SHORT COMMUNICATION

More about Zlotnikov, the Man Who Explained Blaschko's Lines to be a Mosaic

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In 2020, *Acta Dermato-Venereologica* issued a book celebrating the journal's 100-year anniversary. Within the Centenary Theme section "Genodermatoses", the book contained a historical essay entitled "An early description of a 'human mosaic' involving the skin: a story from 1945" (1), which had been published in the *Journal of Heredity* in the USA by the Russian author M. Zlotnikov from Ivanovo State Medical Institute (2). He described a 24-year-old woman with a unilateral, systematized organoid epidermal naevus on the left side of her body (**Fig. 1**). He proposed explaining the disorder as due to a mutation that occurred "at the stage of the blastomere". He concluded that "assuming that this explanation is the most probable one, we are inclined to apply it in the present case, as it is impossible to give any other explanation to this one-sided asymmetry of mosaic mutation in our patient…" Thus, M. Zlotnikov was the first to explain the linear arrangement of a congenital human skin disorder using the concept of mosaicism, reflecting the action of a postzygotic mutation that occurred at a very early developmental stage.

Fig. 1. Systematized linear "naevus pigmentosus pilosus et mollusciformis unilateralis" described as a "human mosaic" by Zlotnikov in 1945 (2). (Reproduced with permission from the American Genetic Association, USA, and Oxford University Press, UK).

In 2020, we knew virtually nothing about "M. Zlotnikoff". Repeated inquiries sent by e-mail in 2019 to the Rectorate of Ivanovo State Medical Academy, remained unanswered. Notwithstanding, we can now report many details of his life. First, we found his full name, Professor Moisey Davidovich Zlotnikov, in the book "*A Mountain of Crumbs*", in which Elena Gorokhova (3) describes the history of her family in the Soviet Union and her own life in Leningrad during the Brezhnev era. Her mother, Galina Kuzminova, was a doctoral candidate of Professor Zlotnikov, and her noteworthy experience is described below. Secondly, one of the authors (EH) has substantial knowledge of Russian and was able to screen the sources available in the internet. Moreover, a Russian colleague generously helped our research by providing additional data (see Acknowledgement).

Moisey Davidovich Zlotnikov (**Fig. 2**) was born on 26 June 1897 in Ponevezha near Kovno, which is today Kaunas in Lithuania, into a family of a white-collar employee. He died at the age of 81 years. He worked as a surgeon in Moscow, and in August 1934 he moved to Ivanovo, where the People's Commissariat for Health appointed him to the post of Chief Physician of the Department of Surgery at Ivanovo State Medical Institute. In 1935 he received the academic title of professor and the scientific degree of candidate of medical sciences without defending a thesis (based on the whole of his works). In December of the same year, at the 1st Moscow Medical Institute he publicly defended a thesis entitled "Recklinghausen's disease" for the degree of Doctor of Medical Sciences. In 1936, the dissertation was approved by the Higher Attestation Commission. From 1934, for more than 25 years, he headed the Department of Surgery with Topographic Anatomy of Ivanovo State Medical Institute. Postgraduate studies were organized at his department from 1938. Nine PhD theses were defended under his supervision.

Zlotnikov published 8 monographs, including "Recklinghausen's disease" (1930) (4), "Periarteriitis nodosa as an allergic disease" (1934), "Primary hydrocephalus" (1935), "The great Russian surgeon N. I. Pirogov" (1950), and "Amputation of extremities" (1957). His 2-volume atlas "The human venous system" (1947) was presented to the 'Stalin's Award' (which was not awarded to him). Moreover, he published large tables

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Fig. 2. Moisey Davidovich Zlotnikov (1897–1978).

showing, in colour, the "Human venous system" and "Treatment of frostbite", which were used widely in the country's medical institutions.

Apparently, however, the Soviet secret service NKVD was well informed about Zlotnikov's publication in the *Journal of Heredity*, which had been a very dangerous act due to Stalin's ukase from 1937, which, in 1945, had brought the charlatan Lysenko to the height of his power in his effort to annihilate the Western "bourgeois" genetics of Mendelian inheritance and chromosomes, within a truly progressive Soviet Union.

In her book "*A Mountain of Crumbs*" (3), Elena Gorokhova relates that her mother Galina had been a doctoral candidate of "Professor Moisey Davidovich Zlotnikov, head of the Department of Anatomy" during her studies in Ivanovo. After 1945, she was compelled by the NKVD to spy on her thesis supervisor. During 1 year, she was forced to come every month to a secret, completely empty, apartment in Ivanovo, where she had to tell an NKVD officer what she knew about the previous and current behaviour of Dr Zlotnikov. Galina realized exactly what these interrogations meant, because one of her uncles had ended his life in the Gulag for merely telling an age-old, trivial, and inculpable well-known joke. Hence, Galina tried to relate only the most innocent and innocuous things about her advisor's conduct. She told her daughter that this was a frightening task, and that this horrible burden ended only when she married and moved to Leningrad (now Saint Petersburg).

Today we know that Dr Zlotnikov was never arrested, and that he remained a recognized academic expert during his entire life. Over and above, he was awarded with medals "For Valiant Labor in the Great Patriotic War 1941–1945" and "For the Victory over Germany in the Great Patriotic War of 1941–1945". In 1963, he moved to Ryasan (Russia), where he died in 1978.

Moisey Davidovich Zlotnikov will almost certainly become famous within the international community of investigative dermatologists and medical geneticists, and it is hoped that his name will be remembered in Ivanovo, the place of his creative professorship and of his stupendous idea of how to explain congenital linear naevi.

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