Вх. № 1056/НО-05-06/ 18.11.2024 г.

S T A T E M E N T

By Professor Daniela Marinova Nikolova, PhD
Department of Ecology and Environmental Protection, Faculty of Biology, Sofia University "St. Kliment Ohridski"

Regarding the competition for the academic position „Associate Professor" in the professional area *4.3. Biological Sciences,* scientific speciality "*Zoology*", announced by IBER - BAS, State Gazette no. 66/06/08/2024

The competition has been announced for the needs of the "Community Ecology and Conservation Biology" section of the "Ecosystem Studies, Ecological Risk and Conservation Biology" department at IBER-BAS. Chief Assistant Professor Dundarova, PhD, was the only candidate who submitted all the required documents.

In this competition, Dr. Dundarova presented 23 scientific papers, most of them published in journals with impact factors (IF). The candidate is most often in first, second, or third place in the publications presented, which proves her leading role in scientific research.

Dr. Dundarova has fulfilled the minimum national requirements for the position of "Associate Professor." The evaluation results are as follows:

The indicator from group "A" is fulfilled (50 points).

The indicators from group "B" bring the candidate 127 points, out of the required 100. Here, 6 publications indexed in WoS or Scopus with the following quartiles are included: three publications with Q1 and two with Q2, published in the specialized scientific journals *Animals, BMC Veterinary Research, Pathogens, Zootaxa,* and one publication with Q4 in *Acta Zoologica Bulgarica* journal. Research in these publications focuses primarily on cave-dwelling bat species, their lyssavirus load, and associated underground and alpine habitats in Bulgaria and Central Asia. The prestigious nature of these publications attests to the significance of her work.

According to indicators from group "Г" (Г 7) Ch. Assistant Professor Dundarova has presented works for 239 points out of the required 200, distributed as follows: five publications with Q1, two publications each with Q2, Q3, and Q4 quartiles, and two publications in journals

with SJR without IF. The papers have been published in prestigious scientific journals such as *Frontiers in Veterinary Science, Diversity, and Animals*.

According to indicator "D", the candidate has 76 points, out of the required 50. Out of a total of 43 citations, 38 are in journals in Scopus or WoS. The high citation of scientific works in prestigious scientific journals such as *Emerging Infectious Diseases, Mammalia, The Journal of Infectious Disease, Ecology and Evolution, Acta Chiropterologica, and Parasitology Research,* are another proof of the importance of her scientific research, and the relevance of her field of work.

Main research areas of the candidate and scientific contributions

Dr. Dundarova has a clearly defined profile of research work. Her main scientific interests are related to the study of the ecology and conservation of bats, the taxonomy of bats and their ectoparasites, bats as a vector and reservoir of European lyssaviruses, phylogeography of closely related bat species using modern molecular genetic analysis methods. The indicated interests determine the main scientific directions in the candidate's work: 1. The role of cave-dwelling bat species as a vector and reservoir of European rabies viruses (lyssaviruses) 2. Taxonomic studies of bats in South Kazakhstan and their ectoparasites. 3. Underground habitats as a basic unit for the protection of vulnerable bat colonies in Southwestern Kyrgyzstan, 4. Ecology and taxonomy of bats in the alpine zone of the Pirin Mountain, 5. Phylogeography of related bat species.

A significant contribution in the first direction is the explanation of the distribution of Phylogroup II lyssaviruses in Europe. It was found that casual contact with bats should be considered as a potential risk of rabies in underground roosts, which is of important practical significance. Based on the conducted research, antibodies against rabies were also found in the populations of cave-dwelling bat species in Bulgaria. Regarding the second direction in the candidate's work - Taxonomic studies of bats in South Kazakhstan and their ectoparasites, it can be pointed out that for the first time the female, male and protonymph of *Spinturnix otonycterisi* Dundarova & Orlova, sp. nov. (Acari: Spinturnicidae) are described from specimens collected on the rarely captured vespertilionid bat *Otonycteris leucophaea* (Severcov, 1873) in South Kazakhstan. This parasite is believed to be distributed throughout its host range in central Asia. In the third direction - Underground habitats as the main unit for the protection of vulnerable bat colonies in south-western Kyrgyzstan, it can be stated that for the first time outside the tropics an assessment of the number of bats, the species diversity and the

conservation priority of each cave was made using Bat Cave Vulnerability Index (BCVI) in underground habitats in Southwestern Kyrgyzstan. It is essential to establish the fact that two species are highly endangered and in need of conservation, requiring a change in their conservation status. An important contribution to the candidate's work is also the study of the ecology and taxonomy of bats in the alpine zone of Pirin Mountain by using ultrasound signals, which complements the knowledge of the bat fauna and biological diversity in this part of the country. Very interesting and valuable are the studies in the field of phylogeography of closely related species. Multilocus phylogeography performed in the putative sympatric zone of *M. mystacinus* and *M. davidii*, which are the related species of the *Myotis mystacinus* morphogroup, reveals that the two species evolved in allopatry but came into secondary contact during range expansions. This original conclusion was achieved by applying a multilocus phylogeographic approach for the first time. The authors find this method particularly suitable for elucidating the role of species interactions in shaping the current distribution patterns of similar taxa. Of great contribution in science and practice are also the studies regarding the health status of bats, by using the number and diversity of their ectoparasites, the study of bats along the coast and the Bulgarian water area of the Black Sea, from which they draw important conclusions about the need to organize of long-term acoustic monitoring to determine the migratory movements of bats.

The competition materials also include a list of the candidate's participation in international and national scientific forums, including the 19th International Bat Research Conference, Austin, USA, 3-rd Balkan Speleological Conference, Sofia, Bulgaria, 16th European Bat Research Symposium, Tarragona, Spain. These participations in prestigious scientific forums complete her high scientific research achievements and activity. Besides, we must also add her participation as a bat expert and bio speleologist in many international and national expeditions such as the Cave Expedition "Lyura - Eastern Albania", 2015, Cave Expedition "Iran", Cave Expeditions "Laos", "Kosovo", "China".

The professional skills of Ch. Associate Professor Dundarova is also evident from her project activities. She participated in the implementation of numerous projects aimed at studying the ecology and biology of bats in different parts of the world - the Czech Republic, Slovakia, Kyrgyzstan, and Vietnam, all in the field of the competition. Part of the projects were financed by the Bulgarian National Science Fund, Ministry of Education and Science, Ministry of Environment and Water, under the bilateral cooperation of the Bulgarian Academy of Sciences, and another part from external sources - the Rufford Foundation, the INTERREG V-

A program "Greece-Bulgaria 2014-2020". Dr. Dundarova has led 5 scientific projects. The specialized courses she has completed, including *Molecular approaches, methods and techniques in animal ecology*, *Foundation level in the theory of project management for wildlife conservation*, along with her proficiency in several foreign languages, significantly enhance her capabilities as a scientist. These skills enable her to lead projects effectively and collaborate seamlessly with international teams. Through media appearances, Dr. Dundarova artistically and engagingly acquaints the public with current issues related to bats, promoting the results achieved in her work on various projects. This undoubtedly increases the interest and motivation of young biologists to work with this difficult but very interesting order of small mammals.

Conclusion

The scientific contributions of Dr. Heliana Dundarova in the field of conservation biology, biodiversity, ecology, and taxonomy of bats, her erudition, and her recognition as a good and recognizable scientist at home and abroad, give me the reason to express my positive opinion regarding her candidacy for the academic position of "Associate professor". As a member of the Scientific Jury for the announced competition, I recommend the members of the esteemed Scientific Council of IBER-BAS to vote positively for the election of Ch. Assistant Professor Heliana Dundarova, PhD in the academic position "Associate Professor" in professional direction 4.3. Biological sciences, speciality "Zoology".

Sofia, 12.11.2024

Prof. Daniela Nikolova