



REVIEW

regarding the competition for the academic position of "Associate Professor" in the field of higher education: 4. Natural Sciences, Mathematics and Informatics; professional field: 4.4. Earth Sciences; scientific specialty: Ecology and Ecosystem Conservation, announced in the State Gazette, issue No. 48 of 26 May 2026, with **Dimitrinka Binova Kuzmanova** as only candidate

by Assoc. Prof. **Ivelin Aldinov Mollov**, PhD, University of Plovdiv "Paisii Hilendarski", Faculty of Biology, Department of Ecology and Environmental Conservation, appointed as a member of the Scientific Jury pursuant to Order No. RD 16-770/22 June 2026 of the Rector of the Agricultural University – Plovdiv.

Reviewer: Assoc. Prof. Ivelin Aldinov Mollov, PhD, University of Plovdiv "Paisii Hilendarski", Faculty of Biology, Department of Ecology and Environmental Conservation; field of higher education: 4. Natural Sciences, Mathematics and Informatics; professional field: 4.3. Biological Sciences; scientific specialty: Ecology and Ecosystem Conservation.

Appointed as a member of the Scientific Jury pursuant to Order No. RD 16-770/22 June 2026 of the Rector of the Agricultural University – Plovdiv.

1. General information on the candidate's career and thematic development.

Dimitrinka Binova Kuzmanova is a Chief Assistant Professor at the Department of Chemistry, Phytopharmacy and Ecology and Environmental Conservation at the Agricultural University - Plovdiv, where she is engaged in teaching and research activities in the field of ecology. She obtained a Master's degree in Agronomy in 1993 from the Higher Institute of Agriculture "Vasil Kolarov" in Plovdiv (currently the Agricultural University - Plovdiv), and a PhD degree in the scientific specialty "Sheep and Goat Breeding", within the professional field of Animal Husbandry, in 2005 from the Agricultural University - Plovdiv. She also worked for five years as an expert at the Research Centre of the Agricultural University - Plovdiv. She has a good level of English and Russian languages.

2. General description of the submitted materials.

In the competition for the academic position of "Associate Professor", Dimitrinka Binova Kuzmanova participates with a total scholarly output of 34 publications, grouped as follows:

- ❖ *Scientific publications in the relevant scientific specialty - 34 in total, including:*
 - Publications related to the doctoral dissertation - 4, which are not subject to evaluation;
 - Publications with an impact factor - 6 (B1, G8, G9, G10, G13, G14);
 - Publications in peer-reviewed and indexed scientific journals - 19 (B2, B3, B4, B5, B6, B7, B8, B9, G1, G2, G3, G4, G5, G6, G7, G11, G12, G15, G19);
 - Publications in conference proceedings - 2 (G20, G21);
 - Publications in non-indexed scientific journals - 3 (G16, G17, G18).

Dimitrinka Binova Kuzmanova's individual contribution to the aforementioned 30 publications is illustrated by the fact that she is the sole author of one publication, the first author of five, the second author of three, and the third or subsequent author of the remaining 21 publications.

- ❖ *Textbooks – none.*
- ❖ *Teaching manuals – none.*

A total of 30 scientific publications are subject to analysis for the purposes of this review.

The following inaccuracies have been identified in the general list of scientific publications submitted by Dimitrinka Kuzmanova for participation in the competition:

1. In the section "Journals with an Impact Factor", publication G11 is listed; however, this publication does not have an impact factor, but only an impact ranking (SJR for 2019), which places it in Q3. This list should instead include publications B1, G8, G9, G10, G13, and G14, which had an impact factor in the respective years.

2. I consider publications G20 and G21 to be "Publications in Conference Proceedings" rather than articles in a journal with an impact factor. "Book of Abstracts of Scientific Papers. Series D. Animal Science", ISSN 2457-3221, does not have an established Q1-Q4 quartile ranking in either JCR or SJR. The publication with ISSN 2457-3221 is registered as a separate edition entitled "Book Abstracts. Section 3 Animal Science (International Conference 'Agriculture for Life, Life for Agriculture')", i.e., a book of abstracts published for the conference "Agriculture for Life, Life for Agriculture", and not the journal "Scientific Papers. Series D. Animal Science", ISSN 2285-5750, which has an impact factor. These are two distinct bibliographic entities. The supporting materials provided by the candidate demonstrate precisely the submission of article abstracts to the conference proceedings, rather than to the journal with an impact factor. They are also listed in the references as abstracts (only one page each). For this reason, these two publications do not fall within any quartile category and do not receive any points.

3. Main areas of the candidate's research activity. Demonstrated skills or potential for leading scientific research (project management, attracted external funding, etc.).

Areas of Publication

The principal areas in which Dimitrinka Binova Kuzmanova has conducted research are the ecological parasitology of fish in Bulgaria, ecological monitoring of rivers, and ecotoxicology. The scientific publications submitted for the competition contain original contributions of both scientific and applied scientific significance. In addition, the candidate presents 21 poster presentations and one oral presentation delivered at a number of national and international conferences.

Citation and Indexing of the Scientific Output

The candidate presents a total of 16 citations for the purposes of the competition, which provide her with a total of 80 points under Indicator D. The citations are in prestigious international scientific journals, demonstrating that the scientific work of Dimitrinka Binova Kuzmanova has been well received by the scientific community.

Participation in Scientific Projects

The candidate has participated in a total of three projects - one externally funded and two internally funded by the Agricultural University - Plovdiv. All of them are thematically relevant to the competition.

4. Assessment of the candidate's pedagogical qualifications and teaching activity. Her role in the training of young researchers.

Dimitrinka Binova Kuzmanova has nearly 11 years of teaching experience at the

Agricultural University - Plovdiv. The candidate's teaching activity is primarily in the fields of Landscape Ecology, Biogeography, and Conservation Ecology, and she has delivered lectures, seminars, and practical classes in a total of five Bachelor's and Master's degree programmes, in both full-time and part-time forms of study at the Agricultural University - Plovdiv.

Teaching Workload of the Candidate

The candidate's teaching workload, including both contact and non-contact teaching activities, during the last five years has ranged between 428 and 807 hours annually, which fully satisfies the requirements of the present competition for the academic position of "Associate Professor".

Her teaching activity is further complemented by the supervision of 12 students who have successfully defended their graduation theses (8 at the Bachelor's degree level and 4 at the Master's degree level).

Published Teaching Materials

Although the candidate has not published any textbooks or teaching manuals to date, she has developed four course syllabi. This, together with her substantial contact and non-contact teaching workload and the considerable number of students who have successfully completed their graduation theses under her supervision, leaves no doubt as to her teaching competence.

Developed Courses

The candidate has developed four course syllabi, including the course "Protected Areas" (an elective course for the degree programmes "Ecology and Environmental Protection" and "Plant Protection"), the course "European Environmental Standards" (an elective course for the degree programme "Ecology and Environmental Protection"), and the course "Forest Ecosystems and Sustainable Use of Natural Resources" (a compulsory course in the Master's programme "Sustainable Use of Natural Resources and Ecological Tourism").

5. Significance of the obtained results, demonstrated through citations, publications in prestigious journals, awards, membership in international and national scientific bodies, etc.

The scientific results of Dr Dimitrinka Kuzmanova are characterised by good scientific productivity, thematic consistency, and recognition within the scientific community, with a substantial part of her publication activity focused on the study of biodiversity, parasite communities in freshwater fish, bioindication, and the ecological status of aquatic ecosystems. The submitted statement demonstrating compliance with the minimum national requirements shows that the candidate not only meets but exceeds the required minimum threshold for appointment to the academic position of "Associate Professor" in the professional field 4.4. Earth Sciences.

The publication output demonstrates a sustained scientific interest in issues of direct relevance to the ecology and conservation of aquatic ecosystems. The habilitation work includes publications devoted to the species diversity and structure of helminth communities in a number of freshwater fish species, including the *Barbus cyclolepis*, *Barbus barbus*, *Alburnus alburnus*, *Abramis brama*, *Vimba vimba*, *Squalius orpheus*, *Rutilus rutilus*, *Scardinius erythrophthalmus*, *Perca fluviatilis* and other species. Some of these studies also examine the accumulation of heavy metals in the "host-parasite" system, as well as the potential use of parasites as bioindicators of the condition of aquatic ecosystems. This thematic focus is of considerable importance, as it integrates data on biodiversity and parasite fauna with information on anthropogenic impacts and the ecological status of water bodies.

A particularly important indicator of the scientific significance of these results is

their publication in journals abstracted and indexed in international scientific databases, such as Scopus and Web of Science, some of which have an impact factor and an SJR ranking in the Q3 and Q4 quartiles. Substantial evidence of the candidate's scientific recognition is provided by the recorded citations of her scientific publications. The submitted documentation lists 16 citations, corresponding to a total of 80 points under Indicator D. These citations are not confined to a local or narrowly specialised scientific environment but include publications in international scientific journals indexed in Scopus and Web of Science, and in journals belonging to different quartiles.

In conclusion, it may be stated that the candidate's scientific output is of demonstrated significance and has a discernible impact on the development of research in the fields of biodiversity, parasitology, ecology, and the assessment of the status of freshwater ecosystems.

6. Significance of the contributions to science and practice. Reasoned assessment of the extent to which the candidate has a clearly defined research profile.

The main focus of Dr Dimitrinka Kuzmanova's research is the role of parasitic organisms as structural and functional components of freshwater ecosystems and the possibilities for their use in assessing ecological status and conserving water resources.

Based on the submitted body of work, it can reasonably be concluded that the candidate has a clearly defined, sustained, and consistently developed research profile. This profile may be characterised as ecological parasitology and the integrated ecological assessment of freshwater ecosystems through the study of biodiversity, the structure and functioning of parasite communities, their bioindicator role, and their involvement in the bioaccumulation of pollutants. This assessment is based on the 30 scientific publications submitted, which are devoted to investigations in a number of freshwater ecosystems in Bulgaria, including the Danube, Maritsa, Osam, Stryama, Topolnitsa, Luda Yana, Tamrashka, Cherna, Vit, Krumovitsa, and Srebarna. Thematically, these studies encompass biodiversity, parasitology, ecotoxicology, bioindication, and ecological monitoring.

The scientific fields in which the candidate works are logically interconnected and represent successive stages of a unified research model: initially, the species composition and structure of parasite communities are established; subsequently, the patterns governing their organisation are investigated; the results are used to assess ecological status; in parallel, the role of parasites in the accumulation and transfer of pollutants is examined; and finally, this knowledge is integrated into a comprehensive ecosystem-based approach. The research is not limited to traditional faunistic descriptions of parasites. The submitted documentation clearly demonstrates a progression from studies of species diversity towards investigations of the structure of parasite communities, host-parasite relationships, trophic interactions, the effects of eutrophication and anthropogenic pressure, and the use of parasites as bioindicators.

The scientific contributions may be classified into five principal groups.

1. Faunistic and parasitological contributions

The first group includes the expansion of knowledge concerning the taxonomic diversity and distribution of helminth fauna in freshwater fish in Bulgaria. Numerous host species have been investigated, and for many of them the species composition, dominance structure, component communities and infracommunities, as well as the principal parasitological parameters, have been established.

The scientific significance of these results lies in the fact that they enrich the available database on the biodiversity of freshwater ecosystems and provide information on the geographical distribution of parasite species and their hosts.

A particularly significant contribution concerns the identification of new hosts and new localities. These findings are of fundamental importance to parasitology and zoology, as they expand knowledge of species diversity, distribution, and "host-parasite" relationships within the Bulgarian freshwater fauna.

2. Ecological contributions to the structure and functioning of parasite communities

The second group of contributions represents a substantive development from faunistic towards ecological research. Through comparative studies conducted across different river basins, relationships have been established between species diversity, dominance structure, and parasite burden, on the one hand, and habitat type, trophic structure, seasonal dynamics, and anthropogenic impacts, on the other. Here, the contribution extends beyond the mere recording of parasite species. The patterns governing the formation of component communities and infracommunities, as well as the relationships between parasite assemblages and the characteristics of aquatic ecosystems, have been elucidated. Such results are important for the development of ecological parasitology, as the parasite community is regarded not merely as an assemblage of parasite species, but as a functional component of the ecosystem.

3. Contributions in the field of bioindication and ecological monitoring

The third group is among the most significant in defining the candidate's research profile. In this area, parasite communities have been considered as integrated ecological indicators reflecting the condition of the aquatic environment, the structure of fish communities, trophic relationships, and the degree of anthropogenic impact. The scientific value of this approach lies in the transition from traditional parasitological characterisation towards a functional and ecological interpretation of parasite communities. A particularly significant result is the use of parasite assemblages to assess ecological changes across different types of river habitats. This provides a scientific basis for the proposition that parasite communities may be used as complementary biological quality elements in the ecological assessment and monitoring of freshwater ecosystems.

4. Ecotoxicological contributions: bioaccumulation and trophic transfer of pollutants

The distribution of Pb, Cd, and As within the "sediment-fish-parasite" system has been studied. An integrated analysis has been conducted of pollutant concentrations in sediments, different organs and tissues of fish, and parasites. These results are of fundamental importance because they broaden the understanding of the movement and transfer of toxic elements through trophic chains and demonstrate that parasites are active components in bioaccumulation processes rather than merely passive indicators of pollution.

5. Contributions at the ecosystem level

The fifth group results from the development and integration of the preceding research directions. In the most recent studies, parasitological parameters have been integrated with data on the structure of fish assemblages, macrozoobenthos, physicochemical parameters, and biotic indices. In this way, a comprehensive approach to the assessment of freshwater ecosystems has been developed. This approach has been applied in the assessment of the Borovitsa, Krumovitsa, Cherna, and Luda Yana rivers and allows the results obtained from different biological and ecological components to be interpreted within a unified ecosystem framework. This represents a qualitative development in the candidate's scientific profile - from the investigation of an individual organism or parasite community towards the assessment of the functioning and ecological status of the ecosystem as a whole.

The candidate's contributions may be systematised as follows:

Original scientific contributions:

- establishing and supplementing data on the parasitic biodiversity of freshwater fish;
- identifying new hosts and new localities for parasite species;
- establishing the structure, dominance patterns, component communities, and infracommunities of helminth assemblages;
- elucidating the ecological factors determining the organisation of parasite communities;
- revealing patterns of bioaccumulation and trophic transfer of Pb, Cd, and As within the "sediment-fish-parasite" system.

Scientific contributions of a confirmatory nature:

- substantiating the role of parasite communities as functional components of freshwater ecosystems and their use as bioindicators;
- integrating parasitological, ichthyological, hydrobiological, and ecotoxicological indicators for comprehensive ecosystem assessment.

Methodological contributions:

- developing and applying a comprehensive approach to ecological assessment and monitoring;
- using parasite communities and pollutant accumulation as complementary tools for ecological monitoring.

Scientific and applied contributions:

- demonstrating the applicability of acanthocephalans as bioindicators of chemical pollution;
- providing up-to-date scientific information on the ecological status of a number of Bulgarian rivers and freshwater ecosystems;
- establishing a scientific basis for the monitoring, assessment, management, and conservation of freshwater ecosystems;
- enriching the information base required for future ecological, parasitological, ichthyological, and conservation research.

The submitted habilitation report provides grounds for concluding that the scientific contributions of Chief Assistant Professor Dimitrinka Kuzmanova, PhD, are genuine, thematically interconnected, and cumulative in nature. They do not represent a mechanical aggregation of results from different fields but rather form a clearly defined scientific core centred on ecological parasitology and the assessment of freshwater ecosystems.

A substantial strength of the scientific output is the traceable development of the research agenda. In the early studies, the emphasis was placed on establishing the species composition and biodiversity of the parasitic fauna. This was followed by a stage focused on elucidating the structure and ecological organisation of parasite communities. At the subsequent stage, these communities were used as bioindicators of the condition of the aquatic environment, while their role in the bioaccumulation and trophic transfer of pollutants was investigated in parallel.

From a scientific perspective, these contributions expand knowledge of the biodiversity and ecological organisation of parasite communities in Bulgarian freshwater ecosystems while simultaneously advancing the application of ecological parasitology to issues of bioindication and ecotoxicology. From a scientific and applied perspective, they are relevant to ecological monitoring, the assessment of anthropogenic impacts, and the conservation of water resources.

7. Critical remarks and recommendations

My principal remark and recommendation to the candidate is to develop and

publish, either independently or in co-authorship with colleagues, a textbook or teaching manual for one of the courses she teaches. In her future research work, I recommend that she seek to publish in journals with higher quartile rankings (Q1 and Q2) and participate more actively in national and international conferences and scientific forums by delivering oral presentations.

8. Personal impressions and opinion of the reviewer

I do not know Dimitrinka Binova Kuzmanova personally and therefore I assess her qualities as a scientific specialist, ecologist, and parasitologist solely on the basis of the materials submitted to me for review in connection with the competition for the academic position of "Associate Professor". In this regard, I can state that Dimitrinka Binova Kuzmanova has established herself and demonstrated her qualities as a very good specialist, a meticulous researcher and analyst, and an exceptionally well-qualified parasitologist and ecologist whose name is already well recognised within the scientific community.

CONCLUSION

Based on the analysis of the candidate's teaching, scientific, and scientific and applied activities, I consider that Dimitrinka Binova Kuzmanova **meets** the requirements of the Bulgarian Academic Staff Development Act, the Regulations for its Implementation, and the Regulations of the Agricultural University - Plovdiv for their application. The candidate presents a sufficient number of scientific publications published after the materials used in the defence of her PhD degree, containing original scientific and applied contributions that have received international recognition, with a representative proportion of them published in prestigious journals issued by international academic publishers. The theoretical developments have practical applicability, with some of them being directly oriented towards teaching activities. The scientific and teaching qualifications of Dimitrinka Binova Kuzmanova are beyond doubt.

All of the above provides sufficient grounds for me to give a **POSITIVE assessment** of her overall activity.

I therefore take the liberty of recommending that the esteemed Scientific Jury also vote **POSITIVELY** and that the Faculty Council of the Faculty of Plant Protection and Agroecology at the Agricultural University - Plovdiv **elect** Dimitrinka Binova Kuzmanova to the academic position of "Associate Professor" in the scientific specialty "Ecology and Ecosystem Conservation" (field of higher education: 4. Natural Sciences, Mathematics and Informatics; professional field: 4.4. Earth Sciences).

Date: 28.08.2026

Plovdiv

REVIEWER:.....

(Accos. Prof. Ivelin Mollov, PhD)