

ЛЕСОТЕХНИЧЕСКИ УНИВЕРСИТЕТ ФАКУЛТЕТ ПО ГОРСКО СТОПАНСТВО
Регистрационен индекс на дата
ФСС-5435/08.08.23-

REVIEW

on the materials submitted for participation in a competition for an academic position “Professor”, domain of higher education: “6. Agricultural sciences and veterinary medicine”, professional area “6.5. Forestry”, scientific specialty “Silviculture, including Dendrology”, educational subject “Phytocoenology”, declared by the University of Forestry in State Gazette, №26/21.03.2023, code of the procedure FOR-P-0223-102 .

Applicant for the position: Associate Professor Marius Alipiev Dimitrov, Ph.D.

Reviewer: Professor Petar Zhelev Stoyanov, Ph.D. , professional area “6.5. Forestry”, University of Forestry

1. Brief biographic information about the applicant

Marius Dimitrov graduated with a M.Sc. degree with major in Forestry and minor in Ecology and Environmental Protection from the University of Forestry (UF) in 1991. In 1992 he was elected a part-time assistant professor, and since 1994 he has been a full-time assistant professor in the UF in Sofia. In 2004 he defended a Ph.D. thesis on the classification of vegetation on the territory of Yundola Experimental Forest Service by using the floristic method (better known as the Braun-Blanquet method). Since 2006, he has been an associate professor. From 2007 to 2016, he was the deputy dean of the Faculty of Forestry (FF) for two terms, and since 2016 he serves as a Dean of the FF.

Dr. Dimitrov speaks very good French, English and Russian, and possesses very good computer skills. He is a member of four scientific and professional organizations: Bulgarian Society of Phytocoenology, Bulgarian Botanical Society, Union of the scientists in Bulgaria and East-Alpine and Dinarian Society for the study of vegetation.

2. Compliance of the submitted documents and materials of the applicant with those required under the Regulations on the Development of Academic Staff in the UF;

To participate in the competition, the candidate Associate Professor Dimitrov has submitted all the necessary documents required by virtue of the Act for the Development of the Academic Staff in the Republic of Bulgaria (ADASRB) and the Regulations for the Development of the Academic Staff of UF (RDASUF). All documents are described in detail in the submitted application for participation in the competition. The candidate participates with articles united by a common topic, which can be considered as equivalent to a monograph, as well as with many other

scientific and scientific-applied articles, and also with teaching manuals and handbooks. Below is a detailed analysis of his publications.

The presented report on the minimum scientometric requirements provided for in the ADASRB and RDASUF shows that Dr. Dimitrov convincingly covers them, and in a number of cases significantly surpasses them. Indicator A has the standard 50 points, indicator B has 181.1 points out of a required 100, indicator D has 224.46 points out of a required 200, indicator D has 2645 points out of a required 100 and indicator E – 185 points.

3. Evaluation of teaching activities of the applicant

Dr. Dimitrov is an erudite and demanding teacher. During his more than 30-year teaching career, he gave lectures and conducted laboratory classes and practical training in the subjects of Botany and Phytocenology, but also in many other subjects related to botany, such as "Medical Botany", "Ornamental Plants in the Flora of Bulgaria", "Botany and phytomonitoring", of students from different specialties, in at least four faculties of the UF. He is the author of study programs in Phytocenology and other subjects. He is the co-author of a textbook of Botany (2010) and Phytocenology (2012), as well as a Manual for laboratory classes in botany. It can be summarized that for more than 30 years Dr. Dimitrov has carried out and continues to carry out high-level educational activities and successfully prepare students from various specialties and faculties of the UF. He was a supervisor or consultant of four Ph.D. students, two of whom successfully defended their dissertations. Under his supervision, four diploma theses were defended – three for M.Sc. and one for B.Sc. degree.

4. Evaluation of the scientific, applied and publication activity of the applicant.

4.1. Participation in research, applied and educational projects.

Prof. Dimitrov has submitted a certificate of participation in one international and four national scientific projects. In addition, he has been involved in a large number (over 60) of applied projects, including the development of protected area management plans and other studies related to biodiversity conservation. *This shows that he is a expert in those scientific and applied fields related to the study of flora and vegetation and to nature conservation. This also emphasizes his organizational abilities as well as his teamwork skills.*

4.2. Characteristics of the published scientific results

Dr. Dimitrov submitted a detailed list of publications, which can generally be classified into several categories. Ten publications united by a common topic present the habilitation report and are considered equivalent to a monograph. All they were published in publications referred in Web of Science (WoS) and Scopus. Out of these 10 publications, four other papers were published in journals referred in the mentioned databases. Seven articles were published in scientific journals outside the focus of WoS and Scopus; however, these journals are of a very good scientific level. Four articles are in proceedings of national and international scientific conferences. Thirteen works are book chapters and other types of collective monographs. A monograph was published on the topic of the Ph.D. thesis, containing updated information. Three of the articles are independent, on 15 articles the candidate is the leading (first) author, and on the rest he is the second and next author. A total of 19 articles were published in Bulgarian and 29 in English, such as the developments in the Red Book of Bulgaria item 3. "Natural habitats" were published in both Bulgarian and English. The articles on natural habitats deserve a special comment, because in the presented list of publications Dr. Dimitrov presented the information by grouping the articles depending on the authors/co-authors. This gives the impression that 9 natural habitats have been described by him, when in fact, alone or in co-authorship, he has developed 18, plus Concept and Methodology, and Glossary of Terms used.

In addition to the mentioned scientific articles, Dr. Dimitrov is the author of four practical guides, three popular science books and 6 popular science articles.

4.3. Reflection of the scientific activity of the applicant in the literature (citations).

The applicant has presented information about more than 293 citations to illustrate that he exceeds the minimum requirements multiple times (more than 20 times in terms of points). There are probably other unidentified citations, but in this case their exact number is of secondary importance. The more important point is that the international colleagues are familiar with the scientific achievements of Dr. Dimitrov. This is also emphasized by the fact that many of the citations are in prestigious international journals, such as *Phytocoenologia*, *Journal of Vegetation Science*, *Ecography*, *Applied Vegetation Science*, *Hacquetia*, and many others.

4.4. Contributions in the scientific production of the applicant (scientific and applied contributions).

Dr. Marius Dimitrov has a clear and recognizable scientific profile. The main part of his scientific work is generally aimed at the characterization of the plant cover and the conservation of biological diversity.

Dr. Dimitrov's scientific contributions can be classified in the following general directions:

- Classification of vegetation.

He is one of the pioneers and leading scientists in Bulgaria in the application of the floristic method for the classification of plant communities, also known as the Braun-Blanquet method. He has described, alone or in co-authorship, more than 30 associations and 10 subassociations new to science, as well as other lower rank syntaxa. Some of the associations described are marked as 'provisional', meaning they are preliminary, but this does not diminish their value, as it is likely that most, if not all, of them will be confirmed under existing international rules for the phytosociological nomenclature. Some of the described associations are specific to the Balkan Peninsula and have conservation value, such as those in the natural Horse chestnut and Macedonian pine forests. In addition to the newly described associations, a large number of plant syntaxa of different ranks were reported, which were established during the studies within various territories in Bulgaria, for example, Central Balkan National Park, Slivenska Mts., some of which are new to the country or to the respective region. The communities of the alliances *Alnion incanae* and *Brachypodium pinnati – Juniperion communis* were established for the first time in Bulgaria.

The good knowledge on the vegetation and the conducted phytocenological studies allowed Dr. Dimitrov, together with two other eminent scientists in this field, to summarize in a extensive review the classification scheme of all plant communities at different taxonomic levels, established by the floristic method in Bulgaria. This large-scale review has been a valuable reference to all researchers working in the field and has eventually received a large number of citations. The review contains also a critical reappraisal and revision of the published syntaxa, some of them being validated according to international nomenclatural rules.

- Floristic studies

The application of the Braun-Blanquet method for vegetation classification requires a very detailed inventory of the flora on the studied area, and therefore such studies almost always result in floristic contributions. Such contributions are noted in many of Dr. Dimitrov's works, but two articles should be especially highlighted - the study of the flora of Slivenska Mts. and the study of the peat moss communities of Vitosha. In the first case, 1218 species were recorded, of which 84 were new to the area, and it was proven that the studied flora meets the criteria for being

elementary (specific). In the second case, more than 200 species were found, of which 121 were seed plants and 89 were mosses.

- Studies on the natural habitats.

The study of natural habitats is an area that gained more attention in Bulgaria in the last 2-3 decades, in connection with the introduction of Natura 2000 and in connection with Bulgaria's accession to the EU. From the very beginning, Dr. Dimitrov has been among the leading experts on natural habitats in Bulgaria. This is emphasized not only by his scientific contributions, which are analyzed here, but also by the fact that he is among the leading authors of the Guide for identification of habitats of European significance in Bulgaria, which has undergone two editions and serves as a reference book for everybody dealing with the study and protection of natural habitats.

The important contributions of Dr. Dimitrov in this field are methodological, related to the development and application of methods and models for determining and mapping habitats, including GIS technique. Remote sensing methods have been applied and recommended not only for mapping the habitats, but also for the identification of plant communities, as much of the habitats are determined based on the nature of the phytocenoses.

Another contribution is the establishment of natural habitats in various Natura 2000 protected areas and the assessment of their nature conservation status. The influence of some negative factors, such as grazing, on the status of habitats has been analyzed in detail.

The developed natural habitats in the Red Book of Bulgaria, vol. 3, also deserve high evaluation. This is one of the first such books in Europe, and in the 18 articles on habitats with nature conservation value, which are authored and co-authored by Dr. Dimitrov is presented rich and comprehensive information about the habitats.

- Contributions resulting of studies on natural ecosystems

As indicated above, it is not always possible to make a clear distinction between different groups of contributions, since the research itself is interdisciplinary and uses the same or similar methods. In one group, tentatively designated here as ecological studies, the contributions related to the dynamics of plant communities and the bioproductivity of forest ecosystems can be summarized. Studies on the dynamics of the plant cover are related to evaluation of the effects of various natural and anthropogenic factors – windstorms and other natural disturbances, grazing, etc. The peculiarities of the successional processes on the territory of Slivenska Mts. have been established and it has been concluded that the cessation of grazing load can lead to a change in the

character of the communities. The patterns in the development of high mountain communities under the influence of grazing were established, and increasing of the alpine timber line in relation to exposition. All these contributions are related to the detailed study of the plant cover, which shows that Dr. Dimitrov successfully uses the characteristics of plant communities as an indicator of changes in ecosystems.

The established biproductivity of beech ecosystems and the dependence of this indicator on various environmental factors can also be referred to the group of ecological studies. The obtained results are also related to global climate change phenomena and related processes, and the possible response of forest ecosystems.

- Biodiversity conservation

In fact, almost all scientific results of Dr. Dimitrov's studies bring information and offer the possibility of their application for biodiversity conservation at different levels. Here it is sometimes difficult to distinguish between purely scientific and scientific-applied contributions, but this does not diminish their great importance. The linking of beech forest types and natural habitats of Natura 2000 can be indicated here, which practically "translates" into forestry language the types of habitats and facilitates their management and conservation. Important contributions related to nature conservation have been made in the study of GIS-modeling and remote sensing of natural habitats and plant communities, as well as the identification of the conservation importance of common beech-dominated forests.

- Forestry higher education and science

The administrative position of Dean of the FF requires a study of the quality of forestry education at UF. As a result of this study, the existing problems in education have been identified, and measures have been planned to overcome them and increase the quality of the educational process at UF.

- Scientific and applied contributions

This group of contributions of Dr. Dimitrov follows directly from the established scientific facts and therefore, they are very briefly presented like the groups of scientific contributions.

As a result of the studies of the plant communities and the flora, recommendations were given for their conservation and sustainable use in the specific studied territories. Dr. Dimitrov participated in the construction of national and international databases for plant communities.

Similarly, in an applied aspect, threats are identified and recommendations are given for

conservation of a large number of natural habitats. As stated above, the guidelines made for determining natural habitats have both scientific and applied importance. The same applies to the articles in volume 3 of the Red Data Book (*loc. cit.*).

Studies on the problems of higher forestry education have served as a basis for recommendations for its improvement and optimization, as well as for raising the authority of UF at home and abroad.

I fully accept the report on the contributions presented by Dr. Dimitrov as part of the competition documents.

Special emphasizing requires Dr. Dimitrov's practical activities related to biological diversity conservation. He participates as a representative of UF in the National Council for Biological Diversity at the Ministry of Environment and Waters of Bulgaria. As an expert, he has repeatedly participated in discussions related to the protection of specific territories and preventing their development and degradation, and it should be emphasized that in many cases these discussions were tense, in direct confrontation with financially strong and influential initiators of investment intentions.

5. Evaluation of the personal contributions of the applicant

The candidate's personal contribution is clearly expressed throughout his scientific output. He is one of the leading scientists in our country in the field of the study of vegetation and natural habitats. Therefore, in most of the publications he has a leading role, in spite of being first or subsequent author.

6. Critical remarks and recommendations

I have no important critical remarks and recommendations.

7. Personal impressions

I have known the candidate Associate Professor Dimitrov since 1987, when, as a student who had just finished his first year, he became actively involved in the work of the Student Club for Environmental Protection at UF. For several years, he took part in many scientific expeditions in natural protected areas and as a result developed a scientific interest and gained serious knowledge in the fields of botany, phytocenology and biodiversity conservation. After that, my impressions are from our joint work in the Department of Dendrology. He is an established leading teacher who enjoys high authority among colleagues

and students. From 2007 until now, Assoc. Prof. Dimitrov has devoted a great deal of time to his administrative work as Deputy Dean and Dean, thus serving the Faculty and the University.

8. Conclusion

Assoc. Prof. Marius Dimitrov is an established scientist with his own style. During his more than 30 years of work as a teacher and scientist at LTU, he has achieved significant scientific and applied results, which have been appreciated by the colleagues in Bulgaria and abroad. He meets all the scientometric and other requirements provided for in the ADASRB and RDASUF. Based on all facts and evaluations presented above, I support the candidature of Assoc. Prof. **MARIUS ALIPIEV DIMITROV** for the academic position Professor of Phytocoenology, Professional domain 6.5. Forestry.

Signature of the reviewer:

The review was submitted on: 8.8.2023 г.