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STATEMENT

Assoc. Prof. Dr. Hristo Angelov Dimitrov

Department of Zoology, Biological Faculty of the Plovdiv University "P. Hilendarski"

Subject: The materials submitted for the competition for the academic position **of Associate Professor** at the Institute of Biodiversity and Ecosystem Studies, BAS in the field of higher education 4.3 "Biological Sciences", subject area: "Zoology" for the needs of the Section "Community Ecology and Conservation Biology" at the Department "Ecosystem Research, Ecological Risk and Conservation Biology" of IBEI-BAS.

In the "Associate Professor" competition, announced in the State Gazette, issue 66 of 06.08. 2024 for the needs of the section "Community Ecology and Conservation Biology" at the Department "Ecosystem Research, Ecological Risk and Conservation Biology", as the only candidate participated **Dr. Heliana Dundarova** from the Section "Community Ecology and Conservation Biology" at the Department "Ecosystem Research, Ecological Risk and Conservation Biology" at the Institute of Biodiversity and Ecosystem Research at BAS. The documents submitted by the candidate have been prepared in accordance with the requirements of the Academic Staff Development Act in the Republic of Bulgaria and the IBEI criteria for the academic position of Associate Professor.

Dr. Dundarova obtained her Bachelor's degree from the University of Sofia "St. Kl. Ohridski". She subsequently pursued her studies at Charles University in Prague, Czech Republic, where she obtained a Master's degree in Zoology. Since 2012, Dr. Dundarova has been affiliated with the Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences. She commenced her tenure at the Institute as a Specialist Biologist and subsequently obtained her Ph.D. in Zoology in 2018.

The candidate participated in the competition with 27 scientific papers, 23 directly aligned with the competition. Seventeen papers have an Impact Factor, two have SJR, and four have not been referenced or indexed in world-known databases with scientific information (Web of Science and Scopus). Reference for the compliance of the points of the chief assistant. Dr. Heliana Dundarova, with the national minimum science metric requirements, shows the total value of indicators A, B, C and D of 492 points, which corresponds to and exceeds the minimum

requirements of Article 26 of the Academic Staff Development Act in the Republic of Bulgaria and The Regulations on the Conditions and Procedure for the Acquisition of Scientific Degrees and Titles and for Holding Academic Positions at BAS (2018): Indicator A - 50 points out of 50 points, Indicator C - 127 points out of 100 points, Indicator D - 239 points out of 220 points, Indicator E - 76 points out of 60 points.

The primary focus of the candidate's research activities is the study of a significant group of mammals with conservation implications, including cave-dwelling bats. The research primarily focuses on cave-dwelling bat species, their lyssavirus load, and the subterranean and alpine habitats they inhabit, with a particular emphasis on Bulgaria and Central Asia.

The research on cave-dwelling bat species as vectors and reservoirs of European rabies viruses (lyssaviruses) is currently a highly relevant topic of investigation. A notable contribution is the proposed hypothesis regarding the dissemination of lyssaviruses of phylogroup II in Europe via the contact zone between two zoogeographic regions: the Palearctic and Ethiopia. A similar study was conducted for the first time in Bulgaria, where antibodies to rabies were detected in populations of cave-dwelling bat species using two ELISA kits. Furthermore, it is crucial to ascertain the optimal season for detecting the lyssavirus load in bats (see papers B2 and 4, D11).

Another significant area of Dr. Dundarova's research is the taxonomic study of bats from southern Kazakhstan and their ectoparasites. This is the first time that the female, male, and protonymph of *Spinturnix otonycterisi* Dundarova & Orlova, sp. (Acari: Spinturnicidae) have been described as a specific ectoparasite of the Turkestan long-eared bat (*Otonycteris leucophaea* Severtsov, 1873), a very rare species. Only isolated records of the Turkestan long-eared bat are known from central Asia (Paper C3).

Dr. Dundarova's research encompasses ecological conservation studies of bats in subterranean habitats in Kyrgyzstan. For the first time outside the tropics, the abundance and diversity of bats have been assessed, and priority underground habitats for conservation in southwestern Kyrgyzstan have been identified using the Cave Vulnerability Index (BCVI) (papers B15, D14).

The ecological and taxonomic studies of the bat fauna of Pirin Mountain serve to further reinforce the profile of Dr. Dundarova as a prominent researcher in the field of Asian and Bulgarian bat fauna. A total of 20 species of bats have been identified in the circus of Banski Sukhodol, representing over half of the Bulgarian bat fauna. The most effective method for determining the diversity of handwings in the alpine zone has also been established: the recording and analysis of ultrasonic signals. Additionally, a cave habitat at the highest altitude

in Europe, which supports the most significant number of bat species, has been the subject of study. This site is also a significant communication and breeding ground for forest bat species (papers B1 and D15).

Additionally, Dr. Dundarova researches cryptic bat species, a highly intriguing and challenging area of modern zoological inquiry. Multilocus phylogeography was conducted in the putative sympatric zone of *M. mystacinus* and *M. davidii*, which are the cryptic species of the *Myotis mystacinus* morpho-group. *M. mystacinus* and *M. davidii* evolved in allopatry and subsequently came into secondary contact during the range expansion of their distributions following the last glacial period. Based on mitochondrial and nuclear markers, an uneven population distribution was identified in areas of secondary contact (Paper C 6).

Dr. Dundarova's contributions also address several issues related to the study of viral ectoparasites (paper D 8), pathogens (papers D 4 and 5) and cell cultures derived from macrophages (paper D 2), kidney and liver cells and the nervus olfactorius of four bat species (paper D 9). In a novel contribution, the bats inhabiting the Bulgarian Black Sea area were also investigated (papers D 3 and 12).

The above illustrates the extensive and diverse scientific activities of Dr. Dundarova, which have garnered significant recognition within the scientific community. Her contributions have resulted in 43 citations of her scientific works, 38 of which are in Web of Science and Scopus, and five that are not referenced in the platforms above.

In conclusion, it can be stated that Dr. Heliana Dundarova is a young, well-established specialist in the field of zoology with a high level of research activity. Furthermore, she has demonstrated active scientific and organizational activity, as evidenced by her participation in numerous scientific projects. Her contributions are highly sought after and widely appreciated by the scientific community, as evidenced by the high number of citations of her scientific articles. In the light of the presented evidence, I give my categorical positive assessment and I am obliged to propose to the respected Scientific Jury and the members of the Scientific Council to unanimously elect Dr. Heliana Dundarova as "Associate Professor" in the scientific specialty of „Zoology“.

Sofia, 11.11. 2024 Assoc. Prof. Hristo Dimitrov, Ph.D