

REVIEW

On the submitted materials for participation in the competition for the academic title "Professor" in Professional direction 4.3 Biological sciences (Ecology and protection of ecosystems - Phytoecology) for the needs of the Faculty of Biology, announced in SG, issue 88, 13.10. 2020

Candidate in the competition: Assoc. Prof. Dr. Rosen Todorov Tsonev

Review: Prof. Dr. Mariyana Ivanova Lyubenova, Professional field 4.3 Biological Sciences, (Ecology and Ecosystem Protection), member of the Scientific Jury, determined by order № RD-38-569 / 03.12. 2020

1. Brief biographical information

Rosen Tsonev was born on January 29, 1973 in the city of Pleven. He graduated with a Master's degree in Ecology at Sofia University, Department of Ecology and Environmental Protection (EPPD) in 1998 with excellent results. The thesis was " Flora and vegetation ecological analysis of Pleven Heights and adjacent valley of the river Vit", with supervisor Prof. Dr. Ivan Bondev. In 2002, he defended a PHD thesis "Flora and vegetation in the Middle Danube Plain between the valleys of the rivers Vit and Studena" at the Department of Botany. In the same year, he was appointed as an assistant at the EPPD, Faculty of Biology, Sofia University, successively holding the positions of senior assistant (2004-2006), chief assistant (2006-2011) and associate professor (since 2011). For the period 2000-2004, he completed a post-doctoral specialization in the field of phytocenology at the University of Masaryk, Brno.

Assoc. Prof. R. Tsonev has 18 years and 1 month of experience as a lecturer at Sofia University, during this time he achieved remarkable scientific results related to classification, mapping and characterization of regional features of plant communities and natural habitats (NH) from NATURA 2000, with modeling of the potential spread of NH through existing databases. His scientific activity is also related to the conservation-significant plant species and animals, communities and NH, with the assessment of favorable conservation status (FCS) of higher plants, mosses and NH in Bulgaria. R. Tsonev is one of the authors of a Guide for determining habitats of European importance in Bulgaria. He participated in mapping of the NH, plant communities in protected areas and protected zones preparation. He is one of the authors of algorithms for determining the NH potential spread, as well as leading the team that , developed the criteria for assessment of FCS. R. Tsonev is a scientific respondent of over 30 protected zones in Bulgaria, He prepared 10 assessments for compatibility of plans, programs and projects with the subject and objectives of the NATURA 2000 protected zones. He participated in the assessment of the adequacy of the NATURA 2000 network in Bulgaria and Romania. Assoc. Prof. Tsonev is a member of 3

professional organizations: Bulgarian Botanical Society, Balkans Wildlife Association, Bulgarian Society of Phytocenology and is the Board Chairman of the last one. He is part of the editorial board of 3 scientific journals: Phytologia Balcanica (2018), Yearbook of Sofia University "St. Kliment Ohridski", Book 2 - Botany and Plant Sociology.

2. Compliance of the submitted scientific documentation with the minimum requirements for holding the academic position "Professor"

The compliance of the submitted scientific documentation on the competition with the minimum requirements by groups of indicators for academic position "Professor" according to the law for the development of the academic staff, the Regulations for its implementation and announced in the Decree of the Council of Ministers № 26 / 13.02.2019 is presented in Table 1.

Table 1.

Group of indicators	Indicator	Estimation	Points	Minimum Required points
A	1. Dissertation for the award of educational and scientific degree "Doctor"		50	50
B	4. Habilitation work - scientific publications in publications that are referenced and indexed in Web of Science and Scopus)	3Q1+2Q2+1Q3 75+40+15 IF = 12.802	110	100
G	7. Scientific publication in publications that are referenced and indexed in Web of Science and Scopus), outside the habilitation thesis	2Q2+7Q3+7Q4+2Q1 40+105+70+50 IF=13.91; SJR=1.49	265	200
	8. Published chapter of a book or collective monograph	5*15		
D	11. Cited in scientific papers, referenced and indexed in Web of Science and Scopus/ other	247*2 + 163*1=657	657	100
E	13. Leading a successfully defended PhD student	50	400	150
	14. Participation in a national scientific or educational project	27*10		
	15. Participation in an international scientific or educational project	2*20		
	19. Published university textbook	40		

Assoc. Prof. Dr. R. Tsonev is not registered with NACID, but there are no obstacles to this registration, as his scientific assets meet the required minimum in terms of number of points, which assess the quantity and quality of publications and citations, participation in projects and

teaching activity. For two of the indicators - E and D - the collected points exceed about 3 to 6 times the minimum required for the title "Professor".

3. Assessment of teaching activity of the candidate

As an associate professor in the Ecology and Environmental Protection Department, Dr. Tsonev has taught the following lecture courses from the bachelor's and master's curricula of the Faculty of Biology and the Faculty of Chemistry and Pharmacy. The courses for **bachelor degree** are 4: Protected areas and protection of biological diversity (Biomangement and sustainable development specialty - full-time education, mandatory course, 45 hours); Biogeography (Ecology and environmental protection specialty (EEPS) - full-time and part-time education, mandatory course, respectively hours 30 + 15 and 15 + 8); Methods of ecological research (EEPS - full-time and part-time education, elective course, respectively hours 8 + 4 and 4 + 2) and Fundamentals of Ecology (Ecochemistry specialty, - full-time education, mandatory course, 45 hours). The course "Environmental Legislation and Norms" was read once before 2010. The name of the specialty "Ecology and Environmental Protection" is not complete in the report. The courses for **master's degree** are also 4: Protected areas and protection of biological diversity (for Environmental protection master degree – full-time education, mandatory course, 45 hours); Phytoecology (Ecology master degree - full-time, part-time and for non-specialists, mandatory course, respectively 30 + 30 and 15 + 15 hours); Biodiversity and bioresources (Ecomangement master degree, full-time education, mandatory course, 15 hours); Protected areas and protection of biological diversity (Ecotourism master degree - part-time, mandatory, 30 hours). Assoc. Prof. Tsonev is the titular of courses: Protected areas and protection of biological diversity, Phytoecology, Methods of ecological research, Biogeography and Fundamentals of ecology. The average annual study employment of Assoc. Prof. R. Tsonev for 5 academic years (from 2014 to 2020) is respectively: total - 517.8 hours and auditorium - 386.6 hours. Assoc. Prof. R. Tsonev was a research supervisor of a total of 14 defending graduates - 13 masters and 1 bachelor as the graduates led by him after 2010 are 5 - 4 masters and 1 bachelor. He is also the scientific supervisor of four PHD students, one of which has already defended and two are in collaboration with specialists from BAS and LTU.

4. Evaluation of the scientific, applied and publishing activity of the candidate

4.1. Participation in scientific projects and scientific forums

According to the list provided by the candidate, the total number of participations in scientific and applied projects is significant - 61, as 29 projects have been completed or started after 2011 -

the habilitation of the candidate for associate professor - documents for participation are presented. The developed projects are primarily at the national level, 6 of them are international. Dr. Tsonev is a participant in those projects as an expert, and for 6 projects (20.7%) he has a leading role. Most of the developed projects are financed by OPE - 8; 5 projects - from NSF at Sofia University; 3 projects from HOLSIM AD; 3 projects - from the LIFE program. The Bulgarian-Swiss program and the SAA; respectively the FM of European Economic Area, NSF, Altera Wageningen, OP Southeastern Europe, Danube-Carpathian Program, Sofia Municipality and the Public Board of TELUS International in Bulgaria are a source of funding for 8 projects. The applied projects predominate - 22, and the scientific ones are 7. According to the reference, the candidate has scored a total of 310 points for indicator E, respectively 270 points for E14 and 40 points for E15.

Assoc. Prof. Tsonev participated in 34 conferences and congresses (held in Sofia, Ljubljana, Madrid, Bilbao, Rome, Novi Sad, Perth, Rennes, Wroclaw, Tartu, Vienna, St. Brue), where 13 posters and 21 reports were presented as Tsonev had a leading role - in 8 posters and in 15 reports he occupied 1st or 2nd place.

4.2. Characteristics of the published scientific results

According to the presented lists, the total number of publications of Assoc. Prof. Tsonev (excluding those in the dissertation) is 134: 7 books, 16 book chapters, 1 textbook, 2 handbooks, 80 articles in scientific journals, 19 articles in scientific series (mainly in The Red Book of the Republic of Bulgaria, 2015), 8 articles in conference proceedings and 1 popular science article. A total of 50 publications were presented for the competition, of which 43 publications in scientific journals, 6 books and 1 textbook, as 22 publications in scientific journals and 1 textbook meet the criteria of the Law on the Development of Academic Staff and the Regulations of its application (Art. 1a, para. 1). Two of the publications - Г7.3 и Г7.10 are not in the field of phytoecology, and for the 6 books no reviewers were specified, although they have editors. 19 publications are presented as additional, as 1 of them (D0.15) is not on the scientific topic of the competition. These publications are referenced in databases other than the WS, as indicated in the list, and three of them are not referenced - D0.5, D0.12 and D0.16. All submitted publications on the topic of the competition are included in the comments on the contributions. The papers under item B4 have been published in 3 journals: Applied Vegetation Science - 3 ; Plant Biosystems – 2; Phytocoenologia 1; those under item G7 - in 14 journals: Comptes rendus

de l'Academie bulgare des Sciences, Silva Balcanica, Acta zool. bulg. – 3; Bulgarian Journal of Agricultural Science -2; Acta Oecologica, IOP Conference Series Earth and Environmental Science, Turkish Journal of Zoology, Hacquetia – 3; Journal of Ecology, Phytocoenologia, Applied Vegetation Science, Botanica Serbica, Acta Bot. Croat, Forestry Ideas. Additional publications are published mainly in Phytologia Balcanica – 11; also Historia naturalis bulgarica and Journal of Balkan Ecology. The total IF and SJR are 32.744 and 1.49, respectively; H-index: 9 (Scopus) and 17 (Google Scholar).

4.3. Reflection of the candidate's scientific publications in the literature

Dr. Tsonev presented 430 citations - 247 in Scopus and Web of Science referenced publications and 163 - in other sources. From the presented list of citations, it is evident that 53% of the scientific works of Dr. R. Tsonev (71) are cited. The average number of citations per publication is nine. The most cited publications are Tzonev, Dimitrov, Roussakova (2009) - 57 times; Tzonev et al. (2006) - 34 times; Tzonev, Dimitrov, Roussakova (2005) - 26 times and Douda et al. (2016) - 26 times.

4.4. Scientific and scientific-applied contributions of the candidate

The inventory and classification of vegetation cover in Bulgaria according to Brown-Blanke is of fundamental scientific and practical importance for the implementation of the European nature policy and practice in Bulgaria - protection of biodiversity and natural habitats. The classifications of natural habitats are based on the classification schemes of plant syntaxons. In this regard, Assoc. Prof. R. Tsonev is one of the pioneers-researchers of the diversity of vegetation in the country according to the method of Brown-Blanke and has significant contributions.

Dr. Tsonev has formulated 3 groups of scientific-fundamental and a group of scientific-applied contributions, which I generally accept. The scientific-fundamental contributions are 23 in number in three areas - phytocenology (diversity of Bulgarian vegetation - syntaxonomic revision and inventory, study of the relationship with vegetation in the Balkans and Europe), ecology of syntaxons and floristics, but the main contributions are in the field of phytocenology – 15. Scientific - applied contributions are 14 in number and refer to typology and classification of natural habitats, protection of flora and vegetation, etc. The candidate has indicated 4 more contributions concerning zoecology and mycology, which I do not accept because they do not

apply to the thematic area of the announced competition The competition was announced in the scientific field "Ecology and protection of ecosystems" with the extension "Phytoecology".

I. Scientific-fundamental contributions related to phytocenology - revision and inventory of syntaxons - 15 contributions in 19 publications: B4.1, B4.2, B4.3, B4.4, B4.5, B4.6; D7.2, D7.12, D7.13, D7.14, D7.15, D7.16, D7.17, D7.18, D8.1, D0.1, D0.2, D0.3, D0. 18.

The contributions from this group are original and confirmatory; **11 new for science associations and 2 unions have been published, as well as 12 new for Bulgaria associations, 3 sub-associations, 4 unions and 1 order.**

Contributions include: **1)** revision of the communities of *Fagus sylvatica* L. in Europe and Asia Minor (2 unions with 15 sub-unions are proposed); **2)** revision of coastal grass vegetation in Europe (7 types of communities identified and 18 unions were proposed), **3)** standardized classification of coastal dune vegetation and revision of the class *Ammophiletea* by EuroVegChecklist; **4)** complete classification of marsh vegetation (*Phragmito-Magnocaricetea*) in Europe has been made - new for science union and 4 associations have been identified; **5)** classification of oak forests in Bulgaria (proposed 19 associations and sub-associations and two communities, of which 1 union, 6 associations and 3 sub-associations are new for science); **6)** classification of *Castanea sativa* Mill forests in Bulgaria (ass. *Tilieto tomentosae-Castanetum sativae* was confirmed); **7)** classification of *Pinus nigra* ssp. *Pallasiana* forests (classes *Quercetea pubescentis* and *Erico-Pinetea* were confirmed, new for science ass. *Junipero deltoidi-Pineteum pallasianae* and *Lathyro laxiflori-Pinetum pallasianae* and new for Bulgaria ass. *Seslerio latifoliae-Pinetum nigrae* were identified); **8)** revision of floodplain and alder forests in Bulgaria (5 unions and 30 associations were proposed); **9)** classification of serpentinite communities in Bulgaria (new for Bulgaria union *Alysson heldreichii Bergmeier* et al. 2009 and new for science ass. *Onosmo pavlovae-Festucetum dalmaticae* were identified); **10)** classification of the riparian vegetation in the Middle Danube Plain (new for the Bulgaria and for the Balkan Peninsula *Angelicion littoralis* union, also 1 new for science and 1 new for Bulgaria association); **11)** classification and mapping of *Genista lydia* Boiss. communities - new for science *Genistion lydiae* union and 3 associations; proposed change in the distribution area of *Lavandulo stoechadis-Hypericetalia olympici* Mucina in Mucina et al. 2016 and the class *Cisto-Lavanduletea stoechadis* Br.-Bl. in Br.-Bl. et al. 1940; **12)** classification of forests in Etropole Mountain; **13)** the wet meadows in Ranislavtsi, Kostinbrod have been studied - the names of 9 new associations and sub-associations have been validated, three new associations for Bulgaria - *Junco effusi-Molinietum caeruleae*, *Deschampsietum cespitosae* and *Caricetum acutiformis* were identified); **14)** classification of macrophytic vegetation in NR Srebarna - 3 classes, 10 unions and 27 associations were identified; **15)** studies of the weed vegetation in rice crops - new *Phragmito-Magnocaricetea*, order, union and association established for Bulgarian vegetation.

II. Scientific-fundamental contributions in the field of floristics - 3 contributions in 6 publications: D7.15, D0.8, D0.9, D0.10, D0.11, D0.13.

The contributions to this group are confirmatory and original.

The following have been identified: 4 new species for the flora of Bulgaria - *Heteranthera reniformis* and *Rotala ramosior*, *Ranunculus paludosus* and *Erodium botrys*; new localities for 10 species, of which 6 with conservation significance - *Himantoglossum caprinum*, *Spiranthes spiralis*, *Ophrys apifera*, *Potentilla emili-poppii*, *Echium russicum*, *Lindernia procumbens*; The distribution of *Hyacinthella leucophaea* subsp. *atchleyi*; the presence of *Circaea alpina* in the Bulgarian flora has been confirmed.

III. Scientific - fundamental contributions to the ecology of plant syntaxons - 5 original contributions in 5 publications: B4.1, B4.4; D7.7, D7.11, D7.16.

The following are studied: the main factors for the richness of the flora in the Eastern Balkans; the type of relationship between species richness and productivity of 694 dry grass communities. Based on ecological and geographical groups, a multidimensional classification of basophilic beech forests has been proposed. The main ecological and floristic gradients for the oak vegetation in Bulgaria have been established. The peculiarities of the ecological and floristic structure of the communities of *Genista lydia* Boiss have been studied.

IV. Contributions of scientific and applied nature - 13 original contributions in 14 publications: D7.4, D7.5, D7.6, D7.8, D7.9, D7.13, D7.18, D8.2, D8.3, D8.4, D8.5, D0.6, D0.18, D0.20.

1) Inclusion of descriptions of black pine forests in the European database: CircumMed Pine Forest; 2) The proposed classification of floodplain forests and alder communities provides the scientific basis for improving the NH classification schemes; 3) The birch forests in the protected area "Bachishte" was characterized; 4) The European Red List of NH has been published and their risk of extinction was assessed; 5) Habitat F3.1d Balkan-Anatolian submontane genistoid scrub was revised and promoted to the European Red List; 6) Mapping and assessment of the conservation status of 10 non-mountain habitats in Ponor protected zone; 7) Publication of Manual of NH with conservation significance in Strandzha Natural Park; 8) Publication of NH Manual from Annex 1 of Biodiversity Low - pastures, meadows, pastures with bushes, etc .; 9) Critical assessment of 12 selected biological important places in the Bulgarian section of Danube River; 10) The possibilities for creation of fodder crops from *Trifolium subterraneum* have been studied, 11) A revision of the policies for application of conservation grazing in National and Natural Parks in Bulgaria has been proposed in application of sub-measure "Pastoralism" under the Rural Development Program; 12) Assessment of the supporting ecosystem services provided by the agro-ecosystems in Bulgaria has been made for the first time; 13) Ecological approach has been proposed for the development of freshwater fish farms in the protected areas of the ecological network of

NATURA 2000 in Bulgaria for the first time; **14)** Assessment of the combined impacts of Hydropower plants on ecosystems and the ecological status of rivers has been made.

5. Assessment of the personal participation and personal contributions

In 60% of the scientific production presented for the competition, Assoc. Prof. R. Tsonev is a leading author - first or second place, for scientific publications at B4 and G7 - in 50% of the publications. He is also a leading author in 4 of the 7 published books. In 81.7% of the cited publications, R. Tsonev is the first or second author. The evaluations show a clear leading role of the candidate in the published results and that the listed contributions are primarily his personal work.

6. Critical remarks and recommendations

They concern the presence of some omissions or inaccuracies in the documentation provided, as well as an insufficient clarity of some lists. The contributions indicated by the applicant by groups are not sufficiently differentiated.

7. Personal impressions

I know R. Tsonev in his capacity first of all as a student and graduate at the Ecology and Environmental Protection Department, as well as a PHD student at the Department of Botany, Sofia University, then as assistant and associate professor in the Ecology and Environmental Protection Department. My personal impressions are that he is an exceptional workaholic, when it comes to studying flora and vegetation, habitats, protected areas and zones. A specialist, who has turned his hobby into a profession. He is a professional in the scientific fields: phytocenology, ecology and protection of the natural environment and floristics. He is a sought-after expert in the preparation of ecological assessments, maps, and other practical issues related to conservation-significant species, habitats, protected areas and zones.

8. Conclusion

Assoc. Prof. Dr. R. Tsonev is an established specialist in the scientific fields of plant ecology, protection of flora and vegetation. His scientific works are widely popular in ours and European literature. According to the scientific and metric indicators, the presented materials meet the criteria for holding the academic position "Professor". My recommendation to the esteemed members of the Scientific Jury is to support the award of the academic title "Professor" to Dr. Rosen Todorov Tsonev on PD 4.3 Biological Sciences, scientific specialty "Ecology and Ecosystem Protection (Plant Ecology)".

Date: 02.02.2021

Reviewer: