

**HIGH TENSION OF TERRITORIAL RELATIONS AMONG MALES  
MAY NEGATIVELY INFLUENCE THEIR RELATIONS WITH FEMALES  
IN THE ROCK LIZARD *DAREVSKIA BRAUNERI* (SAURIA, LACERTIDAE)**

Alexey Yu. Tsellarius <sup>1</sup>, Elena Yu. Tsellarius<sup>1</sup>, and Eduard A. Galoyan<sup>2</sup>

<sup>1</sup> *A. N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences  
33 Leninsky Prospect, Moscow 119071, Russia  
E-mail: ale5386@yandex.ru*

<sup>2</sup> *Zoological Museum, Lomonosov Moscow State University  
2 Bol'shaya Nikitskaya Str., Moscow 125009, Russia  
E-mail: edsmail@yandex.ru*

Received 15 January 2018, accepted 31 January 2018

In previous papers we have ascertained the existence of many-year social monogamy in Brauner's lizard (*A*-relations). The data presented in this communication show that the territorial male's aggression against the female, including sexual aggression, manifests itself during, or immediately after, a territorial skirmish between the male and the intruder. During an hour after this assault, an increased frequency of rejections of social contacts with the male remained in the assaulted female. In dyads with stable long-term *A*-relations, a male's aggressiveness against his female and the frequency of the female's rejections from contacts were significantly higher in the periods with the high tension of territorial relations of the male with his neighbors. The formation of *A*-relations demands frequent male-female amicable contacts throughout more than a year as a rule. Thus, the high tension of territorial relations in a settlement may hamper the formation of social monogamy and the corresponding stable sexual relation.

**Key words:** territoriality, male's aggressiveness, social monogamy, rock lizards.

DOI: 10.18500/1814-6090-2018-18-1-2-46-53

**Acknowledgements:** This work was supported by the Russian Foundation for Basic Research (projects nos. 01-04-63064, 05-04-49468, and 15-04-03987) and the Russian Scientific Foundation (project no. 14-50-00029, theme AAAA-A16-116021660077-3).

**REFERENCES**

Lakin G. F. *Biometry*. Moscow, Vysshaya shkola Publ., 1973. 343 p. (in Russian).

Sidorenko E. V. *Methods of Mathematical Processing in Psychology*. Saint Petersburg, Rech' Publ., 2001. 350 p. (in Russian).

Tsellarius A. Yu., Tsellarius E. Yu. Dynamics of *Lacerta saxicola* Population (Reptilia, Sauria) Spatial Structure in Broad-leaved Forests of the Navagir Ridge. *Zoologicheskii zhurnal*, 2001, vol. 80, no. 7, pp. 863–868 (in Russian).

Tsellarius A. Yu., Tsellarius E. Yu., Galoyan E. A. Social Relationships Between Males and Females in Rock Lizard (*Darevskia brauneri*, Lacertidae). 1. Friendly Monogyny in Males and Polyandry in Females. *Zoologicheskii zhurnal*, 2016 a, vol. 95, no. 7, pp. 848–859 (in Russian).

Tsellarius A. Yu., Tsellarius E. Yu., Galoyan E. A. Social Relationships Between Males and Females in the Rock Lizard (*Darevskia brauneri*, Lacertidae). 2. Searching for a Place of Stable Residence, Criteria for the Choice of a Social Partner and Factors of a Friendly Inte-

gration of Dyads. *Zoologicheskii zhurnal*, 2016 b, vol. 95, no. 11, pp. 1343–1353 (in Russian).

Tsellarius A. Yu., Tsellarius E. Yu., Galoyan E. A. Female's Social Attractiveness as the Basis of arising her Long-term Sexual Connection with a Male in the Rock Lizard *Darevskia brauneri* (Reptilia, Sauria). *Current Studies in Herpetology*, 2016 c, vol. 16, iss. 3–4, pp. 151–160 (in Russian). DOI: 10.18500/1814-6090-2016-16-3-4-151-160.

Tsellarius E. Yu., Tsellarius A. Yu. Alterations of behavioural repertoire of response to the members of opposite sex in *Lacerta saxicola* from Navagir mountain. In: *Current Problems of Ecology and Evolution in the Studies of Young Scientists: Proc. of the Conference of PhD students and young scientists of A. N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences*. Moscow, KMK Scientific Press Ltd., 2006, pp. 308–316 (in Russian).

Baird T. A., Hranitz J. M., Timanus D. K., Schwartz A. M. Behavioral Attributes Influence Annual Mating Success More than Morphological traits in Male Collared Lizards. *Behavioral Ecology*, 2007, vol. 18, no. 6, pp. 1146–1154.

## НАПРЯЖЕННОСТЬ ТЕРРИТОРИАЛЬНЫХ ОТНОШЕНИЙ МЕЖДУ САМЦАМИ

Brattstrom B. H. The Evolution of Reptilian Social Behavior. *American Zoologist*, 1974, vol. 14, no. 1, pp. 35–49.

Crews D. Psychobiology of Reptilian Reproduction. *Science*, 1975, vol. 189, no. 4203, pp. 1059–1065.

Crews D., Rosenblatt J. S., Lehrman D. S. Effects of Unseasonal Environmental Regime, Group Presence, Group Composition and Males' Physiological State on Ovarian Recrudescence in the Lizard, *Anolis carolinensis*. *Endocrinology*, 1974, vol. 94, iss. 2, pp. 541–547.

Dodd C. K. The effects of toe-clipping on sprint performance of the lizard *Cnemidophorus sexlineatus*. *J. Herpetology*, 1993, vol. 27, iss. 2, pp. 209–213.

Fox S. S., Rose E., Myers R. Dominance and Acquisition of Superior Home Ranges in the Lizard *Uta stansburiana*. *Ecology*, 1981, vol. 62, iss. 4, pp. 888–893.

Hixon M. A. Territory area as a determinant of mating systems. *American Zoologist*, 1987, vol. 27, no. 2, pp. 229–247.

Jaeger R. G. Dear Enemy Recognition and the Cost of Aggression Between Salamanders. *American Naturalist*, 1981, vol. 117, no. 6, pp. 962–974.

Kelso E. C., Martins E. P. Effects of Two Courtship Display Components on Female Reproductive Behaviour and Physiology in the Sagebrush Lizard. *Animal Behaviour*, 2008, vol. 75, iss. 2, pp. 639–646.

Kwiatkowski M. A., Sullivan B. K. Mating System Structure and Population Density in a Polygynous Lizard, *Sauromalus obesus* (= *ater*). *Behavioral Ecology*, 2002, vol. 13, no. 2, pp. 201–208.

Rand A. S. The adaptive significance of territoriality in iguanid lizards. In: W. Milstead, ed. *Lizard Ecology: A Symposium*. Columbia, Univ. Missouri Press, 1967, pp. 106–115.

Rodda G. H., Bock B. C., Burghardt G. M., Rand A. S. Techniques for Identifying Individual Lizards at a Distance Reveal Influences of Handling. *Copeia*, 1988, iss. 4, pp. 904–913.

Rose B. Lizard Home Ranges: Methodology and Functions. *J. Herpetology*, 1982, vol. 16, iss. 2, pp. 353–369.

Samuel M. D., Pierce D. J., Garton E. O. Identifying areas of concentrated use within the home range. *J. Animal Ecology*, 1985, vol. 54, iss. 3, pp. 711–719.

Tokarz R. R. Mate Choice in Lizards: a Review. *Herpetological Monographs*, 1995, vol. 9, pp. 17–40.

---

### Cite this article as:

Tsellarius A. Yu., Tsellarius E. Yu., Galoyan E. A. High Tension of Territorial Relations Among Males May Negatively Influence Their Relations With Females in the Rock Lizard *Darevskia brauneri* (Sauria, Lacertidae). *Current Studies in Herpetology*, 2018, vol. 18, iss. 1–2, pp. 46–53 (in Russian). DOI: 10.18500/1814-6090-2018-18-1-2-46-53.

---