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STATEMENT

by Prof. Michaela Nikolova Nedyalkova, PhD, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences

on the materials submitted for the competition to fill the academic position of Associate Professor in the Community Ecology and Conservation Biology Section, Department of Ecosystem Research, Ecological Risk and Conservation Biology, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences

in field 4.3 Biological Sciences, with a specialisation in Ecology and Ecosystem Conservation, as announced in State Gazette No. 69 of 31 July 2026.

By Order No. 42 of 28 September 2026, issued by the Director of the Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences (IBER–BAS), I was appointed to the scientific jury for the competition for the academic position of Associate Professor in field 4.3 Biological Sciences, with a specialisation in Ecology and Ecosystem Conservation.

The application materials submitted by Chief Assistant Professor Emilia Vacheva, PhD, comply with the Regulations for the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria and with the regulations of BAS and IBER–BAS. They include all the required documents.

The candidate, Chief Assistant Professor Emilia Vacheva, PhD, submitted a total of 31 scientific publications in addition to those on which her doctoral dissertation was based. Based on the statement of compliance submitted by the candidate, all 31 publications have been accepted for review.

Dr Emilia Vacheva completed a master's degree in Vertebrate Zoology at Sofia University "St. Kliment Ohridski" in 2014. In 2018, she obtained her PhD at the National Museum of Natural History, Bulgarian Academy of Sciences, where she worked as a researcher until 2021. From 1 November 2021 to 30 June 2022, she worked as an Assistant Professor in the Community Ecology and Conservation Biology Section, Department of Ecosystem Research, Ecological Risk and Conservation Biology, IBER–BAS. She has held the position of Chief Assistant Professor in the same section since 1 July 2022.

The candidate submitted 31 publications for the assessment of her research activity. Under indicator "B", she submitted 10 publications, including three in Q2 journals, three in Q3 journals and four in journals with an SJR but no Impact Factor (IF). These publications account for 145 points against the statutory minimum of 100. Under indicator "Г", she submitted 21 publications, including three in Q1 journals, one in a Q2 journal, six in Q3 journals, two in Q4 journals and nine in journals with an SJR but no IF. These publications account for 299 points against the statutory minimum of 220. For both indicators, Dr Vacheva substantially exceeds the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria, as well as those of BAS and IBER–BAS. The candidate also documented 83 citations in journals with IF and SJR, totalling 166 points and exceeding the requirements for this indicator as well.

The scientific publications submitted by Dr Emilia Vacheva contain original contributions, some of which have direct applications in amphibian and reptile conservation. Based on the statement of contributions submitted by the candidate, I have grouped these contributions into five main areas.

The first area covers the ecology and biology of amphibians and reptiles. The dietary niches of five lizard species and the northern crested newt were characterised. Differences in diet between sexes and age groups were analysed, and the first records of saurophagy and keratophagy were documented for some of the species studied. Differences in temperature measurements were found both among and within lizard species, and new data were obtained on their choice of microhabitats. The studies also added to the available information on reproduction in the Balkan green lizard and seasonal population dynamics in the northern crested newt. Of particular interest are the observations of winter activity and feeding in the snake-eyed lizard and the first records in Bulgaria of nocturnal activity in the European green lizard under natural light conditions. Individual observations added to the available information on melanism and maximum body size in lizards and on pathological conditions in newts.

The second area concerns the distribution and conservation of amphibians and reptiles. The distribution of the two water snake species in Bulgaria was mapped, and the northern crested newt was found to be more widespread in northwestern Bulgaria than previously known. The distribution records for the invasive pond slider, *Trachemys scripta*, were updated, and the first national model of areas potentially suitable for the species was developed. Records of hatchlings suggest successful reproduction in the wild. The investigation of a newly recorded Alpine newt locality in the Ruy Mountains led to its designation as a protected area. In the "Kresna–Ilindentsi" protected site, the study identified the areas with the highest concentration of terrestrial reptile species for which the site was designated and highlighted road traffic as a threat to their populations.

The third area encompasses genetic and karyological studies of reptiles. Mitochondrial DNA analyses of the common wall lizard in Bulgaria and Romania clarified the distribution of the major haplogroups and revealed evidence of haplotype admixture in populations along the Danube River. The genetic data support the hypothesis of human-mediated introduction of the common wall lizard at one locality in Romania and of Erhard's wall lizard at an isolated locality near Varvara. Cytogenetic studies of representatives of *Anguis* and *Pseudopus* revealed a conserved karyotype of 44 chromosomes and species-specific chromosomal differences that could serve as diagnostic markers.

The fourth area covers chemical communication in snakes. Analysis of the skin secretions of 13 species identified both widely shared and potentially species-specific compounds. Behavioural experiments with the nose-horned viper showed that two ketones found in its skin secretions elicited courtship-related responses in males. The stronger response when the two compounds were presented together supports the hypothesis that they play a role in sexual communication in this species.

The fifth area concerns the gut microbiome and cloacal microflora of reptiles. The core gut microbiome was found to be species-specific in five syntopic lizard species. The cloacal microflora of lizards and turtles was characterised, and differences were found in the relative abundance of individual bacterial taxa among host species. The pathogenic potential of some bacterial isolates was also assessed on the basis of their susceptibility to antibiotics, ability to form biofilms and production of extracellular enzymes.

CONCLUSION

In conclusion, I highly value the work the candidate has done in this particularly interesting and topical area of research. Many of her findings contribute to the field, and some are of fundamental significance. On this basis, I consider Dr Emilia Vacheva an established specialist in her field and am convinced that she is fully prepared and merits appointment as Associate Professor.

The documents and materials submitted by Dr Emilia Vacheva meet all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria, its implementing regulations and the regulations of BAS and IBER–BAS.

The candidate has submitted a sufficient number of scientific publications that appeared after the works used in defence of her doctoral degree. Her work contains original scientific and applied contributions that have received international recognition, as evidenced by the citations documented in the application. All submitted papers were published in peer-reviewed and indexed scientific journals with an IF and/or SJR. Taken together, these achievements attest to Dr Emilia Vacheva's scientific qualifications.

Having reviewed the materials and scientific publications submitted for the competition and assessed their significance and their contributions to basic and applied research, I give the candidate a positive assessment. I recommend that the Scientific Jury propose to the Scientific Council of IBER–BAS that Dr Emilia Vacheva be elected to the academic position of Associate Professor in field 4.3 Biological Sciences, with a specialisation in Ecology and Ecosystem Conservation.

21 November 2026

Statement prepared by .....

(*signature*)

Prof. Michaela Nedyalkova, PhD