REVIEW

by Prof. Dr. Svetlana Temelkova Bancheva from IBER - BAS,
Member of the Scientific Jury
for the competition for the academic position "Professor"
in the field of higher education 4.3. Biological sciences (Ecology and protection of ecosystems - Phytoecology), for the needs of the department "Ecology and protection of the natural environment", BF of Sofia University "St. Kliment Ohridski"

Candidate: Assoc. Prof. Dr. Rossen Todorov Tzonev

In the announced competition for the academic position "Professor" of higher education 4.3. Biological Sciences (Ecology and Ecosystem Protection – Phytoecology) for the needs of the Department of "Ecology and Environmental Protection" of the Faculty of Biology of Sofia University "St. Kliment Ohridski ", published in the State Gazette, issue 88. from 13.10.2020, one candidate participates - Dr. Rosen Todorov Tzonev, associate professor in the same department. The materials on the competition are prepared in accordance with the all requirements of the Act for the Development of the Academic Staff in the Republic of Bulgaria (ADASRB), the Rules for its implementation and the Regulations for the development of the academic staff of Sofia University "St. Kliment Ohridski" of the academic position of "Professor". I have no joint publications with the candidate.

1. General data about the career and thematic development of the candidate

Rosen Todorov Tzonev obtained a master's degree in "Ecology" at the Faculty of Biology of Sofia University "St. Kl. Ohridski" in 1998. In the period 1999-2002 he developed his PhD Thesys in " Botany "at the same University. In 2002, after winning a competition, he was appointed as an assistant in the Department of Ecology and Environmental Protection at Sofia University "St. Kl. Ohridski ", and subsequently held the positions of "senior assistant"(2002-2004) and "chief assistant" (2004-2006). In the period 2000-2004 he completed a three-month post-doctoral specialization in the Department of Zoology and Botany at Masaryk University, Brno, Czech Republic. From 2011 to the present, the candidate is an "associate professor" in the Department of Ecology and Environmental Protection at Sofia University "St. Kl. Ohridski". The main responsibilities he is entrusted with are teaching and research activities.

His research interests are related to the study and classification of plant communities and natural habitats, conservation of endangered and important for the European community species of plants, animals, plant communities and natural habitats.

2. Teaching activity

Assoc. Prof. Rosen Tzonev is a lecturer in Environmental Protection and Ecology at the Department of Ecology and Environmental Protection of the Faculty of Biology at Sofia University “St. Kl. Ohridski ”. He is a holder of 6 basic courses for bachelors and masters. From the attached reference it is evident that his teaching load is quite high - 371 hours per year, of which 282 hours of lectures and 89 hours of exercises. This shows the implementation of the provisions of the Rules of Sofia University "St. Kl. Ohridski” workload for teachers of 270 hours of classroom and 360 hours of total study employment. His lectures and exercises are extremely important for the formation of basic and specialized knowledge of students in the field of ecology, methods of ecological research, phytoecology, biogeography, protected areas and conservation of biological diversity. My impressions are that he is an extremely well-prepared and captivating lecturer who knows how to influence and engage the audience.

He has trained 14 graduates (13 masters and 1 bachelor), 1 PhD student, other three PhD student are in the process of preparation. All this testifies to his serious commitment to the training and career development of young people, the only sure way to transfer knowledge to others in his fields of competence.

3. Scientific-metric indicators

For the current competition, Dr. Tzonev has presented a list of 50 publications, all from the period after his award to the academic position of "Associate Professor" (between November 2010 and December 2020). Of these, 30 publications bring him points, according to the appendix to Art. 1a, para. 1 of the Regulations for application of the Law on Scientific Research, divided into the following categories: 24 are in scientific journals, which are referenced and indexed in SCOPUS and WEB of SCIENCE, 5 are books or a chapter of a book and 1 textbook. The other 20 publications, although they present significant results, do not bring him points. They are included in the list for the competition because the results presented in them are part of the scientific contributions of the candidate.

The fulfillment of the minimum national requirements for holding the position of "Professor" is as follows:

The indicator from group "A" is fulfilled (50 points).

The Group "B" indicator is not required for this position.

The indicators from group "B" bring the candidate 110 points, out of the required 100. Here are included 6 publications with the following quartiles /according to the metrics SJR of scientific journals/: Q1 - 3, Q2 - 2, Q3 - 1, Q4 - 0. The publications with quartiles 1 and 2 predominate, which is a proof of the importance of the authors' research and of the high appreciation by the international scientific community.

According to indicators from group "G7" Assoc. Prof. Tzonev has included 18 publications, which bring him 352 points, distributed as follows: Q1 - 2, Q2 - 2, Q3 - 7, Q4 - 6, edition with SJR without IF - 1 (277 points in total). Most of the publications are from the third and fourth quartiles. In the group of indicators "G8" are presented 3 books and 2 chapters of books (75 points in total). As can be seen, according to the indicators from group "D" the colleague significantly exceeds the required 200 points.

According to indicators from group "D" the candidate has declared 697 points, with a required 100. The citations of the scientific publications with which he participates in the competition are a total of 430, as 267 of which are referred by SCOPUS and WEB of SCIENCE (534 points) and 163 are in books, dissertations and journals that are not in these databases (163 points). According to this indicator, the applicant exceeds seven times the minimum national requirements. High citation of scientific work of Prof. Tzonev is proof of the importance of his research, as well as the actuality of his investigations.

According to the indicators from group "E", 150 points are required to meet the minimum national requirements for the position of "professor". Dr. Tzonev is the supervisor of 1 successfully defended doctoral student (50 points). He has participated in the implementation or management of 27 national scientific projects (270 points) and in 2 international scientific projects (40 points). Participation in the writing of textbooks and teaching aids should also be included in this group. The colleague is a co-author of 1 textbook, which brings him another 40 points. The sum of the points according to the indicators from group "E" of Assoc. Prof. Tsonev is 400 points.

The presented scientific metrics of the candidate testify to his exceptional activity not only in teaching students, but also in conducting research and publishing their results, which confirms him as a recognizable scientist at a very good European level.

4. **Main research areas of the candidate and the most important scientific contributions**

The scientific and applied research of Assoc. Prof. Tzonev during his entire scientific career is focused mainly on the study of the diversity of the vegetation of Bulgaria and its connection with the vegetation of the Balkans and Europe. For more than 50 years, the study of vegetation in Bulgaria has been carried out on the so-called dominant method. Assoc. Prof. Tzonev is one of the first Bulgarian scientists to conduct targeted research on vegetation in Bulgaria according to the Brown-Blanquet methodology, widely used throughout Europe. He conducts his research independently or with other colleagues from Bulgaria, Slovakia, Poland, Hungary, Germany, Slovenia, Belgium, Austria, Italy, France, Spain, Greece, Turkey, Russia, Macedonia, Serbia and others.

The contributions of Assoc. Prof. Tzonev in connection with the competition can be attributed to the following main areas:

I. In the field of Phytocenology

1. Original contributions to the study and classification of different types of vegetation in Europe and Asia Minor, among which the following deserve special attention: **1.1.** Prepared classification of *Fagus sylvatica* forests from Europe and Asia Minor, including two ecologically-defined alliances, acidophytic with 3 suballiances; and basiphytic with 12 suballiances (almost 25 000 descriptions); **1.2.** Identified 7 main types of coastal grass communities, corresponding to the different geographical regions in Europe; **1.3.** The first standardized classification of coastal dune vegetation in Europe, including 18 alliances (including newly described or revised) together with an expert system containing the standard characteristics of the alliances; **1.4.** Comprehensive revision and the first formalized classification of floodplain forests and alder carrs in Europe, distinguishing 30 associations belonging to 5 alliances; **1.5.** The first comprehensive, phytosociological classification of European marsh vegetation of the class Phragmito-Magnocaricetea, describing new syntaxons; **1.6.** Participation in the publication of the European Red List of Habitats, which assesses the risk of extinction of marine, terrestrial and freshwater habitats in the European Union (EU28) and adjacent regions (EU28 +).

2. Original contributions to the study and classification of different types of vegetation on the territory of Bulgaria, among which the following deserve special attention: **2.1**. The first phytosociological classification of oak forests in Bulgaria (based on 716 descriptions), including 19 associations and sub-associations and two communities, of which 6 associations and 3 sub-associations are new to science and 1 alliance is new to Bulgaria; **2.2.** The first phytosociological classification of serpentine communities in Bulgaria, including 1 new

endemic association for science and 1 new alliance for Bulgaria; **2.3.** The first phytosociological classification of forests of *Castanea sativa* and forests dominated by *Pinus nigra* ssp. *pallasiana*, describing 2 new associations for science and 1 new one for Bulgaria; **2.4.** *Genista lydia* communities have been studied and new syntaxons have been described; **2.5.** The vegetation in wetlands in Bulgaria has been studied, such as the riparian high-grass vegetation in the Middle Danube Plain, where one new association for science, 1 new association for Bulgaria and 1 new alliance for Bulgaria and the Balkan Peninsula are described; the macrophytic flora and vegetation of the maintained Srebarna reserve; the wet meadows in Ranislavtsi in Kostinbrod municipality, where three new associations for Bulgaria have been established; **2.6.** The forest communities in Etropole Stara Planina have been studied and classified.

3. Original contributions in the field of plant ecology: **3.1.** The reasons for the richness of the flora in the Eastern Balkans (based on phytocenological descriptions) and the main factors for this have been studied; **3.2.** The relationship between species richness and productivity of 694 dry grasslands in the temperate latitudes of 8 regions of northern Eurasia, in the absence of nitrogen (N) and phosphorus (P) or both elements, has been studied.

II. Contributions in the field of floristics

1. Four new species have been identified for the flora of Bulgaria (*Ranunculus paludosus*, *Erodium botrys* and 2 weeds on rice *Heteranthera reniformis* and *Rotala ramosior*); **2.** New chorological data have been published for 12 species, some of which are of conservation significance.

III. Applied scientific contributions

Assoc. Prof. Tzonev has invested a lot of time and effort in applied research, which contributes to the development of policies for the protection of the plant diversity in Bulgaria and Europe: The conservation status of 10 species of non-forest habitats from DH in SAC Ponor, included in the Natura 2000 network, has been mapped and assessed; An ecological approach is proposed for the development of freshwater fish farms in the protected areas of NATURA 2000 in Bulgaria; The possibilities of *Trifolium subterraneum* for creating forage crops have been studied; For the first time an assessment of the supporting ecosystem services provided by the agro-ecosystems in Bulgaria has been made; Two guidelines have been prepared for the natural habitats of conservation significance in the Strandzha Nature Park, as well as for the natural habitats, which are pastures, meadows, pastures with bushes, etc. from

Annex 1 of the Biodiversity Act; An assessment of the combined impacts of Hydroelectric facilities on ecosystems and the ecological status of rivers has been made; A critical assessment was made of 12 selected Botanically important areas in the Bulgarian section of the Danube River; Natural habitats in the marble alpine and subalpine part of Pirin National Park are mapped according to EUNIS; Two new natural habitats from Annex 1 of the DH (8150 and 8160*) have been identified, describing their main ecological and floristic characteristics species; Participation in the creation of 2 databases, WetVegEurope (375212 descriptions of aquatic, wetland and wetland vegetation types from 33 European countries) and the Balkan Vegetation Database (9589 descriptions from 6 countries).

5. Notes and recommendations

Some inconsistencies in the CV data and a number of technical errors in the prepared documents have been identified. A careful re-examination of the voluminous documentation by the candidate would help them to be removed. I believe that the report on the contributions is quite detailed and has been made for each of the publications. In my opinion, it would be better if it was given in more general terms, by thematic groups.

Nevertheless, I believe that the inaccuracies do not diminish the significance of the research conducted by Assoc. Prof. Tzonev and do not negatively affect my impressions of the importance of his research and the implementation of national requirements for the position of "Professor".

6. Question

What are the candidate's future research plans regarding the new academic position?

7. Conclusion

Based on the materials submitted by Assoc. Prof. Rosen Tzonev, I am convinced that it fully meets, and in some respects exceeds the national criteria for holding the academic position "Professor", defined by the Act for the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its implementation and the Regulations for the development of the academic staff of Sofia University “St. Kliment Ohridski”. The colleague is a recognizable scientist at European level with clearly defined scientific profile, fully dedicated to his work and with significant scientific and applied contributions, as well as a lecturer with indisputable qualities. The field in which he works is very relevant, with great scientific and applied interest. My impressions are that Assoc. Prof. Rosen Tsonev is an exceptional professional, correct and

able-bodied scientist and lecturer. His contributions related to the conservation of plant diversity in Bulgaria and Europe are enviable.

In conclusion, I strongly recommend to the members of the Scientific Jury to support the selection of Assoc. Prof. Rosen Tzonev to the academic position "Professor" in the professional field 4.3. Biological sciences (Ecology and protection of ecosystems – Phytoecology), for the needs of the department "Ecology and protection of the natural environment" of BF of Sofia University "St. Kliment Ohridski".

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Sofia (Prof. S. Bancheva, PhD)