

To: Prof. Dr. B. Georgiev, D.Sc.  
Chairman of the Scientific Council  
IBEI, BAS

## OPINION

of. Prof. Dr. P. Mihailova, D.Sc. from IBEI, BAS

**Regarding:** Awarding the academic position "Associate Professor" to Ch. assistant Dr. Boyko Neov, professional direction 4.3 "Biological sciences", scientific field "Genetics" for the needs of the research group "Molecular-evolutionary studies", section "Biodiversity and ecology of parasites" at the department "Animal diversity and resources" of IBEI, BAS.

Dr. Boyko Neov is the only candidate in the competition for "Associate Professor" in the scientific specialty "Genetics" for the needs of the research group "Molecular-evolutionary studies", section "Biodiversity and ecology of parasites" at the department "Animal diversity and resources" of IBEI, BAS. In 2008, the candidate graduated with a Bachelor's degree in molecular biology at the Faculty of Biology of the "Saint Kliment University of Ohrid". In the period 2008 – 2010, he was a Master in Animal and Human Physiology in the same faculty at Sofia University. During the period 2008-2012, he worked as a biologist at the Institute of Biophysics and Biomedical Engineering, BAS. In 2021, he is a PHD student in the field of "Parasitology and Helminthology" at IBEI, BAS. Here he successfully defended a PhD on the topic "Evolutionary processes in the formation of the diversity of hymenolepidid cestodes on insectivorous mammals from the family Soricidae" and received the educational and scientific degree "Doctor" in the scientific specialty "Parasitology and Helminthology". From 2021 until now, he is a Ch. assistant at IBEI, "Molecular-evolutionary studies" laboratory, where, using molecular-genetic methods, he successfully developed a number of taxonomic and evolutionary problems in various pathogenic organisms, as well as in animals of important economic importance.

The candidate's works in IBEI 8 years, 9 months and 29 days.

Dr. B. Neov's research is mainly on the genetics and evolution of various invertebrates and vertebrates. In this field, the candidate conducts in-depth studies on the taxonomy, phylogeny

and determination of parasites and pathogenic organisms. Genetic markers of taxonomic value were found in trematode species /paper No. 3/. Application genetic approaches allow the candidate to demonstrate paraphyletic relationships between families he studies. Using molecular genetic methods, the candidate has studied various pathogens of domestic bees /papers: No. 4, 5, 6, 7/. Here, the originality of research in tracing the distribution and systematics of bee pathogens should be noted. The origin, evolution, and geographic distribution of bat lyssaviruses were also investigated, and a relationship between these viruses and the phylogeny of Palaearctic bat species was established. The applicant's research and scientific results on the origin and evolution of domestic animals and their wild relatives are of great importance for the conservation and preservation of their biological diversity. The establishment of genotypic diversity in Bulgarian cattle breeds and their distribution in the country has a significant value /paper: No. 9, 10, 11, 12/.

The candidate also traces the genetic diversity of ancient dogs /paper No. 14/, expresses an interesting idea about the presence of hybridization between the dog and the wolf. Dr. Neov also studies populations of the Eastern Balkan pig /paper No 5/. He finds that a large part of this pig belongs to the Asian clade, and a very small part belongs to the European clade. The candidate's research on other domestic animals is also of interest: modern and ancient horses /papers: No. 18, 22, 24, 25/. His researches on sheep /paper No. 23/ and Bisons /paper No. 21/ have also contributed. An important direction in the candidate's research activity is studying the state of bee populations in our country, their genetic structure and reasons for the increase in mortality in their populations /paper No. 27/.

Dr. Neov studies in detail the bacterial communities associated with bees /paper No 26/. Studying different regions in Bulgaria, he came to the conclusion that the bacterial communities are richer in the flat regions of the country. His results of molecular-genetic research in bees are well presented in a separate chapter of a book /paper No. 27/. The study of the honey bee has an important economic significance, which in turn determines the practical and social significance of the applicant's activity. A significant part in the candidate's scientific activity is occupied by studies on the causes of bee mortality, indicating a number of biotic and abiotic factors /papers: No. 13, 16, 17, 19, 20/.

The candidate presents 28 scientific works, of which 2 are related to obtaining the educational and scientific degree, "Doctor". One is out of the contest. There are 25 left, including a book chapter. Twenty of the scientific articles are in journals with an Impact factor, such as: Veterinary Sciences, Systematic Parasitology, Animal Genetic, Diversity, etc. The scientific

research activity of the candidate finds a wide response among the scientific community: 277 citations are reported.

The candidate also has significant scientific and organizational activity, expressed in participation in 5 national and 1 international projects. Detailed reference for conformity of the points of Ch. assistant, Dr. Boyko Neov, with the minimum scientist requirements of the BAS and the national criteria for the competition for the academic position of "Associate Professor" in professional direction 4.3. Biological Sciences shows a total number of points of 530 on indicators A, B, C, D. All of the above indicates that the candidate not only meets the requirements for obtaining the academic position "Associate Professor", but also exceeds them.

In the submitted documents, there is no information about the candidate's participation in national and international forums.

I recommend the candidate to train young specialists who, applying molecular genetic approaches, will develop taxonomic and evolutionary problems with pathogenic organisms important for our country and economically significant animal species.

**Conclusion:** Dr. Boyko Neov is a well-built young specialist, knowledgeable of modern molecular-genetic approaches, which he successfully applies in studying the taxonomy, origin and phylogeny of a number of invertebrates and vertebrates, with economic importance. Most of the scientific papers have been published in specialized international journals. His scientific contributions have found wide international recognition, expressed in 277 citations. All of the above allows me to highly evaluate the scientific-research and scientific-organizational activity of the candidate and with full conviction to propose to the Scientific Jury of the competition and to the members of the National Assembly of IBEI to award Ch. assistant, Dr. Boyko Neov, the academic position "**Associate Professor**" in the scientific field "**Genetics**".

12.09.2024

Prof. Dr. P. Michailova, D.Sc.