapest, 1907.

[2]) Rob. Mertens, Über die Funktion des Schwanzes der Wirbeltiere. Naturwissenschaftliche Wochenschrift. Bd. 20. Nr. 51. p. 724.

taurica fiumana Wern., which is so very characteristic to the warmer regions of Hercegovina. I was scarcely going a few steps, when I discovered under one thorny bush a brilliantly coloured old male of the *Lacerta taurica fiumana* var. *modesta* Eim. This male was holding a striped female of the same species at the tip of the tail, which was totally regenerated almost from its basis. The female had a very strong inclination to run away, but it was impossible. The nervous debility of the female was clearly visible on the vibrating motion of the tail, which was not unlike to the vibrating motion of the tail, observeable among the various Newts (Molge = Triton) during their amorous play.

Holding the male the female in this manner quite fast, he succeeded to reach her body with a sudden jerk and with a strong bite in the left flank he secured her definitively. Being the female in this way secured, the male has bent his body semi-lunar to the right, and embraced the root of the tail of the female with his right hinder-foot. In this position he pressed his right penis in the cloaca of the female. The body of the female was from this moment covered by that of the male, so that henceforward only her head remained partially visible.

The whole act lasted 12 minutes and carried upon itself the unmistakable characteristics of the violence. The male has breathed during the whole act vehemently and closed his eyes sometimes for several seconds. The female has tried also during the act of copulation to escape, but naturally it was quite impossible. After 12 minutes the pairing was finished and the female has quickly run away and disappeared under one neighbouring bush. The male has attempted to reach and catch her once more, but she disappeared definitively. After this useless exertion the male has caught a smaller dipterous insect, and devoured it with the greatest appetite. After devouring the fly, he made himself quite flat in the well-known Lacerta-like fashion, and enjoyed quite comfortably the rays of the sun.

In this whole observation the following two moments are interesting: the one is that a *Lacerta taurica fiumana* var. *modesta* Eim. male has copulated with a typical striped female of the *fiumana*, which circumstance makes quite intelligible the almost endless number of transitory forms between the two species mentioned.

The other moment is the rôle of the regenerated tail of the female in the whole act. As is known, the regenerated tail of the Lacertidae is no more brittle. The male is generally running after the female and in his endevour to catch her, he bites mostly in her tail, which in its intact condition breaks off very easily. If the regenerated tail should be accidentally also brittle, it would be a very hard task for the male to secure a female and the grand idea in the nature, i.e. the preservation of the species, would be either checked, or eventually frustrated.

To draw a conclusion, I should like only to remark that the females in general are subdueing themselves very unwillingly to the duty of the preservation of the species, which was clearly observeable in the whole pairing-act described above. The true cause of this repugnance of the females is up to now thoroughly inexplicable.

Sarajevo, August 20th 1924.

Résumé.

Dne 23. aprila o. g. posmatrao sam na ostrvu Karaotoku na Hutovu Blatu parenje *Lacerta taurica fiumana* Wern. pri toplom, ali vjetrovitom vremenu. Pri tomu sam opazio dva interesantna momenta: jedan je bio taj, da se je mužjak *Lacerta taurica fiumana* var. *modesta* Eim. pario s tipičnom prugavom ženkom, po čemu je lako razumjeti, kako nastaju mnogobrojne razne šare ovih vrsta.

Drugi momenat je uloga repa pri parenju. U ovom je slučaju uhvatio mužjak vrh ženkina repa, koji je bio skoro sav regeneriran. Budući da gušteri pri parenju skoro uvijek uhvate rep, bilo bi mužjaku vrlo teško uhvatiti ženku, kad bi rep nakon regeneracije bio krhak kao prije nje, a ovako je to lako moguće.

U Sarajevu, 20. augusta 1924.