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Academicians Milutin Milanković and Vojislav Mišković: correspondence about Alfred Wegener and Wladimir Köppen

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This paper presents a part of the unpublished correspondence between Milutin Milanković and Vojislav Mišković from the period 1924 to 1930. At the beginning of the correspondence, Mišković worked in the French observatory in Nice, while Milanković was in Belgrade. They discussed the PhD thesis of Mišković, his return to Belgrade, getting him a position at the University, founding and building of the Astronomical Observatory in Belgrade, Milanković's research, publishing of his papers, his acceptance speech in the Serbian Academy of Science, his encounters with other scientists, as well as the collaboration of Milanković with Alfred Wegener and Wladimir Köppen, and other topics. With the help of Mišković, Milanković wanted to better present Wegener's and his own research in French scientific journals. Milanković was also very interested for publications of the Astronomical Observatory in Belgrade, where he had found data that he could use in his research.

Keywords: Astronomy, Earth

1 Introduction

The correspondence between Milutin Milanković and Vojislav Mišković shows the very beginnings of their cooperation related to the revolutionary theory of Milanković on the astronomical causes of the occurrence of ice ages.

Milutin Milanković (1879–1958) (Fig. 1) completed Polytechnic School in Vienna, including a doctorate in civil engineering in 1904, and after that he worked as an engineer. He came to Belgrade in 1909 by invitation and became University Professor. He taught Rational Mechanics, Celestial Mechanics and Theoretical Physics, and in

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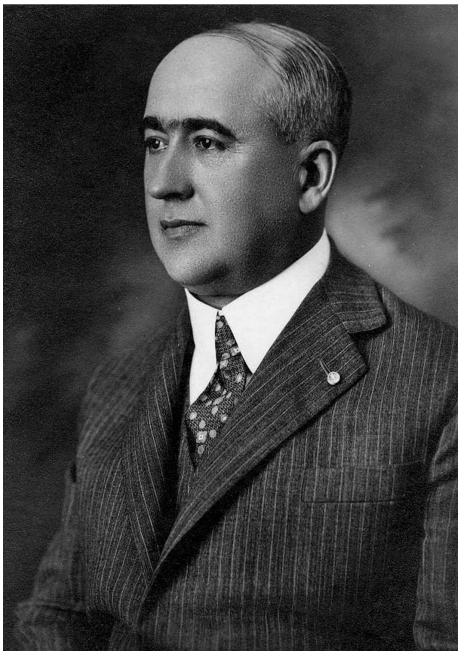


Figure 1 Milutin Milanković (1879–1958)



Figure 2 Vojislav Mišković (1892–1976)

the school year 1926/27 he was Dean of the Faculty of Philosophy (Milanković, 1952, p. 127). For a short time he was the Head of the Astronomical Observatory in Belgrade. He is remembered as the founder of modern climatology and climate modelling.

Vojislav Mišković (1892–1976) (Fig. 2) completed his university studies and doctoral degree in 1924 in France. He worked in observatories in Marseille and Nice. He was elected a member of Astronomical Society of France (Société Astronomique de France) in 1925. Following the proposal of Milanković in 1925, he was invited and appointed in Belgrade as Associate Professor of Practical Astronomy. He succeeded in raising the Observatory to the level of the most advanced European observatories of that time (Milanković, 1952) and he led it ambitiously and energetically from 1926 to 1954.

Milutin Milanković was elected corresponding member of the Royal Serbian Academy in 1920 and full member in 1924. Vojislav Mišković became corresponding member in 1929 and full member in 1939.

Milutin Milanković and Vojislav Mišković met in person in October 1923 in Belgrade (Protić-Benišek, Djokić, 1996). Their intensive correspondence started in 1924 because Milanković spent most of his time in Belgrade and Mišković in France, where he was employed from 1922 to 1925 in the observatory *Observatoire du Mont Gros* in Nice and Milanković in Belgrade.

From the completely preserved correspondence from 1924 to 1952 that contained topics from private to expert and scientific, discussions about the doctorate of Mišković, his return to Belgrade, the appointment at the University, foundation and building of the Astronomic Observatory in Belgrade, the work of Milanković, publishing of his works, meetings, inaugural speech at the Academy and many other topics, this paper

concentrates to primarily deal with the letters concerning the work of Milanković and Mišković related to Alfred Wegener (1880–1930) and Wladimir Köppen (1846–1940) in the field of the work of Milanković. That relates to the correspondence whose period ranged from the beginning of 1924 to the end of 1930 (the total of 9 letters by Mišković and 7 by Milanković). The paper contains quotations in the form of either whole letters or their parts with the mention of Alfred Wegener and Wladimir Köppen.

How important were the letters of Milanković for Mišković can be seen from the fact that he mentioned them in the commemorative speech after the death of Milanković. This text contains the following:

"I shall start by reading two short paragraphs from one of the letters that late Milanković wrote to me while I was still an astronomer of the Observatory Mt. Gros in Nice, long time ago, precisely 34 years ago. Another interesting coincidence – the letter was dated 17 December and it was Wednesday, as today. The letter will witness how the late Milanković, besides all his duties and responsibilites, took care and kept in mind the requirements and the progress of astronomical science" (Mišković, 1958).

2 On Alfred Wegener and Wladimir Köppen in correspondence

Milutin Milanković participated at the Congress of German naturalists and physicians that was held at the end of September 1924 in Innsbruck, Austria. He decided to attend the Congress when he was informed that many eminent scientists of that time would be present, and especially that Alfred Wegener, German polar researcher, meteorologist and geophysicist, who remained known by his theory of the movement of continental plates, would give a lecture there on 25 September (Milanković, 1952). Before their first personal contact, Milanković exchanged letters with him and his father-in-law Wladimir Köppen, a famous geographer, climatologist and meteorologist, especially known for his detailed climate classification which is still used throughout the world. Köppen and Wegener completed their seminal paper "Climates of the Earth's Past" in 1924 and had it printed just in time for the Congress. During his lecture, Wegener mentioned that their paper contained the chapter in which Milanković presented his method and calculation results (Milanković, 1952).

In the letter of 17 December 1924 to Vojislav Mišković, Milanković mentioned to him for the first time about Alfred Wegener and his work.

17 December 1924, Belgrade

Dear Mr. Mišković,

. . .

I will now present another topic.

At the Congress of Natural Scientists and Physicians held in September this year in Innsbruck (Austria), Professor Wegener (Graz, Austria) gave a lecture that caused a real sensation. His theory, as you had probably heard, kept attracting all the more adherents every day and all the more strong and concrete evidence. He would like to see it in French scientific literature (e.g., in Revue Générale des Sciences) and he asked for in that matter for my translation. I, for myself, address you. Under a

separate cover I am sending you his letter that I mentioned (typed on a typewriter) and one somewhat short paper that was published in the magazine "Die Umschau". Please read them both and decide which paper would be more appropriate for publication in French and find out where it could be done. If you deem it positive, I kindly ask you to translate the chosen paper into French and publish it with your name as translator or reviewer.

In this letter I am also sending you the French translation of another famous paper of Wegener to help you with translation. I am also sending you original drawings of Wegener, kindly asking you to take good care of them, because he will probably need them on many more occasions.

In the issue No. 20 (of 30 October 1924), a translation of an American paper by Sayles on the paleoclimatic problem was published in the mentioned Revue Générale ("Dilemma of Paleoclimatologists"). Whoever compares this paper with the article of Wegener will see that this latter is on the much higher scientific level that the American one.

I would be very much obliged to you if you could manage to present any of the mentioned papers in France.

Sincerely yours

Milanković

In the next letter of Mišković, from Nice, on 18 January 1925, he was fully dedicated to their intentions of publishing the papers of Wegener in French journals. It was evident that it did not go as he and Milanković planned.

Milutin Milanković was elected a full member of Serbian Royal Academy in 1924, and he was appointed in 1925 (Milanković, 1952). In the letter from Nice of 2 February 1925, Mišković asked Milanković to send him his lecture on Wegener‘s work after he "held it in the Academy". At the annual meeting of the Academy on 7 March 1925, Milanković held his inaugural speech on the topic "The Calendar of the Earth‘s Past" (Milanković, 1952). In his lecture he talked about how his cooperation with Köppen started and also about the results that Wegener presented at the Congress in Innsbruck (Green, 2015).

From the letters of 13 July and 18 August 1925, it can be seen that Mišković translated into French the inaugural speech of Milanković at the Serbian Royal Academy. From Semmering, Austria, in July Milanković thanked him for his effort and good translation and said that he had to change only some technical terms. In August Mišković replied that "*he apologizes for errors and mistakes of technical nature because, as he humorously added, how could he find his way when Milanković took him off the sky and lowered him into the glaciers and prehistoric ice ages".*

In 1927 Milutin Milanković received two important cooperation offers, one from Köppen and the other from Wegener (Andjelić, 1979). At the invitation of Köppen, Milanković wrote in 1929 a new paper where he intended to study secular insolation changes on great number of parallels on the northern and southern Earth‘s hemispheres. He consulted Vojislav Mišković about that and delegated performing the calculations to him. For the collaborators in that project, he chose Dragoslav Mitrinović (1908–1995) and Stanimir Fempl (1903–1985), both of whom later became very well-known professors of the Department of Electrical Engineering in Belgrade and

authors of numerous university mathematical textbooks. They made calculations of secular changes of astronomic elements of the orbit of the Earth in the time interval of the past 600,000 years on the most advanced hand calculating instruments of that time in the possession of the Astronomical Observatory. Based on those results, Milanković completed his work and in May 1930 travelled to Graz where he handed his manuscript to Köppen. Milanković presented major results of his work on 26 May 1930 at the Academy of Science that was later also published as an article "The Astronomic Theory of Secular Climate Variations" (Milanković, 1952).

Vojislav Mišković founded and edited "The Yearbook" in 1930 (Observatoire astronomique de l'Université de Belgrade, 1931).

Mathematical Institute of the University, Belgrade,
24 November 1930

Dear Mišković,

. . .

Perusing through and reading your "Yearbook," I noticed that one part of your tables could be used in my article "Drehbewegungen der Erde" for "Handbuch der Geophysik" on which I am currently working. I marked those tables and also figures on the enclosed list. Some of the tables could be even better used if processed in more detail, for example "Tabele 5, Lange Tage und Nächte der Polarzonen". The research of polar areas by scientific expeditions and scientists studying the obtained results is very intense now, thus, it would be interesting to have in the "Handbuch" data as detailed as possible on mentioned phenomena. As for tropical zones, it would be interesting to give data on the days of passing of the Sun through the zenith and about the length of such days.

That is why I would kindly ask you to edit for me the marked tables for "Handbuch" and process them as needed. We will talk more about this, and I am sending this letter so that you would have more time to think about it before our conversation.

I would need these tables for the second half of December. Having confidence in your tested assistance, I thank you in advance, with the most cordial greetings.

Yours,
Milanković

P.S. . . .

The list that Milanković mentioned in the letter, with the names of the tables that were interesting to him, was not saved. In his work Milanković used astronomic data as can be seen in his most famous work "The Canon" (Milanković, 1941).

In his letter, Milanković mentioned that Ms. Elsa Wegener was translating the biography of Carl Anton Bjerknes (1825–1903), Norwegian mathematician and physicist, well-known for his studies in hydrodynamics. At the time Elsa Wegener was writing to Milanković, her husband Alfred Wegener led the expedition to Greenland on which he died on 2 November 1930, a day after the celebration of his fiftieth birthday. Since Milanković wrote to Mišković on 24 November 1930 that he just received a letter from Ms. Wegener asking for the journals for her work, it can be supposed that at the time of writing that letter, Elsa Wegener was a widow without knowing it. Milanković, too, did not know that he lost his close friend and collaborator, Alfred Wegener.

Conclusion

Milutin Milanković had the highest opinion on the expertise and work energy of Vojislav Mišković. Mišković became his appreciated collaborator on whom he could always rely and turn to him for advice and assistance. It can also be seen from the letters that there was great significance of the excellent knowledge of French by Mišković, his acquaintance with the colleagues and persons in general that had influence on the presentation and publication of the papers in the area of the work of Milanković. Milanković thought that Mišković was very educated, experienced in his line of work, conscientious and tireless. He did not retreat before obstacles and he managed to raise the reputation and awareness of the Astronomical Observatory in Belgrade to the level of advanced European observatories of that time (Milanković, 1952).

In the letters they discussed about the doctorate of Mišković, his return to Belgrade, the appointment at the University, foundation and building of the Astronomic Observatory in Belgrade, the work of Milanković, publishing of his works, meetings, inaugural speech at the Academy and many other topics. This paper chose to primarily deal with the letters concerning the work of Milanković and Mišković related to Alfred Wegener and Wladimir Köppen in the field of the work of Milanković. Because those letters contain a lot of valuable material, the research of this correspondence will be continued.

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