

REVIEW

by assoc. prof. Nikolay Simov PhD, National Museum of Natural History, Bulgarian Academy of Sciences, as a member of the scientific jury, appointed by Order RD-38-123/06.03.2025 of the Rector of Sofia University "St. Kliment Ohridski"

Concerning: competition for the academic position "assoc. professor" in professional field 4.3. Biological sciences, scientific specialty " Zoology - Invertebrate Zoology - Entomology ", for the needs of the Biological Faculty, Sofia University St. Kliment Ohridski, announced in the State Gazette, issue 5/17.01.2025r.

In the competition for the academic position "assoc. professor" in professional field 4.3. Biological sciences, scientific specialty " Zoology - Invertebrate Zoology - Entomology ", for the needs of the Biological Faculty, Sofia University St. Kliment Ohridski, announced in the State Gazette, issue 5/17.01.2025r., only one candidate applied –Dr. Iliya Vladimirov Gjonov - employee at the same faculty.

The documents, references, publications and lists with citations and project participations included in the presented by the candidate, Dr. Gjonov, fulfill the legal requirements and regulations, and also the Regulations for the terms and conditions for acquisition of scientific degrees and for employment at academic positions in the Biological Faculty, Sofia University.

1. Professional career development of the applicant

I am fortunate to have known the candidate since our student years, when we studied together and later graduated as masters in the Zoology of Invertebrates - Entomology. It so happened that we both turned to one of the most diverse groups of insects - the Hemiptera. Dr. Gjonov chose to focus his research on a part of the order - the cicadas and subsequently the leaf fleas. After graduating from the Faculty of Biology of Sofia University in 2001, the candidate turned to private business and managed a small enterprise, managing up to 15 staff. The experience gained proved to be of great benefit in the future. Despite his serious employment, he did not stop doing science and his favorite group of insects. During this period, he managed to defend a dissertation (2016) at the Department of Zoology and Anthropology of the Bulgarian Faculty of Science, again dedicated to his favorite group of insects, the cicadas - on the topic: Species composition, biological features and distribution of species of Fulgoromorpha (Insecta: Hemiptera) in Bulgaria. After that, he invariably became part of the department, where he was successively a biologist and subsequently a chief assistant (from 2017) to the present.

2. Main areas of research of the applicant and his main scientific contributions

The main areas of the candidate's research work are related to the taxonomy, systematics, phylogeny, biological features, distribution and bioacoustics of representatives of Hemiptera, and in particular cicadas, tree and leaf hoppers, plant hoppers and psyllids.

Dr. Gjonov is the author of 42 scientific articles in journals, 1 chapter of a monograph and 3 popular science publications. Of these, 18 articles in journals with an impact factor Web of Science, 7 articles are indexed only in SCOPUS with the corresponding SJR, and 1 book chapters or collective monographs. Dr. Gjonov is participating in the current competition for “associate professor” with 23 publications. Of these, 16 are in journals with impact factor, 6 in journals with only SJR, 1 chapter of a book.

The scientific papers submitted for the competition are original in nature and the more important scientific contributions in them are divided by the candidate into two main groups according to the minimum national requirements (group B and group D): 1) contributions to the habilitation work (in this case - articles equivalent to a habilitation work); 2) contributions outside the so-called habilitation work.

Formally, I accept the candidate's report on the contributions of his research, but I believe that due to the approach he has chosen, it is a little bit difficult for the reader to orientate himself. In my opinion, a more appropriate approach to presenting the scientific contributions would be their unification.

The scientific publications presented in the competition are original studies, and the more important scientific contributions in them can be divided into several main directions:

Contributions in taxonomy: a new species from Bulgaria is described with diagnosis and key to the European species of this genus - *Balcanocerus agapetomyrmices* Gjonov, 2024 (Hemiptera: Cicadellidae: Eurymelinae) (V4); the first fossil record of a cicada from Satovcha (Western Rhodopes) from the Middle Miocene is described (V1); a phylogenetic scheme of the family Aphalaridae (Psylloidea) is proposed based on COI and Cytb (V4; G4); The candidate described also a new species from the genus *Tshurtshurnella* (Hemiptera: Fulgoroidea: Issidae) as a part of his PhD thesis.

The candidate's contribution to the attempt to understand the modern systematics and construct a phylogeny of leaf fleas of the family Aphalaridae in Bulgaria and the Balkan Peninsula is undoubted. Within the framework of this study, in addition to the nomenclatural contribution with the establishment of a new synonymy, the suitability of various characters for distinguishing closely related species is also proven. (V4; G4).

Faunistic contributions– a significant number of taxa new to the fauna of Bulgaria have been recorded, including alien and introduced species; Molecular approach based study of the Bulgarian species of the family Aphalaridae (Psylloidea), 80 COI and Cytb sequences for 25 species, mainly from Bulgaria, are presented, and for 15 of the species these are the first DNA barcodes. New primers have been developed for cases where standard DNA primers are

assessed as inapplicable, which can be used in future studies. It has been established that Cytb has a higher interspecific divergence compared to COI, and allows for more accurate identification of the species of this group. By sequencing 16S rRNA, the endosymbiont prokaryotes of species of the genus *Diaphorina* (Psyllidae), close to *D. citri*, have been studied; Bulgarian species of singing cicadas have been mapped, and for each species a distribution map in the country is presented, and annotated check list are made with as well as an analysis of the altitudinal and spatial distribution (G2, G6, G8, G9, G12, G 11, G15, V3, V2, G7). The candidate is a very good collector and his broad knowledge help the attention of his faunal contributions not only to the cicadas and leaf fleas, but also to beetles (G13, G14) and to a group of stem hymenopterans, parasites on cicadas and hoppers Dryinidae (V5).

Studies of the biology and ecology of different Hemiptera:

For many taxa, food plants are registered for the first time or new plants are added as part of their host specialization (G6, G7, G12). Studies have been conducted related not only to their food specialization, but also to the analysis of their altitudinal and spatial distribution. The candidate's contribution to the study of trophobiotic relationships between different species of cicadas and ants and their behavioral reactions is very important (V4, G5, V8). As xenobionts associated with fulgoromorphs, in addition to ants and other hymenoptera, moths, cockroaches and even snails and small geckos have been registered.

Contributions in the bioacoustic: The applicant's work in bioacoustic significantly contribute to world science. For the first time, together with his fellow graduates, the candidate explores not only sounds, but also the morphofunctional side of their production, as well as specific behavioral reactions related to vibrational communication in different groups of hemipterans: plant hoppers, psyllids, assassin bugs (V6, V3).

Dissemination of the results from the scientific studies and open science: A dataset containing the primary data for all specimens of the superfamily Cercopoidea in the Zoological Collection of Sofia University (BFUS) has been published in GBIF – 8722 specimens, grouped into 6670 collection objects (<https://www.gbif.org/dataset/870ac935-39e4-4567-99c2-5e2dc29f0e11>) (публикация B5).

3. Significance of the conducted research (citations, publications in prestigious journals, awards, membership)

According to the documents submitted, the scientific works of Dr. Gjonov have been cited 185 times. For the competition, the applicant has submitted 40 citations, of which 37 are in indexed Web of Science/ Scopus. The ratio of cited in Web of Science and Scopus / non-referenced publications in the extended list submitted by the candidate is similar to above mentioned. It is indicative of the significance of the results obtained. Of the scientific works in the competition in Q1 there are 3 publications (13%), in Q2 there are 9 (39%), in Q3 there are 6 (26%), and in Q4 there are 4 (17%), as well as one is a chapter of a monograph. Dr. Gjonov is a member of Editorial boards of Biodiversity Journal, ZooKeys, Check List и Biodiversity Data Journal. He is a member of Arbeitskreis Zikaden Mitteleuropa and

International Auchenorrhyncha Society. He is a research associate at the National Museum of Natural History, Sofia.

The candidate has been awarded many times for best performance at scientific forums, as well as for well-completed and reported projects.

4. Most significant applied science contributions

Dr. Gjonov's contributions are primarily of a fundamental, but some of them could be undoubtedly defined applied science contributions. This undoubtedly includes his contributions to improving the technique and methodology for recording insects for bioacoustic studies (unfortunately, the publication is not included in the documents submitted, due to its very recent publication). Last but not least, there is a purely methodological contribution related to improving the work on creating, managing and preserving entomological collections (articles G1 and G10). His abilities to create, manage, program and maintain databases are enormous and his participation is mainly in the implementation of the extremely important for the Bulgarian science project for the digitalization of scientific collections (DiSSCoBG).

One of these databases is the one created by the author of macrophotographs of living specimens. This database is the basis of a number of analyses that have led to the publication of articles with new discoveries related to the biology of cicadas, such as the trophobiont relationships of fulgoromorphs (Hemiptera, Fulgoromorpha) with ants (publication G5), the emergence of invasive species (publication G6) or these are the world's first macrophotographs of rare taxa, presenting their habit or morphological features (publication G9p publication G11).

6. Demonstrated skills and abilities for leading scientific projects

Dr. Gjonov is the team leader of 2 national scientific projects, funded by the The Bulgarian National Science Fund (BNSF) and 3 university projects at Sofia University. He has participated in a total of 30 scientific and applied projects, participation in 2 international projects, 17 national projects or government contracts, 6 university projects.

The applicant has participated in the organizing committees of a number of prestigious scientific forums as: Sixth European Hemiptera Congress, Bulgaria 2012; 18th European Lepidoptera Congress, Bulgaria 2015; Vth International Congress of Taxonomy, Speciation and Euro-Mediterranean Biodiversity, Bulgaria 2019; 9th European Hemiptera Congress, Czech Republic 2022.

Evidence of his ability to lead scientific research is also the successful graduations of his students (Masters and Bachelors), as well as his role as senior or corresponding author of 14 scientific publications of the 23 submitted by the applicant for the competition.

7. Role of the applicant for the training and teaching of young scientists and researchers

Dr. Gjonov has extensive experience in teaching students. As a PhD student and later a senior assistant professor at the Department of Zoology and anthropology at the Faculty of Biology, he has led:

Lectures: “Zoology of Invertebrates” and “Biological Invasions” for the Bachelor’s program Biomangement and Sustainable Development; “Methods of Entomological Research” for the Master’s program Entomology;

Exercises: “Zoology of Invertebrates” and “Entomology” in various Bachelor’s degree programs; “Biological Invasions” for the Bachelor’s program Biomangement and Sustainable Development; “Methods of Entomological Research” and “Large Practicum in Entomology in the Master’s Program in Entomology, as well as teaching and teaching-research practices: “Zoology of Invertebrates” in various Bachelor’s degree programs; “Entomology” in the Master’s Program in Entomology. Last but not least, the successful supervision of 8 Bachelor’s and Master’s degree graduates is noteworthy. Some of his graduates are currently also PhD students, and I cannot fail to mention that one of them is about to defend perhaps the best PhD thesis in entomology in recent years done in Bulgaria. The above-presented undoubted evidence of skills to lead and train young scientific personnel is complemented by the inclusion of many young people in the scientific projects that the candidate leads, as well as by the undoubted support as a mentor of the Student Entomology Club.

7. Assessment of the personal contribution and profile of the applicant

Dr. I. Gjonov has a clearly outlined profile of scientific research work in the field of entomology. His contributions enrich and expand not only Bulgarian, but also world science with new discoveries and facts about the taxonomy, biology, morphology, bioacoustics of several groups of hemipterans. The candidate is an extremely erudite and good specialist, capable of conducting in-depth entomological research, as well as teaching, which fully corresponds to the scientific specialty for which the competition has been announced..

8. Critical remarks and recommendations, after reviewing the submitted documents: part of the publications (B1, B2, B3, Г2, Г6, Г8) are in scientific journals, indexed only in SCOPUS and only with SJR. Unfortunately, the Regulations for the Implementation of the Act on development of the academic staff in the Republic of Bulgaria include a text that is clearly discriminatory and lobbies for the interests of a certain commercial organization. According this text in the Regulations the above cited 6 publications fall into the group “in edition with SJR without IF”, which are scored () with only 10 points. After a reduction in the number of points for the fulfillment of the Minimum National Requirements for professional field 4.3. Biological Sciences is required, and instead of 145, the points for Group B are 130, and for Group D - 243 (instead of 263), but even with this number, the candidate’s scientific production covers and exceeds the Minimum National Requirements.

One of the citations in the list (indexed in Web of Science/Scopus) is in a monograph (D2). It is not clear – is the monograph indexed? Citations D7 and D 13 are in the non-indexed journal

- *Bulletin de la Société entomologique de France*. The reference of the citation D31 in the list is a preprint in bioRxiv, but the real publication is in the leading journal *Systematics entomology*. D4 as a hidden auto-citation. Thus, the citations in articles published in Web of Science and Scopus are 37, which provide him with a sufficient number of points.

That doesn't change the compliance with the requirements for acquiring the academic position. The rest of the remarks are of a formal origin, such as the noninclusion for this competition of all the candidate's publications and have no place in this opinion.

CONCLUSIONS

As a member of the Scientific Jury (established according Order RDPД-38-123/06.03.2025 of the Rector of the Sofia University), I confidently state that the candidate Dr. Iliya Vladimirov Gjonov, participating in the competition for the academic position of associate professor in professional direction 4.3 Biological sciences, scientific specialty ENTOMOLOGY, for the needs of the Biological Faculty, Sofia University St. Kliment Ohridski, announced in the State Gazette, issue 5/17.01.2025r, meets the mandatory and specific requirements and criteria for occupying the academic position "associate professor"

The presented results and contributions from Dr. Gjonov's research, organizational and teaching activities show his professionalism, creativity and competence in the scientific work. He has a fresh mind and his drive for research is inspired by his great curiosity; this, combined with the use of modern methodology, places him in the group of scientists in Bulgaria working at a very high level. Dr. Gjonov is a responsive colleague and a good person who is not afraid to share knowledge and ideas and help everyone in the team they work with. He is a good team player and his creativity and academic approach are important part of the successful work. This, without doubt, would be confirmed by each of the participants in any joint projects in which Dr. Gjonov participated, his students and graduates as well as each of the organizing committee of international and national scientific forums who worked together with the candidate. All of the above mentioned gives me the reason to recommend to the Scientific Jury to support the candidacy of Dr. Iliya Vladimirov Gjonov for the academic position of ASSOCIATE PROFESSOR in Entomology for the needs of the the Biological Faculty, Sofia University St. Kliment Ohridski,

02 of May 2025 г.

Подпис:

(assoc. prof. Nikolay Simov, PhD)