

OPINION

By Prof. Dr. Plamen Genkov Mitov,

**Department of Zoology and Anthropology, Faculty of Biology, Sofia University "St. Kliment Ohridski",
member of the Scientific Jury, appointed by Order No. RD 38-123 of 06.03.2025 of the Rector of Sofia
University "St. Kliment Ohridski"**

REGARDING: competition for the academic position of "Associate Professor" in Professional Field 4.3. Biological Sciences (Zoology of Invertebrates - Entomology), announced in the State Gazette No. 5 of 17.01.2025 for the needs of the Department of "Zoology and Anthropology" at the Faculty of Biology of Sofia University "St. Kliment Ohridski".

This opinion has been prepared on the basis of a decision of the Scientific Jury, adopted at its first meeting, held on 20.03.2025.

The announced competition for the academic position of "associate professor" in the professional field 4.3 Biological Sciences (Zoology of invertebrates - entomology) was attended by a single candidate, Senior Assistant Dr. Iliya Vladimirov Gyonov. The documents submitted for the competition by Senior Assistant Dr. Gyonov in terms of volume, content and quality meet the requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria (LDASRB), the Regulations for its implementation and the Regulations for the terms and procedure for acquiring scientific degrees and occupying academic positions at Sofia University "St. Kliment Ohridski". Therefore, the Scientific Jury admitted Senior Assistant Dr. Iliya Gyonov to the evaluation procedure.

Note: I have no joint publications submitted for participation in the competition with the candidate.

Brief biographical data of the candidate

Iliya Gyonov was born in 1976. In the period 1995–2002 he studied at the Faculty of Biology of Sofia University, where he graduated as a master in Biology and Chemistry with the professional qualification "Biology Teacher with a second specialty as a Chemistry Teacher". Later (2013–2016) he continued his studies at the Department of Zoology and Anthropology of the Faculty of Biology of Sofia University as a doctoral student, with the scientific supervisor Prof. Dr. Maria Shishinyova. The topic of his dissertation is "Species composition, biological features and distribution of Fulgoromorpha (Insecta: Hemiptera) species in Bulgaria". In 2016, Iliya Gyonov obtained the scientific and educational degree "doctor". In 2016 he was appointed as a biologist in the Department of Zoology and Anthropology. His academic career began in 2017. as a senior assistant professor in Invertebrate Zoology in the same department. It is quite natural that senior assistant professor Dr. Iliya Gyonov would like to continue his career development in the department where he has studied and worked for nearly 12 years, most of which have been in an academic position. Moreover, the thematic focus of his research and teaching work is entirely in the field of Invertebrate Zoology (Entomology). In this regard, the career growth and professional qualifications of the candidate fully correspond to the topic of the announced competition for associate professor in the Department of "Zoology and Anthropology".

Assessment of the candidate's activity

Teaching and teaching activities

The teaching activity of Senior Assistant Professor Dr. Iliya Gyonov is related to the delivery of lecture courses and practical classes in mandatory disciplines in both levels of study at the Faculty of Biology. He lectures on "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", as well as exercises in "Zoology of Invertebrates" and "Entomology" (in various bachelor's degree programs); exercises in "Biological Invasions" (for the bachelor's program "Biomangement and Sustainable Development"; exercises in "Methods of Entomological Research" and "Large Practicum in Entomology" (in the master's program "Entomology"); Conducts teaching and teaching-research practices in "Zoology of Invertebrates" in various bachelor's degree programs and "Entomology" in the master's program "Entomology". For the last five academic years (2023–2024, he used a sabbatical) his total academic workload is an average of 467.1 hours (auditory 258.82) exceeding that required at Sofia University. Chief Assistant Professor Dr.

Iliya Gyonov has been the scientific supervisor of 8 diploma theses in the bachelor's and master's degrees. He is the creator and mentor of the Student Entomology Club of Sofia University.

Based on the above, I highly appreciate the teaching and learning activities of Senior Assistant Professor Dr. Iliya Gyonov, I believe that it is of sufficient scope and covers important areas in the field of the announced competition and proves his commitment to the training of young professionals.

Scientific research activity

The main research profile of Dr. Iliya Gyonov is in the field of studying the class Insecta (Hemiptera, Hymenoptera, Coleoptera). This research is expressed in a high publication activity and the development of scientific research projects. Dr. Iliya Gyonov has a total of **45** scientific articles in journals, 1 chapter of a monograph and 3 popular science publications. Of the scientific publications - 20 are in journals with impact factor and SJR, 8 in journals with only SJR, 1 chapter of a book and 17 in journals not referenced in SCOPUS and Web of Science. All of them are in the field of taxonomy, chorology, biodiversity, morphology, biology, behavior, ecology of insects, mainly of the infraorder Cicadomorpha (Hemiptera, Auchenorrhyncha).

To participate in this competition for associate professor, the candidate has submitted **23** scientific papers, four of which are independent, and the remaining 19 are co-authored and are on the topic of this competition. The scientific papers submitted for the competition have been published in specialized and renowned international scientific journals, refereed and indexed in WoS/SCOPUS, such as *Acta Zoologica Bulgarica*, *Acta Entomologica Musei Nationalis Pragae*, *Biodiversity Data Journal*, *Check List*, *Diversity*, *Ecologica Montenegrina*, *Historia naturalis bulgarica*, *Fresenius Environmental Bulletin*, *Insects*, *Journal of the Entomological Research Society*, *North-Western Journal of Zoology*, *Microbial Ecology*, *Nota Lepidopterologica*, *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"*.

The distribution of the candidate's articles by journals with quartiles is as follows: with **Q1** – 3 articles, with **Q2** – 9 articles, with **Q3** – 7 articles, with **Q4** – 4 articles. By indicators: **B4** includes **8** articles, forming 130 points – with **Q2** – **5** articles, with **Q3** – **3** articles; **G7** includes a total of 15 articles, forming 243 points – with **Q1** – 3 articles, with **Q2** – 4 articles, with **Q3** – 4 articles, with **Q4** – 4 articles. The total **IF** of the scientific publications is **19.264**, and **SJR = 8.842**. In five of the scientific papers submitted for the competition, Dr. Gyonov is the first co-author, in 7 he is the second, in 5 he is the third, in one he is the fourth and seventh co-author, respectively. These data demonstrate Dr. Iliya Gyonov's ability to fruitfully collaborate with a number of Bulgarian and foreign colleagues, specialists in the field of his research, and to work in a team - in modern science, collaboration is already a natural phenomenon and is highly valued everywhere in the world, especially when developing environmental topics and collecting data for large-scale projects, where implementation even by a small team of researchers is difficult.

The certificate of fulfillment of the minimum national requirements by the candidate under Art. 2b of the ZRASRB for scientific field 4. Natural sciences, mathematics and informatics; professional field 4.3. Biological sciences shows a set of points that cover and in most cases exceed the required minimum number of points for the criteria. The fulfillment of the minimum national requirements for indicators for holding the position of "Associate Professor" is as follows: The indicator from group "A" is covered with **50** points; No points are required for this position for the indicator from group "B"; The indicators from group "B" are covered with **130** points (with 100 required); The indicators from group "Г" are covered with **243** points (with 200 required). The indicators from group "Д" are covered with **72** points (with 50 required).

However, in the presented scoring by the candidate for 3 publications with Q3 (B1, B2, B3) in indicator "B4" and for 1 publication with Q2 (Г2) and 2 publications with Q3 (Г6, Г8) in indicator "Г7", the requirement to give 10 points for publications in an edition with SJR without IF, as they actually are, has not been met. In indicator "Д11", four citations (Д2, Д7, Д13, Д31) do not meet the requirement that they be in scientific publications, monographs, collective volumes and patents, referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus). Therefore, the points in the report submitted by the candidate, under indicator "B4" - from **145** are reduced to **130** (with 100 points required); the points under indicators "Г" - from **263** are reduced to **243** (with 200 points required). The indicators from group "Д" are covered by **72** (not **80** points, as indicated by the candidate) (with 50 points required). **This shows that despite the reduction, the candidate fully meets and even exceeds the requirements of the LDASRB.**

Proof of the significance of Dr. Iliya Gyonov's published research is their citation. The total number of noted citations of all publications in refereed and indexed in world-renowned databases of scientific information (Web of Science and Scopus) by Dr. Iliya Gyonov (excluding self-citations) is **185**, of which 89 in journals indexed in Scopus and Web of Science. A sample of **40** citations of 40 articles for the period (2013–2023) was submitted for the competition.

Dr. Iliya Gyonov's scientific research is current and has significant scientific and applied value. The studies used modern, diverse and appropriate standard and specific field methods. The review of the submitted scientific works gives me reason to assume that the candidate's personal contribution to the research and its analysis is beyond doubt.

I accept the report submitted by Dr. Iliya Gyonov on the contributions of his scientific publications, which are of a fundamental and applied nature and which determine his scientific profile. Among the more significant scientific and applied contributions, according to the main scientific areas in which the candidate works, I would point out the following:

1. Taxonomic and morphological studies. – publications B1, B4, Г4

Which include the description of a new species for science – *Balcanocerus agapetomyrmices* Gjonov, 2024 (Hemiptera: Cicadellidae: Eurymelinae) based on materials collected from Strandzha, Bulgaria. It is accompanied by a diagnosis of the species and a key to the European representatives of the genus *Balcanocerus*. A fossil find (from the Middle Miocene) of the genus *Aphrophora* Germar, 1821 from Bulgaria (Western Rhodopes, Satovcha) is described for the first time, which also represents the first recorded evidence of a fossil of Auchenorrhyncha in Bulgaria. An attempt was made to construct phylogenetic trees of the family Aphalaridae (Hemiptera, Psylloidea) based on studies of two genetic sequences – cytochrome c oxidase I (COI) and cytochrome b.

2. Faunistic research. – publications B2, B5-7, Г2-4, Г6, Г8, Г12-15

Faunistic studies include new data on the distribution of cicadamorphs and their associated specialized parasitoids of the Dryinidae family (Hymenoptera, Chrysidoidea). A total of 17 new taxa have been identified for the fauna of Bulgaria – 4 genera and 12 species. The introduced species of cicada of Asian origin – *Orientalis ishidae* – has been identified for the first time. As a result of a long-term study of the specialized cicada parasitoids of the Dryinidae family in Bulgaria, 2 genera – *Echthrodelpfax* and *Neodryinus* as well as 7 species of dryinidae have been identified for the first time. A taxonomic list of the representatives of Dryinidae known from Bulgaria has been prepared, containing 32 species. As a result of the author's many years of research, all 17 species from 2 families of leafhoppers (superfamily Cercopoidea) and 16 species of singing cicadas (family Cicadidae) have been mapped. For the first time, 2 species of leafhoppers (Hemiptera, Cicadomorpha, Cicadellidae) have been identified for Bulgaria – *Opsius cypriacus* and *Thamnotettix creticus*, as well as 62 new cicadas for the Eastern Rhodope region. The species *Duilius bipunctatus* (Hemiptera: Auchenorrhyncha: Cixiidae) and *Agonoscena cisti* (Psylloidea, Aphalaridae) have been identified for the first time in Malta. 9 species of leaf fleas (Hemiptera, Psylloidea) have been identified for the first time in our country, and the species *Craspedolepta conspersa* has been identified for the first time in the Czech Republic. The invasive North American species *Acanalonia conica* has been identified for the first time in Bulgaria and Turkey. The invasive Asian species *Ricania shantungensis* (Hemiptera, Fulgoromorpha, Ricaniidae) has been identified for the first time in the Western Palearctic for Turkey. 15 species of fulgoromorphs (Hemiptera, Fulgoromorpha) have also been identified for the first time in Bulgaria. A number of studies of coleoptera in Bulgaria and Turkey have also been conducted. The first specific localities of 5 species and 1 subspecies in Turkey have been given, as well as data on the distribution of 6 species of the subfamily Pselaphinae (Coleoptera: Staphylinidae). 6 species and 7 subspecies of beetles (Coleoptera, Cerambycidae) have been identified, new to the Bulgarian part of Strandzha and 11 species and 11 subspecies, new to the Turkish part of the mountain, and 6 of the identified taxa are new to the European part of Turkey.

3. Research in biology and ecology. – publications B2-8, Г2, Г5-7, Г12

An additional food plant (*Celtis australis*) of the polyphagous cicada *Orientalis ishidae* has been identified. Clarifying the full food spectrum of this invasive introduced species is important for possible plant protection measures. A calamity of a singing cicada species and the damage it caused to various tree species from the field protection forest belts in Dobrudzha have been identified. Mass oviposition on the shoots of several tree species, mainly ash trees, has been

documented. For the described new species *Balcanocerus agapetomyrmices*, the food plant *Pyrus amygdaliformis* has been identified and a review of the food plants of all species of the genus *Balcanocerus* has been made. The trophobiont relationships of the new species with ants have been described, and observations have been made on the behavior of cicadas and ants. The trophobiont relationships between cicadas (Hemiptera: Cicadellidae) and ants have also been established. A proposal for a classification of the behavioral responses of trophobiont cicadas has been made. The phenology and altitudinal distribution of species from the superfamily Cercopoidea and all known species of singing cicadas from the fauna of Bulgaria have been studied. A new food plant (*Asphodeline lutea*) has been identified for the previously considered monophagous aphrophid *Philaenus signatus*. Two species of cicadas have been identified as hosts of the parasitoids *Gonatopus formicarius* and *G. horvathi* (Hymenoptera, Chrysidoidea, Dryinidae). A nymph of the tribe Duillini developing in the soil has been found for the first time. The mutually beneficial relationships in trophobiosis between fulgoromorphs (Hemiptera, Fulgoromorpha), which provide food to the partner (xenobiont), have been examined in detail. As xenobionts associated with fulgoromorphs, in addition to ants and other hymenoptera, moths, cockroaches and even snails and small geckos have been registered. 6 species of food plants have been identified for the newly established in Bulgaria introduced species *Acanalonia conica* (Hemiptera, Acanaloniidae); 2 new food plants have been identified for the newly established in Turkey species *Ricania shantungensis* (Hemiptera: Fulgoromorpha: Ricaniidae). The food specialization of the invasive species *Pochazia shantungensis* (Hemiptera: Ricaniidae) has also been studied in Istanbul, where 57 species of food plants are established, the main ones being *Ligustrum lucidum* and *Olea europaea*. An assessment of the risk of the rapid spread of this invasive species in the Western Palearctic has been made. In addition to the food spectrum, this study also contributes to the clarification of the phenology of the species. The eggs are found to be laid in double rows on the thin annual branches of shrubs or trees, especially in the main vein on the lower surface of *Magnolia grandiflora*, with the overwintering stage being the egg. *Zelus renardii* (Hemiptera: Reduviidae) has also been identified as a predator of this species.

4. Bioacoustic research. – publications B3, B6

As a result of the acoustic method for identifying singing cicadas, the oscillograms of all 16 species of singing cicadas are presented, with the acoustic signal of each of them described in detail.

5. Data published in GBIF (Global Biodiversity Information Facility). – publications B5, Г9

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/870ac935-39e44567-99c2-5e2dc29f0e11>). A dataset of 151 records containing the metadata of all collection materials from the infraorder Fulgoromorpha treated in the publication has been published together with article G9 (<https://www.gbif.org/dataset/0a1ec5f1-7abb-4efa-9353-5ca4cdd23126>).

6. Macrophotographs of living specimens. – publications B2, B4, B5, B7, B8, Г5, Г6, Г9, Г11

For most of the newly identified species of cicadas in Bulgaria, original macrophotographs are presented in the relevant studies. The first macrophotographs of the nymphs and adults of a number of cicada species and their trophobiont relationships with ants are presented. Macrophotographs are presented for a large part of the newly identified species of fulgoromorphs (Hemiptera, Fulgoromorpha) in Bulgaria, as well as their trophobiont relationships. 17 original macrophotographs of live leaf fleas of the family Aphalaridae (Hemiptera, Psylloidea) are also published.

7. Molecular research. – publications Г4, Г11

Results of genetic studies of the Bulgarian species of the family Aphalaridae (Hemiptera, Psylloidea) have been published, presenting 80 sequences of two mitochondrial genes (COI and Cytb) for 25 species of Aphalaridae, mainly from Bulgaria, and for 15 species these are the first DNA barcodes. It has been established that the Cytb gene has a higher interspecific divergence compared to COI and allows for more accurate identification of the species. By sequencing 16S rRNA, the endosymbiont prokaryotes of species of the genus *Diaphorina* (Hemiptera, Psylloidea, Psyllidae), close to *D. citri*, have been studied. In *D. citri*, vertically transmitted intracellular symbionts – *Carsonella ruddii* and *Profftella armatura* – have been identified. Strains of *P. armatura* and *C. ruddii* have also been identified in

the other two studied *Diaphorina* species. In *D. cf. continua*, *Liberibacter* and *Diplorickettsia* have also been identified. Four different *Wolbachia* lineages were identified in all studied species. The molecular data for article G4 have been published in BOLD ("PSYBG": Process ID: PSYBG00123–PSYBG067-23, PSYBG096-24–PSYBG116-24) and GenBank (COI accession numbers: PQ109723PQ109782, Cytb accession numbers: PQ100051–PQ100069).

8. Methodological contributions. – publications Г1, Г10

An innovative model for 3D printing an entomological block for mounting cardboard for attaching insects and labels has been developed and published. A method for significantly more efficient cutting of labels for entomological collections has been created.

The candidate's expert, organizational and administrative activities can be judged by a number of his activities:

Senior Asst. Prof. Dr. Iliya Gyonov in the period 2001–2024 has participated in a total of 30 scientific and applied projects. He is the head of 2 national projects funded by the Scientific Research Fund (MES) and 3 intra-university projects at Sofia University. He has participated in 2 international projects, 17 national projects or state orders, and 6 intra-university projects. As a result of the active and successful work on the projects, two of them (headed by Iliya Gyonov) were awarded the "best reported project" for 2023 - "Morphological and molecular studies of insects of the family Aphalaridae (Hemiptera, Psylloidea) in Bulgaria" and for 2024. – "Diagnostic features for the alpha-taxonomy of insects of the family Aphalaridae (Hemiptera, Psylloidea)", funded by the Scientific Research Fund at the Sofia University.

Their number clearly shows that Dr. Gyonov conducts active research activities and is a sought-after partner in research teams with his knowledge in the field of Entomology. All this testifies to his active scientific, organizational and expert activities, and to his ability to work in a team.

In the period 2001–2024, Dr. Gyonov also took a very active part in a total of 49 scientific forums (34 international and 15 national scientific conferences and congresses) with 22 reports and 26 posters. Of these, two were awarded as "best poster" - one at the 8th European Hemiptera Congress, Poland 2018, and the second - at the Scientific Conference "Klementovy dni - 2022", Bulgaria 2022; In addition, 1st prize for "best report" was received at the International Seminar of Ecology, Bulgaria 2024.

The candidate's expert activity can also be judged by a number of his other activities: 1) Dr. Gyonov also actively participates in the development and completion of the largest taxonomic world database on Auchenorrhyncha (Insecta, Hemiptera), an insect group in which the candidate is a specialist; 2) participates in the editorial boards of: Biodiversity Journal – since 2014; ZooKeys – since 2022; Check List – since 2022; Biodiversity Data Journal – since 2022. He is a member of scientific organizations: He is a member of Arbeitskreis Zikaden Mitteleuropas e. V.; Member of the International Auchenorrhyncha Society; He is an associate fellow of the National Museum of Natural History – Bulgarian Academy of Sciences; 3) also participates in the organization of scientific forums as a member of: The Organizing Committee of the Sixth European Hemiptera Congress, Bulgaria 2013; The Organizing Committee of the 18th European Lepidoptera Congress, Bulgaria 2015; The Organizing Committee of the Vth International Congress of Taxonomy, Speciation and Euro-Mediterranean Biodiversity, Bulgaria 2019; The Organizing Committee of the 9th European Hemiptera Congress, Czechia 2022; 4) In connection with the so-called citizen science – a powerful tool that connects amateurs, scientists, nature and knowledge. Citizen science groups upload their observations and photos to designated platforms and help scientists find interesting and rare species and thus use their data, and amateurs gain knowledge and at the same time contribute to the preservation of our natural heritage. Dr. Iliya Gyonov is the creator of one such Facebook group – that of "Insects and Entomologists" – the largest group of amateur entomologists in Bulgaria, currently with over 45,000 members.

All these scientific achievements and expert activity give me reason to conclude that the scientific research activity and profile of the candidate correspond to the announced competition. The scientific contributions and achievements of Dr. Iliya Gyonov have already received assessment and recognition not only in our country, but also by the international biological community.

Critical remarks and recommendations

Critical remarks: I have no critical remarks regarding the candidate's scientific output in general. The candidate's publications are of high quality, have been published in specialized scientific journals and have been subject to peer review. I only have remarks regarding the inaccuracies made by the candidate in the submitted documentation, such as the incorrect scoring of indicators from groups "B", "Г" and "Д",

Recommendations: I would recommend that the candidate continue with active publishing, striving to further increase the visibility of his research by focusing on publishing in journals from the first and second quartiles of WoS/Scopus.

Personal impressions of the candidate for associate professor

I have known Iliya Gyonov almost since he joined the Department of Zoology and Anthropology as a doctoral student and as a participant in joint projects. For me, he is an active, motivated and well-established researcher with a clearly outlined scientific research profile in the field of Entomology. The main thing that characterizes him is the wide scope of his research activities and his active role as an expert, with authority and recognition both in our country and abroad, with active teaching activities, inspirer, organizer and driver of various scientific research, projects and activities related to involving students and the general public in the topic of biodiversity conservation in Bulgaria.

CONCLUSION

The documents and materials submitted by Dr. Iliya Gyonov meet all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for the Implementation of the ADSRB and the relevant Regulations on the Terms and Procedure for Acquiring Scientific Degrees and Holding Academic Positions at the Sofia University. In the competition for associate professor, Dr. Iliya Gyonov has provided sufficient evidentiary materials that show that he meets the requirements for holding the position of "associate professor". The candidate's profile fully corresponds to the thematic profile of the department for which the competition is announced. The candidate's scientific and applied scientific results show that he is an established scientist in his field and as an associate professor will be able to contribute to the successful development of the unit. My acquaintance with the materials and scientific works of Dr. Gyonov submitted for the competition, and my analysis of their significance and the scientific, scientific-applied and applied contributions contained therein, give me reason to convincingly vote "FOR" his candidacy and to recommend to the esteemed members of the Scientific Jury that a report-proposal be prepared for the Faculty Council of the Faculty of Biology for the election of Chief Assistant Dr. Iliya Gyonov for the academic position of "Associate Professor" at Sofia University "St. Kliment Ohridski" in: field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.3. Biological Sciences (Zoology of Invertebrates - Entomology).

28.04.2025
Sofia

Prepared the opinion:

(Prof. Dr. Plamen G. Mitov)