

STATEMENT

by Anelia Mihaylova Stojanova, PhD

Associate Professor at the Department of Zoology, Faculty of Biology, University of Plovdiv "Paisii Hilendarski"

of a dissertation for awarding the educational and scientific degree "**Doctor of Philosophy**"

Field of higher education: 4. Natural sciences, mathematics and informatics

Professional direction: 4.3. Biological Sciences

Doctoral program: Zoology

Author: Svetlozara Boyanova Kazandzhieva

Topic: Biodiversity and Distribution of the Families Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae (Diptera) in the Oriental Region

Scientific supervisor: Prof. Dimitar Nikolaev Bechev, DBSc – "Paisii Hilendarski" University of Plovdiv

1. General presentation of the procedure and the doctoral student

By order No. RD-21-703 of 30 March 2023 of the Rector of the "Paisii Hilendarski" University of Plovdiv, I have been appointed as a member of the scientific jury to ensure a procedure for the defense of the PhD thesis entitled „Biodiversity and Distribution of the Families Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae (Diptera) in the Oriental Region“ for awarding the educational and scientific degree "Doctor of Philosophy", in the field of higher education 4. Natural sciences, mathematics and informatics, professional direction 4.3. Biological Sciences, Doctoral program Zoology. Author of the PhD thesis is Svetlozara Boyanova Kazandzhieva – full-time PhD student in Zoology Department of Faculty of Biology at "Paisii Hilendarski" University of Plovdiv, with scientific supervisor Prof. Dimitar Nikolaev Bechev, DBSc from "Paisii Hilendarski" University of Plovdiv.

The presented set of materials by Svetlozara Kazandzhieva in electronic form is in accordance with an Article 36 (1) of the Regulations for the Development of the Academic Staff of the University of Plovdiv, includes all the necessary documents described in the application to the Rector of the "Paisii Hilendarski" University of Plovdiv. The documents are prepared and presented correctly and accurately.

The PhD student has submitted 2 scientific works published in the internationally renowned peer reviewed scientific journal Zootaxa, indexed in the Web of Science and Scopus databases.

Svetlozara Kazandzhieva graduated from the Faculty of Philosophy of Sofia University "St. Kliment Ohridski" as a bachelor's degree in Cultural Studies in 2014, and in 2017 she obtained a Master's degree in the Master's program Biodiversity, Ecology and Conservation. From 2019 to 2022, she was a full-time PhD student at the Department of Zoology of Faculty of Biology at the University of Plovdiv "Paisii Hilendarski". As a PhD student, Svetlozara Kazandzhieva has participated in research projects, international conferences, training programs and seminars. Since 2017, she has worked as a "Public Relations" specialist and tour guide at the Regional Natural History Museum - Plovdiv, where she has developed a project activity related to the protection of biodiversity in Bulgaria and popularisation of museum work.

2. Relevance of the topic

The dissertation work of Svetlozara Kazandzhieva is dedicated to the study of fungus gnats of 5 families in the Oriental region, where studies on these groups span almost two centuries. However, there is a lack of up-to-date faunal lists and databases in the literature, which makes research of fungus gnats laborious. In the dissertation, all available published

information on the studied families has been systematised, materials from the region have been additionally identified, new species have been described, and a number of taxonomic problems have been resolved. In addition, a zoogeographic characterisation of all species has been completed, which enables the analysis and assessment of the richness of the fauna of the Oriental region. The achieved results clearly outline the relevance of this classic taxonomic and faunal approaches based study.

3. Comprehension of the research question

The literature review of the dissertation thoroughly presents the published research on the topic to date, and the PhD student demonstrates skills in analytical summaries and critical evaluation of literary sources. In her work, Svetlozara Kazandzhieva refers to 295 sources from the literature, of which only 1 is in Bulgarian. The carefully curated and summarized information shows the in-depth and purposeful preliminary theoretical preparation of the PhD student and motivates the aim, objectives and specific approaches necessary for the realization of the dissertation research.

4. Research methodology

Classical and modern approaches for taxonomic and faunal studies were applied in fulfilling the aim and objectives of the study. For the completion of the faunal studies for the dissertation, more than 1150 specimens were identified and all the relevant information was extracted from the literary sources, providing a solid base for zoogeographic analyses. Modern software packages were used to sort the produced information. The appendices to the dissertation accurately present all raw data.

It can be concluded that the methods selected and used in the development of the study are appropriate to the stated objectives and were used correctly throughout the work.

5. Characterisation and evaluation of the dissertation work and additional contributions

The dissertation work of Svetlozara Kazandzhieva contains 264 pages, it contains 9 tables, 71 figures and 4 appendices, and is written according to outlined regulations. The results are presented and systematised in accordance with the aim and objectives. The dissertation is written in a very good language and style.

The analysis of the results is thorough and logically leads to clearly formulated summaries and conclusions; the original and applied scientific contributions of this work are significant.

Taxonomic contributions: four species new to science are described, two of which have been published; taxonomic keys for identification of the species of the genera *Stenophragma* and *Chetoneura* by morphological characters were compiled; six homonyms of species from two families were established.

Faunistic contributions: information on 825 species from 116 genera is summarised (according to literature data and processed materials); the taxonomic composition of the fauna at the level of family, subfamily and genus in the Oriental region was analysed.

Zoogeographical contributions: a zoogeographic characterisation of the established species in 22 categories was made, which is the first of this kind for the Oriental region; the results are thoroughly analysed and reasoned conclusions are drawn.

I regards the intention of the PhD student and the scientific supervisor to prepare a Catalog of the Fauna of the Oriental Region as very prospective.

6. Assessment of publications and personal contributions

Svetlozara Kazandzhieva has presented two publications based on research from the dissertation, in one of which she is the first author, published in the scientific journal Zootaxa (2020: IF – 1.091, Q2; 2022: IF – 1.026, Q2) and are co-authored by the project supervisor. These publications contribute a total of 40 points (30 points required) according to the minimum national requirements under indicator group "D".

The personal contribution of the PhD student to the implementation of each stage of the dissertation work is evident. The achieved results and formulated contributions are a personal merit of Svetlozara Kazandzhieva.

7. Abstract of the PhD thesis

The abstract of PhD thesis is in accordance with the Regulations for the Development of the Academic Staff of the University of Plovdiv, accurately presents all sections of the dissertation work and reflects the results and original scientific and applied-scientific contributions achieved in the dissertation.

8. Personal impressions

I have known Svetlozara Kazandzhieva since her Master's education at the Faculty of Biology, University of Plovdiv "Paisii Hilendarski" and later as a PhD student at the Department of Zoology. My personal impressions of the PhD candidate, which I have built during this period, are excellent. Svetlozara Kazandzhieva is responsible, organised and dedicated to her work, hardworking as a researcher and as a person. I am convinced that these qualities will ensure her professional development and I believe that she will maintain her interest in research work in the future.

9. Recommendations for future use of dissertation contributions and results

I recommend the new species presented in the thesis to be published in internationally renowned peer reviewed scientific journals, and the entirety of the information to be revised and formatted to serve as the basis of a Catalog of the studied groups in the Oriental region, as planned by the PhD student and supervisor .

CONCLUSION

Everything presented above undoubtedly shows that in the process of developing her dissertation, Svetlozara Kazandzhieva acquired in-depth theoretical knowledge and practical skills for work in the field of entomology.

She demonstrates abilities for independently conducting scientific research, analysing and summarising results, and drawing reasonable conclusions.

The dissertation contains scientific and applied-scientific results and has the characteristics of valuable research with potential for future development. The submitted dissertation, abstract, publications and set of accompanying administrative documents meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the relevant Regulations of the University of Plovdiv "Paisii Hilendarski" for the acquisition of the educational and scientific degree "Doctor of Philosophy".

I confidently give my **positive assessment** of the conducted research, the achieved results and contributions, and **I propose to the respected scientific jury to award the educational and scientific degree "doctor" to Svetlozara Boyanova Kazandzhieva** in the field of higher education 4. Natural sciences, mathematics and informatics, professional direction 4.3. Biological Sciences, Doctoral Program Zoology.

30.04 2023 г.

Statement prepared by:

(Assoc. Prof. Anelia Stojanova, PhD)