

## OPINION

*From:* Assoc. Prof. Dr. Yordan Spasov Koshev, Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences (IBER–BAS)

*Regarding:* The application of Assoc. Prof. Dr. Simeon Petrov Lukanov in professional field “4.3. Biological Sciences”, scientific specialty “Ecology and Ecosystem Protection,” for the needs of the Department of “Community Ecology and Conservation Biology” within the Division of “Ecosystem Research, Ecological Risk, and Conservation Biology” at IBER-BAS, announced in the State Gazette, No. 63 of 01.08.2025.

This statement is prepared in accordance with Order No. 85 of 29.09.2025 issued by the Director of IBER-BAS.

At the beginning of the 21st century, herpetological studies in Bulgaria underwent a revival. Fundamental and applied research on amphibians and reptiles rapidly developed in the following areas: monitoring and conservation; taxonomy; phylogenetics and population genetics; distribution (field guides and atlases); ecology and behavior; and more. As a result, a scientific community of herpetologists has formed, who-due publish in collaborative works. In the list of publications provided by Dr. Lukanov, there are joint papers with the following scholars: Prof. Dr. B. Naumov (10 joint publications); Chief Assist. Dr. E. Vacheva (10 joint publications); Assoc. Prof. Dr. A. Dyugmedzhiev (9 joint publications); Chief Assist. Dr. M. Slavchev (6 joint publications); Prof. G. Popgeorgiev (5 joint publications), among others. In past and upcoming competitions for academic positions involving these scholars, these same publications have been or will be presented as their personal scientific contributions with the same weight as those presented by Dr. Lukanov.

It is well known that contemporary ecological and behavioral research is a collective effort. However, in this case, distinguishing the personal contributions and the participation of Dr. Lukanov in these collaborative publications is of particular importance for the awarding of an academic position.

In the provided publication list, Dr. Lukanov is first author of nine publications (three of them in Q1 journals) and second author in four publications. In my opinion, this is a strong indication of his significant personal contribution to both fundamental and applied scientific research.

The work of Dr. Lukanov highlights the following original scientific contributions, structured in distinct research directions:

- **Bioacoustic and morphometric characteristics of tree frogs of the genus *Hyla*.** Dr. Lukanov developed the field of bioacoustic analysis of frogs, expanding upon his doctoral dissertation. He complements this research with analyses of photographs of the lateral line using specialized software. By applying combined morphometric and bioacoustic methods to *Hyla arborea* and *Hyla orientalis*, he demonstrates a clear separation between the species, with the exception of one Bulgarian population that is genetically *H. orientalis* but clusters morphometrically with *H. arborea*, which he explains as likely reintgression.

- **Contributions to ecotoxicology.** Dr. Lukanov supervised PhD candidate Dr. B. Dimitrova, with whom he worked on the role of rice fields as habitats for anuran amphibians and on the effects of pesticides used in these agroecosystems. Through bioacoustic analysis, they demonstrate that all recorded species show higher activity in rice fields compared to a natural water body. During the study, they detected 19 and 21 different substances, respectively, that affect amphibians, all found in concentrations within acceptable limits.
- **In an original experimental study, Dr. Lukanov investigates the effects of ammonium nitrate** at different concentrations (0 mg/L, 50 mg/L, 100 mg/L, and 200 mg/L) on the development and behavior of the agile frog (*Rana dalmatina*) and the common toad (*Bufo bufo*). The results show that ammonium nitrate can significantly affect *R. dalmatina* tadpoles, causing direct toxicological effects on survival and growth, as well as reduced mobility. In *B. bufo*, the effects manifest in reduced growth and activity.

Regarding the submitted materials, I have the following notes and comments:

- Some contributions should be shortened-for example, Contribution 1, which is a page and a half long.
- It is noticeable that since 2014, Dr. Lukanov has lacked popular-science outreach activities and student engagement. I recommend that he focus on attracting young researchers in the future.
- In his future work, Dr. Lukanov may need to form an independent research direction and research group dedicated to bioacoustic and ecotoxicological methods in amphibian research. This would allow him to continue his original studies, which significantly distinguish him from other co-authors.

Dr. Lukanov is a respected scholar and leader of several successfully completed projects, supervisor of a successfully defended PhD student, section editor for herpetology at the *North-Western Journal of Zoology* and Editor-in-Chief of *Acta Zoologica Bulgarica*.

My personal impressions of Assoc. Prof. Dr. Lukanov are excellent. I have had the opportunity to conduct field missions with him and am well acquainted with his profound herpetological knowledge, which he skillfully applies in his scientific work. His meticulousness is proverbial - not only in science but also in administrative work.

Based on the presented evidence, it can be concluded that Dr. Simeon Lukanov is an active, productive, and internationally recognized researcher with a well-defined scientific profile, a sought-after collaborator with significant scientific contributions and international experience.

The research activities of Assoc. Prof. Dr. Lukanov meet the criteria set by the Scientific Council of IBER-BAS and fully correspond to the goals of the present competition. With full confidence, I recommend that the Scientific Council of IBER-BAS elect Dr. Simeon Lukanov to the academic position of “Professor” in Professional Field 4.3 “Biological Sciences,” scientific specialty “Ecology and Ecosystem Protection.”

25.11.2025

Sofia

Prepared by:

/Assoc. Prof. Dr. Yordan Koshev,

Chair of the Scientific Jury/