

R E V I E W
from Prof. Marin Roussev PhD,
SU "St. Kl. Ohridski", Faculty of Geology and Geography,
Department of Regional and Political Geography on a
dissertation work for awarding the
educational and scientific degree PhD

PROFESSIONAL FIELD	4.4. Earth Sciences
PHD PROGRAMME	Economic and Social Geography
AUTHOR	Katrin Evgenieva Gottsova
TOPIC	Regional analysis of the distribution of infectious diseases of farm animals in the southern border areas of Bulgaria
SUPERVISOR	Assoc. Prof. Kosyo Stoychev PhD

PHD STUDENT AND PROCEDURE DATA

PhD student Katrin Gottsova is a graduated young specialist with a master's degree in veterinary medicine, which has been practicing in one of the veterinary clinics in Bulgaria for 5 years. In my opinion, the scientific interest she has shown in geographic science in her quest to improve at the doctoral level at the Faculty of Geology and Geography of SU "Kliment Ohridski", Department of Regional and Political Geography should be seen as a sign of conclusions in several main directions. Above all, it is a challenge she confidently accepts, notwithstanding the potential barriers of a methodological nature, apparent even at an early stage and difficult to overcome, arising from the attempt to move from one to an entirely different specific field of scientific knowledge. Secondly, this is a kind of positive assessment of the potential of the university geography and more specifically - of the research opportunities offered by the Geological and Geographical Faculty, respectively one of its departments - Regional and Political Geography. An important logistical role in this is played by the sensitivity of her supervisor in terms of the trust shown to the combination between PHD student and thesis. The benefit for the development of geographical science in Bulgaria is also so obvious.

Katrin Gottsova was born in 1993. She graduated from the National Natural and Mathematical High School “Acad. L. Chakalov”, Sofia – profile “Biology”. She received his Master's degree in Veterinary Medicine from the University of Forestry in 2018. In 2019 she is enrolled as a PhD student at the Department of Regional and Political Geography, Faculty of Geology and Geography, SU “St. Kl. Ohridski” with Rector's Order RD-20-141/ 18.01.2019. She was discharged in 2022 (RD-20-446/ 17.02.2022).

The procedure for the *défense* of the dissertation begins with the proposals for enrollment and the draft composition of the Scientific Jury at the meeting of the Extended Departmental Council of the Department of Regional and Political Geography held on 23.01.2023 (Rector's Order RD 38-630/ 01.12.2022). They have been confirmed by the decision of the Faculty of Geology and Geography of 31.01.2023 and Rector's Order RD 38-70/ 07.02.2023.

This review is based on the decision of the First Meeting of the Scientific Jury held on 13.02.2023.

There were no procedural violations related to the organization of the defense of PhD student Katrin Gottsova. The documents and materials submitted by her comply with the approved normative documents.

GENERAL CHARACTERISTICS OF THE DISSERTATION, CRITICAL NOTES, RECOMMENDATIONS AND CONTRIBUTIONS

The research thesis of PhD student Gottsova is presented in a volume of 212 pages, and it should be taken into account that in relation to standard pages, they are actually about 15-20% more. The author provides us with literature containing 110 titles of publications, the majority of which (98) are in Latin, as well as 16 Internet sources. The designation of the main sources is incomplete. More correct and representative from a scientific point of view is their citation in the text itself, as well as additional information, represented by a slash. Authors of studies on the above-mentioned or related topics, who are representatives of neighbouring or other Balkan countries, seem to remain more inconspicuous.

Separately, 4 cartograms are appended at the end of the book body, which are carriers of important information on the subject, but their legends lack important details that could effectively compare quantitatively and qualitatively administrative districts on specific indicators. They also need to be specifically linked to the text.

The topicality of the dissertation is undeniable because it concerns the spatial aspects (including transboundary) of adverse phenomena for our country with significant real and potential economic, political, social, environmental and other consequences.

I find it unnecessary to fix in the title only the southern border territories of Bulgaria, as in reality the PhD student manages to successfully convey to us a diffuse cross-border spatial nature of the investigated infectious processes with a much broader scope, affecting many of the vectors of our Balkan geographical situation. In the above, I am only incorporating a broader conceptual aspect and I do not think that it would necessitate any modifications to the structure of our thesis as thus proposed. It is in a very well-chosen logical coherence both in relation to its main subject matter and to the sequential object representation of processes and phenomena at global, continental, Balkan and national (including intra-regional) scales.

The exposition is richly illustrated with 60 tables, diagrams, charts and map schemes. Some of the tables have a predominantly schematic content and their substance could be illustrated through more effective approaches. The informative part of some of the figures is hampered by inappropriately chosen format or size of characters and fonts.

The introduction is relevant to the working hypothesis, but it is necessary to distinguish a little more clearly the nature of the texts declaring the object and the subject of the study. The constitutive (analytical) part of the formulated tasks should correspond more closely to the Balkan and Bulgarian (including cross-border) emphases of the research - something that is actually done in the

research itself, but is rather vaguely stated in the tasks defined here. There is only a partial mention of Bulgaria in the last of these, concerning measures the author considers advisable, but this is not enough to clarify the conceptual essence of the thesis.

The first chapter is titled "*Theoretical Foundations of the Regional Study of Disease Diffusion*", in which Catherine Gottsova makes a successful attempt to present some fundamental foundations of medical geography with an emphasis on its veterinary part. In many respects it can be taken not so much as more important as more complex in terms of scientific synthesis, and this - albeit tentatively - makes it more difficult to do. Here it must be acknowledged that the PhD student has done a successful job. A particularly important contribution to Bulgarian geographic science is the part that clarifies the nature of epizootiology and its relevance in the study of processes related to the spread of diseases among animals and the experience gained in the use of scientifically based mechanisms for social counteraction. To this must also be added the thorough presentation of qualitative and quantitative methods here, which largely compensates for the fragmentary listing of general scientific and geographical methods in the introduction. An attempt is made to draw out the importance of the geographical environment and its specific parameters in order to apply differentiated approaches in counter-infection policies. A high degree of familiarity with spatial diffusion theory and regional research methods is demonstrated.

In the second chapter ("Factors and conditions for the spread of diseases in farm animals"), mainly some essential veterinary aspects of the studied problem are clarified, but due attention is also paid to its diffuse nature, and among the leading elements of the epizootic process a special place is given to the (geographical) environment. Thus, in practice, through its spatial interpretation, the role of the geographical factor is highlighted. The description of some mechanisms of prevention and complex counteraction of epizootic spread of diseases is of useful value here.

In the third chapter (*"Analysis and trends of the geographical distribution of selected infectious diseases in farm animals"*), the author has investigated the spatial diffusion aspects in relation to three key examples concerning important animal disease distributions, such as African swine fever; bovine nodular dermatitis and Blue tongue in ruminants. Important for the social science geography block here is the analysis of the economic, political, social and ecological effects that cause the spread of diseases and the mechanisms of prevention against them. This chapter has the most pronounced spatial character and the most significant practical-applied value. It presents the leading role of the anthropogenic factor as a consequence of various dynamically acting global and regional processes.

The conclusion is in effect like a review repeating the enumeration of the structural highlights of the study. Only some of the texts concerning the third chapter can be taken as fragmentary elements of an analytical summary with main conclusions from the closely interrelated three main parts of the thesis. This is to a much higher degree substantively fulfilled by the conclusions presented at the end of the individual structural elements (1.3., 2.5., 3.1.4. and 3.2.4.), but in my opinion the development needs a unified, analytically summarizing place where the main results of the dissertation are concisely and clearly reflected.

Directly related to the above is the author's reference for the scientific contributions in the thesis. I accept them as correctly defined, but I believe that an authorial contribution can be formulated related to enriching the palette of applicable methods in Bulgarian medical geography. The key words for this can be sought in section 1.1.5 and their respective projections in chapter three.

In the form of a recommendation, I would like to point out that it is necessary to clarify the objective nature, degree of synonymy and integrative

convertibility in the use of the concepts of "*rural husbandry*" and "*agriculture*". From my point of view, '*agriculture*'/'*agricultural*' - in the sense of its broader interpretation as a specificity of activity - is more acceptable as opposed to '*rural husbandry*' as a specificity of place.

CONCLUSION

The peer-reviewed study deals with topical issues and has undeniable contributions. It is distinguished by the independence of the creative efforts, authenticity, high methodological and practical-applied value. It can be a useful basis for further research in the mentioned thematic area.

This gives me grounds to propose to the Honorable Scientific Jury to award to PhD student Katrin Evgenieva Gottsova the educational and scientific degree "PhD", for which I will vote "FOR".

Sofia,
26. 04. 2023

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