

ACADEMIC STATEMENT

ON A THESIS FOR AWARDING THE EDUCATIONAL AND SCIENTIFIC DEGREE "DOCTOR OF PHILOSOPHY" IN SCIENTIFIC SPECIALTY "ANTHROPOLOGY" 01.06.01

AUTHOR OF THE THESIS: BOYAN VALENTINOV KIRILOV

**THE THESIS TITLE: „BASIC ANTHROPOLOGICAL SIGNS AND ERUPTION
OF PERMANENT TEETH IN CHILDREN AND ADOLESCENTS
AGED 5-12 YEARS”**

STATEMENT FROM PROF. NIKOLAI ELENKOV LAZAROV, MD, PhD, DSc

Boyan Valentinov Kirilov is a regular PhD student on a full-time basis (enrolled with order No. ПД-15 – 7/29.01.2020) at the department “Anthropology and Anatomy” of the Institute of Experimental Morphology, Pathology and Anthropology with Museum to the Bulgarian Academy of Sciences (IEMPAM-BAS), where he conducted the main part of the experiments in this dissertation. After completing the individual training plan, according to the Regulations of the BAS Training Center, including gaining the required number (379) of credits under the educational and scientific program, and successfully passing exams for doctoral minimum in the scientific specialty “Anthropology” and English as a foreign language, he was expelled by the Science Council of the IEMPAM-BAS (with order No. ПД-15 – 116/27.11.2023) with the right of a public defense of his thesis before a scientific jury.

The dissertation entitled "*Basic anthropological signs and eruption of permanent teeth in children and adolescents aged 5-12 years*" is written on 134 pages and is illustrated with 25 tables and 28 figures. The included figures are line graphs and bar charts, displaying the data obtained from the evaluated parameters (signs and indices) in the study subjects. The bibliography includes 165 titles, 41 of which are in Cyrillic and 124 in the Latin alphabet.

The topic of the dissertation is adequately chosen. It is dedicated to an extremely topical and significant problem of physical anthropology. i.e. the anthropological characterization of the physical development and dental status of children and adolescents. In recent years, increasing attention has been paid to dental health as an important factor for normal child growth and development. In this respect, the PhD candidate has set himself the ambitious goal of investigating the specifics of physical development during middle childhood with an emphasis on the eruption of permanent teeth as a prerequisite for building a healthy young generation in our country.

Over the course of three years, a large contingent of individuals was studied, including a total of 709 children and adolescents aged 5 to 12, divided by gender into two approximately equal groups – 361 boys and 348 girls. The study was conducted in accordance with the Declaration of Helsinki on the ethical principles for medical research involving human subjects and in accordance with Bulgarian legislation, and its design was approved by the Ethics Committee of the IEMPAM-BAS. There was necessary informed consent from the parents and study participants. A transversal anthropological study was conducted according to a standardized program, including filling out an individual questionnaire and an anthropological sheet with the studied parameters. Nine cephalometric signs and two indices characterizing the morphological maxillofacial features of the studied individuals were considered, as well as the somatometric signs like height, weight and body mass index, as well as odontoscope signs such as bite type and dental status (eruption and pathology of the teeth). Classical cephalometry was used for anthropometric studies, and the dental status of the children was recorded by direct odontoscopic examination. During the study, differences in the facial shape between the two sexes were found, expressed in taller and wider faces, and a more massive lower jaw in boys, with an earlier growth spurt in boys between 6 and 7 years of age. Similar age dynamics were observed in the height and weight of the children studied, with the ratio between their growth being inversely related between the two sexes. The assessment of their physical fitness has shown similarity in this indicator in children of both sexes at preschool age, but adolescent girls had a greater body mass, and boys at this age showed a more pronounced tendency to be overweight. It has been found that during the studied age period, permanent teeth erupted earlier in girls, but this percentage was relatively higher in overweight children of both sexes. The detailed orthodontic examination has established that usually the teeth of the lower jaw erupt earlier than those of the upper one. Finally, a positive correlation has been established between the development and eruption of permanent teeth, the development of the facial part of the skull and the morpho-functional maturity of children, which was more pronounced in girls than in boys. In this regard, the results of the present study have important applied significance in dental and orthodontic practice for diagnosing developmental disturbances of the teeth, as well as in preparing specific clinical and therapeutic plans for effective treatment. The author's findings are also of certain practical interest for forensic medicine in identifying bone remains and determining the age of a given individual.

The discussion section is well written, follows the result description and shows the author's enviable skill in interpreting findings, comparing them with known facts in the relevant literature and integrating complex data to adequately draw important practical conclusions. In my opinion, the dissertation would have acquired more valuable form with a concluding section or at least a paragraph summarizing the results of the study and outlining the future research directions on the topic.

Analyzing the results obtained, Kirilov drew the main conclusions from the study. They are written concisely and accurately reflect the author's findings, their interpretation and the conclusions drawn from the new data obtained in this study. The most significant contributions of the PhD candidate are presented in a separate section. Most of them possess an original character and are divided into contributions of a theoretical and practical nature.

There is no doubt that the current thesis is a personal work of Boyan Kirilov. An undisputable proof for this assumption are his scientific publications and communications on the topic of the dissertation, since in all of them he is a sole author or the first co-author along with his thesis supervisor and advisor. All articles are published in referred journals, three of which have an impact factor or impact rank and are positioned in the Q2, Q3 and Q4 quartiles of the journal ranking, respectively. I am not aware of any citations of these works in scientific journals, but the Scopus reference shows that three documents by this author have been cited once and that he has a personal h-index = 1. Related to the thesis topic, a list with three communications in scientific events with international participation, two of which in national and one in an event abroad, is also provided.

The thesis abstract adequately and sufficiently reflects the current state of the problem, the purpose and objectives of the study, the methods used for its implementation, the results obtained, their analytical description and interpretation of their own data, as well as the author's conclusions and contributions.

In conclusion, I found the dissertation of Boyan Kirilov for a complex, extensive and in-depth study on an topical and significant problem of physical anthropology, specifically anthropological characterization of physical development during middle childhood. It is well thought out and precisely methodically justified, conducted very accurately and illustrated adequately. The results of the study make an original theoretical and applied contribution elucidating the age- and sex-related characteristics of the physical development and dental status of children and adolescents. All the above-mentioned reasons convince me to express a positive opinion for the thesis and as a member of the Scientific Jury to support with a positive vote the award of the educational and scientific degree "*Doctor of Philosophy (PhD)*" in the professional field 4.3. Biological sciences and the scientific specialty "Anthropology" 01.06.01 to Boyan Valentinov Kirilov.

20.10.2025
Sofia

Prepared the standpoint: 
(Prof. Nikolai Lazarov, MD, PhD, DSc)