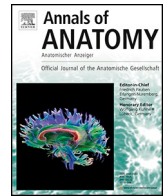


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In memoriam Prof. Dr. Michail S. Davidoff

Michail Davidoff was born into a German-Bulgarian family on July 18, 1940 in Sofia, as the son of Prof. Dr. med. Dr. med. dent. Slavtsho M. Davidoff, Professor of Dental, Oral and Maxillofacial Surgery, and his German wife Irmgard, née Fischer.

Being the son of an academic he was refused to study medicine in Sofia in the late fifties, so he became an athlete. His strong body put a shot farther than anyone expected. After very successful training, he matured into an elite athlete with admired success in shot-put. By this he matched Bulgarian society at that time and was now allowed to study medicine since 1960.

Thanks to his modest and prudent personality, he quickly found a mentor in Prof. Dr. Georgi P. Galabov (1918–1982), the head of the Department of Anatomy in Sofia, who supported him and let him qualify.

As a student he had already been allowed to work in the scientific labs of the institute. After completing his medical studies he obtained the position of a research assistant at the Institute for Regeneration Research of the Bulgarian Academy of Sciences and in addition he became an assistant lecturer at the Department of Anatomy, Histology and Embryology at the University of Sofia.

In 1968, Prof. Galabov arranged for him further specialty training with Prof. Dr. Theodor-Heinrich Schiebler, the director of the Institute of Anatomy in Würzburg. With this anatomical institute, intensive international relations existed for decades: the Nestor of Bulgarian anatomists, Prof. Dr. Dimitri Kadanoff (1900–1982) had studied in Würzburg since 1919 and, after his medical state exam and his doctorate in 1925, he worked as an assistant and from 1929 to 1933 as a prosector in Würzburg.

In 1969, Michail Davidoff started his advanced training at the Institute of Anatomy at the University of Würzburg. This stay was a great pleasure for him since he was familiar with the German language and culture through his parents. His mother came from Hamburg-Eppendorf and his father spent 16 years in Berlin and Leipzig where he studied and worked and also finalized his “Habilitation”. Hence, Michail Davidoff had no difficulty to settle in Germany and to deliver his anatomy teaching in German.

In Sofia, Michail Davidoff had begun detailed studies of the central nervous system. Using histological, histochemical and electron microscopic techniques, he investigated the vegetative centers of the hypothalamus and spinal cord. He succeeded in discovering cell systems of the vegetative network of the thoracic spinal cord and describing them in great detail regarding structure and histochemistry in the guinea pig. Furthermore, based on immunohistochemistry findings, he unveiled the co-existence of several neuroactive substances in many structures of the central nervous system and could deduct new functional concepts. His

morphological and functional investigations of regenerative capacity in central nervous system damage laid the groundwork for a new understanding of these processes. In this context, his main focus of interest were structures of the intrinsic apparatus of the spinal cord where he discovered new pathways and identified neuronal contacts.

In Würzburg he had the opportunity to generate a detailed description of the guinea pig placenta based on enzyme histochemistry and electron microscopy. Here, he was able to demonstrate specific areas in the syncytiotrophoblast for steroidogenesis, carbohydrate metabolism and protein synthesis as well as for embryo-maternal transport. In addition, regional differences in metabolic processes were described in kidney, liver, adrenal gland and other organs, enabling a new functional classification of the structural units of these organs. This work was accomplished in close collaboration with fellow scientist Dr. Peter Kaufmann, leading to an inspiring lifelong friendship.

His first time in Würzburg was such a scientific success that it prompted Michail Davidoff to be invited 5 times for a total of 5 years between 1972 and 1983 to Würzburg as a guest scientist, lecturer and professor.

In his fine responsible manner, Michail Davidoff was always concerned to share his latest findings with his colleagues in Bulgaria and to let them partake in his successes.

During innumerable symposia and discussions in the institutes there, he made a significant contribution in communicating new methods and research results. He encouraged Bulgarian scientists to pursue their own research thereby promoting the scientific achievements of the Bulgarian anatomy.

This was much valued by the Bulgarians who elected him to be a member of their various scientific societies and appointed him a member of the Bulgarian Academy of Sciences and deputy director of the Institute of Cell Biology and Morphology in Sofia. Being elected as a member of the German National Academy of Sciences Leopoldina, he represented Bulgaria and ultimately followed the steps of his famous predecessor Prof. Dr. Dimitri Kadanoff.

Over decades, Michail Davidoff’s talks at national Bulgarian scientific meetings were highly appreciated.

A new perspective for his life arose with an invitation to a temporary professorship at the Institute of Anatomy of the University of Hamburg when the chair, Prof. Dr. Adolf-Friedrich Holstein, was elected for two years as Deputy Medical Director of the University Hospital Hamburg-Eppendorf and Dean of the Medical Faculty.

After several terms as a guest scientist in 1985/86, 1986/87 and 1988/89, Michail Davidoff had the opportunity to take up a permanent position in Hamburg. In 1993, after several visits in the meantime, he was appointed C3 professor for anatomy and Deputy Chair of the

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Department of Microscopic Anatomy at the Institute of Anatomy at the University of Hamburg.

When he then came into contact with the focus of the Department of Microscopic Anatomy headed by Holstein, male reproduction, a fascinating connection suddenly emerged between his original field of work on the central nervous system and the research of this working group on spermatogenesis in the testis.

The use of modern immunohistochemical and molecular biological methods available here led to entirely new and groundbreaking findings. Michail Davidoff adopted topics from the Hamburg anatomists and pursued them together with Wolfgang Schulze, Ralf Middendorff, Dieter Müller, Süleyman Ergün and others and found that the hormone-producing Leydig cells in the testis are neuroendocrine cells and can arise from the pericytes of the capillaries within the interstitium of the testis by transdifferentiation: Pericytes were unveiled to be the ubiquitous adult stem cells. This finding enabled an entirely new appraisal of the function of Leydig cells as a regulatory system for sperm formation.

With his professorship at the Institute of Anatomy at the University of Hamburg, Michail Davidoff had completed his academic career. He was happy here and found the freedom and research opportunities that were not available to him in his home country. Here he was able to train young scientists and doctoral students and achieve scientific success. His thorough way of working was embraced with great gratitude by the Hamburg lab. Michail Davidoff taught many students in Hamburg in lectures and courses on macroscopic anatomy, cytology, histology, microscopic anatomy, embryology and neuroanatomy and all were impressed by his knowledge and diligence in presenting. He has published more than 200 scientific articles in leading international journals of his field. He was elected to the board of the Anatomical Society for the period from 1999 to 2002 and chaired the 96th Meeting of the Anatomical Society in Münster in 2001.

He retired in 2005, but continued to work on stem cell topics out of an office at the Medical History Museum Hamburg at the University Hospital Hamburg-Eppendorf and was able to complete the monograph "The Neuroendocrine Leydig Cells and their Stem Cell Progenitors, the Pericytes" with the participation of Dieter Müller, Ralf Middendorff and Adolf-Friedrich Holstein.

His private life was marked by difficulties resulting from his changing professional locations in Bulgaria and Germany and by dire strokes of fate. His second wife Angelina, née Nicolai, passed away

unexpectedly of a cerebral hemorrhage while visiting him in Hamburg. Their son Slavi also died far too early in 2020 from a tumor. A grandson, Nikolai, still lives in Sofia. Balancing between Hamburg and Sofia was very exciting for Michail Davidoff, but it also meant an enormous burden partly relieved by daily contacts with close friends and family members in Bulgaria.

The research focus on reproductive medicine at the Anatomical Institute in Hamburg was expanded and strengthened by Michail Davidoff. He significantly contributed to the international scientific reputation of the Anatomical Institute of the University Hospital Hamburg-Eppendorf. For this, he deserves the highest recognition and heartfelt thanks.

It was with great sadness that we witnessed how his large athlete's heart decompensated with increasing age and, after a period of suffering borne with great dignity, was finally no longer compatible with life.

Until the end, he was able to lead his self-determined life which was of utmost importance to him. We said goodbye to each other with mutual gratitude. He died in Hamburg on June 19, 2024.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.



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