

## REVIEW

regarding a competition for conferral of Associate Professor title in the science major Ecology and ecosystem conservation, announced in SG 94 of 05.11. 2024 with candidate Maria Krasimirova Chunchukova from the Agricultural University, Plovdiv, according to Order RD 16-12/07.01.2025 of the Rector of the Agricultural University - Plovdiv as a member of the scientific jury

Reviewer: prof. Diyan Mihailov Georgiev, PhD Faculty of Agriculture, Trakia University, Stara Zagora, field of higher education 4. Natural sciences, informatics and mathematics, 4.3. Biological Sciences, science major: Ecology and ecosystem conservation.

Appointed as a member of the scientific jury by order RD-16-12/07.01.2025. of the Rector of the Agricultural University, Plovdiv.

### **1. General information on the candidate's career and field of development:**

Maria Krasimirova Chunchukova was born in 1981 in the city of Plovdiv. She completed higher education at the Agricultural University in the specialty "Ecology and Environmental Conservation" in 2006, and in 2007 she took a Master degree in "Landscaping - exterior and interior design". For five years she worked as a technical assistant in the food industry and specialized in the Landscaping and Design Department. Since 2013 is an assistant at the AU Plovdiv, where she conducts exercises and practical classes for students. In 2018 she was awarded with chief assistant title and began to lead lecture courses on various disciplines at the Faculty of Plant Protection.

### **2. General description of the presented materials.**

In the competition for conferral of Associate Professor title, Chief assist. Chunchukova, PhD participated with a total output of 27 works, grouped as follows:

- Scientific publications on the nomenclature specialty - 27 issues, of which:
- Publications related to the doctoral dissertation - 3 issues, which are not subject to consideration;
- Publications with an impact factor – 2 issues;
- Publications in peer-reviewed and refereed scientific journals – 22 issues;

Publications from conference proceedings were not submitted for the competition, but there is a list with a significant number of participations (18) in scientific forums abroad and in Bulgaria.

The personal participation of Chief assist. Chunchukova, PhD in the mentioned 24 works is illustrated by the fact that one of them is independent, she is first author of a total of 12; in 10 - she is the second author, and in one publication she is the third author. Textbooks and manuals are not provided.

**A total of 24 publications are subject to analysis to prepare the review**

**3. Main directions in the candidate's research work. Demonstrated skills or aptitude for leading scientific research (project management, attracted external funding, etc.).**

The scientific works of Chief assist. Chunchukova, PhD are in the following areas:

Scientific research related to the concentration, circulation and bioaccumulation of heavy metals and metalloids in waters, sediments, tissues and organs of fish;

Scientific research related to the ecology, biodiversity and bioindication of parasite communities of fish from Bulgarian large rivers and scientific research related to the ecology, biodiversity and bioindication of parasite communities of fish from Bulgarian large dams and Lake Srebarna.

Presented in three scientific aspects, Dr. Chunchukova's publications clearly define the scientific interests and scope of the researcher's pursuits. In this regard, I would like to emphasize that the candidate declares a clear presence in the scientific and publication field with precisely formulated goals and tasks.

**4. Evaluation of the pedagogical preparation and activity of the candidate. Its role in the training of young scientific personnel.**

From the materials submitted for the competition, it is clear that Dr. Chunchukova has an enviable teaching career. She leads 7 disciplines in the "Bachelor" and 7 in the "Master" degree, which are divided into 6 bachelor's and 3 master's specialties.

In addition, a report on the candidate's participation in 5 study programs, which are also in the field of the current competition, is presented.

**5. Significance of the obtained results, proven by citations, publications in refereed journals, awards, membership in international and national scientific institutions, etc.;**

The candidate has submitted a reference with 16 citations noted. Of these, 10 are cited in scientific journals in Scopus and 16 in scientific journals in Web of Science. A total of 9 citations are in journals with IF/SJR; 4 citations are in scientific journals indexed with Q2; 3 in scientific journals with Q3, and 2 with Q4. Out of the 50 points required for indicator D, Chunchukova presents 80 points regarding citations.

This indicates a significant excess of the required minimum points of citations. Citations are entirely in international journals of high scientific impact. This proves the recognizability of the candidate in the world scientific space.



**6. Significance of contributions for science and practice. A motivated answer to the question to what extent the candidate has a clearly defined profile of research work;**

The significance of the scientific contributions in the works of Chief assist. Chunchukova, PhD is in the field of ecology of parasites and parasite communities, taxonomy, hydrology and bioindication.

The scientific value is concluded not only in the sense of the first reports on the helminth fauna of fish in Bulgaria, but also in the innovative approaches to the ecology of the established species and their taxonomic affiliation.

In this regard, there are a number of reports of new hosts, colonized new territories and possibilities for new indicative dependencies of parasites and heavy metals in the waters and sediments of the studied sites. Dr. Chunchukova presents a clearly outlined profile of a scientist and researcher in the scientific field of the department and section in which she works.

### **I. ORIGINAL CONTRIBUTIONS**

The original contributions are related to determination of Pb content in fish tissues and organs, parasites, waters and sediments from the Danube River. As a result of the study, dependencies were established and sensitive bioindicators of lead burden were revealed.

Of particular importance are the established differences in the degree of accumulation of heavy metals and metalloids in *P. tereticollis* in different hosts (Publications 2 and 3).

### **II. METHODOLOGICAL CONTRIBUTIONS**

Methodological contributions are related to the approach to study different sections (upstream or downstream) of rivers that differ in ecological characteristics, habitats, species richness and degree of adverse impact (Publications 10,11,12,16,17,18).

### **III. SCIENTIFIC CONTRIBUTIONS**

Scientific contributions relate to the taxonomy, ecology and diversity of the helminth fauna of Bulgarian major rivers, reservoirs and protected areas. Scientific approaches to establish the indicator role of the helminth fauna of fish in Bulgaria are clearly outlined (Publications 1,2,3,15).

The scientific contributions related to the study of the water pollution of the river Danube with some heavy metals and metalloids (Rb, Ni, As, Cd) and their accumulation in sediments and organs of different fish species and their parasites are in relation to both dominant fish species and dominant parasite species from the river Danube, reflected in publications B1, B2, B3, B5, D5 and D14.

The candidate determines the content of As in *Alburnus alburnus* and *Abramis brama* (publications B1, D5), *Abramis brama*, *Barbus barbus*, *Alburnus alburnus* (publications B2, B3), of Cd in *Vimba vimba*, *Alburnus alburnus* (publication B5), of Ni in *Alburnus alburnus* (publication D14) and their parasites.

The possibilities of using parasites and parasite communities as bioindicators for the ecological state of the studied freshwater ecosystems are presented - p. Danube, b. Maritsa, b. Osam, b. Luda Yana, b. Stryama, b. Topolnitsa, r. Tamrushka, b. Tundzha, dam Batak and dam. Panicherry (publications B1, B2, B3). The bioindicator significance for assessing the degree of eutrophication of aquatic ecosystems is presented (publication G3).

The scientific contributions concern research on the biological diversity of parasites and parasite communities of freshwater fish species from river ecosystems and two dams on the territory of the country (publications B2, B6, B7, B8, B9, D1, D2, D3, D4, D8, D9, D10, D11, D12, D13). On this basis for printed 21 scientific publications. Of these, 2 publications are in IF journals: 1). Helminthologia – IF=0.798, SJR=0.398; 2). Bulgarian Journal of Veterinary Medicine - IF=0.47, SJT=0.16.

Chunchukova established new for science hosts of parasites (publications B4, B6, B8, B10, G2, G6, G9, G12), as well as new for Bulgaria habitats for established species of helminths (publications B10, G1, G2, G6, G7, G8, G12).

#### **IV. APPLIED CONTRIBUTIONS**

Applied contributions are related to the presentation of new data on the content of As, Pb, Cd and Ni in representatives of the ichthyofauna, waters and sediments of the river Danube. The concentration, circulation and bioaccumulation of heavy metals and metalloids in the waters of Bulgarian rivers, lakes and reservoirs (Publications 1,2,3,13,24).

#### **7. Critical notes and recommendations**

I have no critical comments regarding the submitted materials for the competition for conferral of Associate Professor title.

To the future work of Chief assist. Maria Krasimirova Chunchukova, PhD, in her capacity as Associate Professor, I would make a general recommendation, I hope with a motivating effect for achieving high scientific results. It would be good for Dr. Chunchukova to concentrate the results of the conducted studies and expand her future scientific work in this field of research and make a map of the distribution of helminths parasitizing fish in Bulgaria.

With the help of modern technological possibilities to make model maps of their potential habitats and geographical coordinates. All this, in addition to complementing her scientific profile, will have great practical and theoretical applicability. This type of



knowledge is well implemented in academic disciplines and motivates and supports students in their preparation.

In this connection, these qualities of Dr. Chunchukova should be emphasized, because the scientific significance of scientists is manifested not only by their leadership positions but also by the possibility of realizing shared ideas.

#### **8. Personal impressions and opinion of the reviewer**

I do not know the candidate personally, but I am impressed by her scientific and publication activities. In the professional contacts I have had, I remain with the image of a responsible and ethical scientist. The author collectives of the publications support the opinion of teamwork, good collaboration with colleagues and creation of successful collectives with scientific achievements.

In this connection, these qualities of Dr. Chunchukova should be emphasized, because the scientific significance of scientists is manifested not only by their leadership positions but also by the possibility of realizing shared ideas.

#### **CONCLUSION**

Based on the analysis of the candidate's pedagogical, scientific and scientific-applied activities, I believe that Maria Chunchukova meets the requirements of the Law for the Development of the Academic Staff of the Republic of Bulgaria and the Regulations for the Development of the Academic Staff of the Agrarian University for its application.

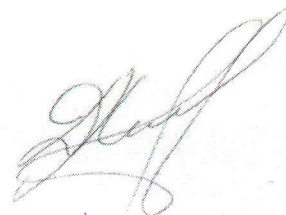
The materials presented to me show that there is scientific potential and teaching experience, and the scientometric indicators in the groups for minimum national requirements also confirm the significance of the published works. All this is a good enough reason to confidently give a positive assessment to Chief assist. Maria Chunchukova, PhD and congratulate her on the results achieved.

I take the liberty of proposing to the honorable Scientific Jury also to vote positively, and the Faculty Council of the Faculty of Plant Protection and Agroecology at the Agrarian University - Plovdiv to award Maria Krasimirova Chunchukova with "associate professor" title in the science major Ecology and ecosystem conservation.

06.02.2025

Stara Zagora

REVIEWER:



(Prof. D. Georgiev, PhD)