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ИСТОРИЯ АСТРОНОМИИ

THE DYNASTY OF KNORRE ASTRONOMERS AND OTHER KNORRE DYNASTIES

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Traditionally, the names of some families are linked to specific trades or professions inherited, so to say, from generation to generation. This is also true in astronomy. We wish to present here a dynasty less known than the famous Struves, but also born in Dorpat/Tartu: three generations of Knorre astronomers [1, 2].

The founder of the dynasty was Ernst Christoph Knorre, the son of a merchant and a native of Haldensleben in Saxony, who had studied theology at the University of Halle. Yet, he always felt a strong interest for mathematics, exact sciences and the knowledge of the universe. Around 1780 he moved to Dorpat where he became the headmaster of a secondary school for girls as well as teacher of mathematics. At the age of 35, Ernst Christoph decided to devote most of his leisure time to his favourite science and started to practice astronomy regularly, although he had no specific training in that area. He undertook a daily record of his work. Entries in his journal start from 1795. On the same year, Ernst C. Knorre, who at that time had no astronomical instruments, used self-made devices to determine the geographical latitude of the city of Dorpat.

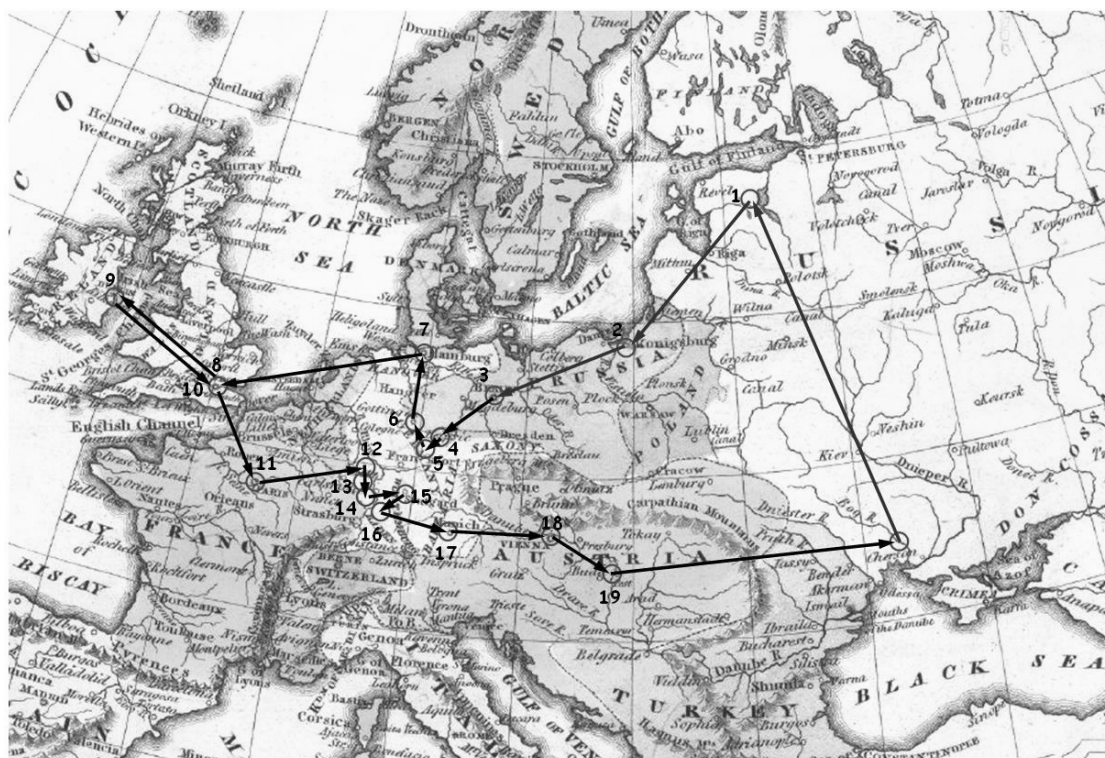
It was the first and, of course, extremely inexact attempt (with an error of over 10') to determine the latitude of the observation place [3]. Later, Ernst C. Knorre continued his latitude determinations with the help of gnomons and from 1798 with the help of a small Hadley octant with division by 20'. His passion for astronomy won him a small circle of enlightened fans who helped him with his observations. This brought him a certain fame and recognition.

In 1802, after the re-establishment of Dorpat University, Ernst C. Knorre was appointed to the post of assistant professor of pure and applied mathematics and astronomical observer at the newly created temporary university observatory. Thanks to his efforts, the observatory was equipped with sextants and other needed instruments. In 1806 a new professor was appointed to the chair of pure and applied mathematics, Johann Pfaff, a real specialist in his field. He did not trust Knorre's abilities and the two men did not get along well together. Soon Pfaff excluded his assistant from practical observations and until Pfaff's departure in 1809, Ernst C. Knorre had to work away from the observatory temporary installations. Nevertheless, he persistently continued his observations with a sextant. But he was not to see the opening of the permanent observatory for after fifteen years of selfless dedication to astronomy, he passed away on the 1st of December 1810 at the age of 51.



Ernst Christoph Knorre (1759–1810)

When his father died, Karl Knorre, born in Dorpat in 1801 and not even 10 years old, already displayed an impressive activity and astonishing self-dependence. He gave private lessons in mathematics and Latin to other pupils of his school and even to adults. Thus, he helped his mother by earning enough money to pay for his own education[4]. As he was a brilliant pupil, he finished school very early and entered Dorpat University at the age of 15. He had an incredible passion for mathematics, astronomy and science. He remembered his father's astronomical observations and was eager to carry on his studies in that field. However, in compliance with his guardian's wish, he started by studying theology. But at the same time he continued to study mathematics on his own. Soon he called on himself the attention of Professor Wilhelm Struve, appointed director of the Dorpat observatory in 1819, who supported his efforts at self-education and introduced him to the practice of astronomy. At that time, W. Struve was planning to undertake an extensive land survey of Livonia with the help of some of his students. He chose to take Karl Knorre as his first assistant, thus giving him the opportunity to acquire a decisive experience in geodesy. W. Struve so highly valued K. Knorre's work, that soon he recommended him to Admiral Alexey Greigh who was looking for a young astronomer as director of a new observatory to be built in Nikolayev.



Karl Knorre's route (drawn on a map of Europe in 1830 from Rumsey Collection)

Karl Knorre's European tour (June 1825 – August 1827).

Departure from Nikolayev : early June 1825

1. Dorpat/Tartu : June 1825
2. Königsberg /Kaliningrad : early July 1825
3. Berlin : early August 1825
4. Halle : August 1825
5. Gotha : August 1825
6. Göttingen : early September 1825
7. Altona – Hamburg : September 1825
8. London : from early October 1825 to early May 1826
9. Dublin : May 1826
10. London : end of May 1826

11. Paris : from early June 1826 to early March 1827
12. Mannheim : March 1827
13. Speyer : March 1827
14. Karlsruhe : early April 1827
15. Stuttgart : April 1827
16. Tübingen : end of April 1827
17. Munich : from early May to early July 1827
18. Vienna : July 1827

19. Ofen/Buda(pest) : early August
Return to Nikolayev : 11/23 August 1827.

In July 1820, Karl Knorre was appointed to the post of naval astronomer for the Black Sea Department of the Navy [5]. He arrived in Nikolayev in February 1821, one month before his twentieth birthday. Then he discovered the manifold duties assigned to him by Admiral Greigh. Beside lectures on astronomy to be given at the Navy school, he was expected to lead hydrographical campaigns on sea and supply the Black Sea Fleet with exact time and astronomical instruments. He would also have to conduct observations at the Admiral's private astronomical station, the pride of which was a 2-foot meridian circle by Liebherr. That was the only place where to practice astronomy before the construction of the future observatory.

The building works on Nikolayev naval observatory started on the 28th of May 1821 under the supervision of Admiral Greigh. Karl Knorre was well aware that he needed to acquire a special know-how and experience to be able to install the meridian circle and other equipment in the new observatory. Therefore he asked Admiral Greigh for the permission to go to Western Europe on a field trip in order to get acquainted with the best astronomers and their techniques, the latest instruments and their best makers. The Admiral who appreciated the work and qualities of the young man, agreed to let him go on an extensive tour of Europe.

In the course of this two-year journey, Karl Knorre visited the most advanced observatories of that time and met famous astronomers (Bessel, Encke, Schumacher, John Herschel, Arago), as well as makers of astronomical equipment (Ertel, Utzschneider, among others). He also made arrangements with booksellers and instrument makers for future deliveries of books and equipment to the Nikolayev observatory. After his return to Nikolayev, he delivered his report to Admiral Greigh [6] and immediately resumed his various activities with confidence and energy.

The new observatory was completed in August 1832. Karl Knorre successfully installed the meridian circle ordered from Ertel and even added to it an artificial horizon of his own design. For fifty years he never ceased faithfully serving the Russian Navy, astronomy and science and for at least 37 years he kept a steady correspondence with his master and friend Wilhelm Struve. In the history of astronomy, Karl Knorre's main contribution remains his Fifth Sheet of the famous sky chart published by the Berlin Academy of Science and his numerous articles in the "Astronomische Nachrichten".

The third member of the astronomers' dynasty is Victor Knorre, born in October 1840 in Nikolayev as Karl Knorre's fifth son. At the age of twelve, he was sent to Livonia where he received an excellent secondary education at a famous school in Fellin (Viljandi, Estonia).

After graduation in 1859, he returned home and worked for two years as an assistant to his father at the Nikolayev observatory. In 1862 he left for Berlin and studied astronomy with Wilhelm Foerster. After taking his PhD, he was employed as astronomical calculator at the Pulkovo observatory. During his Pulkovo assignment, he escorted academician Wild on an extensive inspection tour of weather and magnetic stations across Russia. His task was to determine their geographical coordinates and to conduct magnetic measurements. In 1869, his poor health condition forced him to return to Nikolayev, where he first acted as a private tutor for his younger brothers and sisters. Then he obtained a teaching position at the local high-school, but with a miserable salary and little hope to improve it. Therefore, after his father retired in 1871 and decided to move to Berlin with his wife and youngest children, Viktor left



Karl Knorre (1801–1883)

first, in order to find suitable accommodation for his family in Berlin, and finally settled down with them in the Prussian capital.



Viktor Knorre (1840–1919)

In 1873, Viktor Knorre was appointed observer at the Berlin observatory, whose director was his former master Wilhelm Foerster. Using a Fraunhofer refractor, he dedicated himself mainly to the observation of asteroids, comets and double stars. On the 4th of January 1876, he discovered asteroid Koronis and in the following years three other asteroids, Oenone, Hypatia and Pentheseilea. In order to observe and determine the path of asteroids, he built a micrometer with a special recording device which he called “Deklinograph”. He described its various stages of development in numerous issues of “Astronomische Nachrichten”. His observations led him to introduce a number of improvements on other astronomical instruments and equatorial telescope mountings.

In 1872 Viktor Knorre was appointed Professor of astronomy. His father Karl had the privilege to witness the brilliant achievements of his favourite son, and died in peace in 1883.

The Knorre and Struve dynasties were to meet again when in 1904 German Ottovych Struve was appointed director of the Berlin Observatory and most probably came into regular contact with Viktor Knorre. The latter’s official career ended in 1906 when he retired. But he continued his scientific activity privately and in 1909 and 1911 published works on a new equatorial mounting “type Knorre und Heele”. He had a prototype built by Heele at his own expenses. Such were the many contributions of Viktor Knorre to science, the last astronomer of the Knorre dynasty, who died in 1919 [7].

Engineers-builders formed a second important dynasty in the Knorre family, starting from Fyodor K. Knorre, born in 1831 in Odessa as Karl Knorre’s eldest son and only child of his first wife Elisabeth. After studying architecture at Saint-Petersburg’s Academy, he graduated from the newly created Institute of Civil Engineers and completed his training by spending one year at the Berlin Higher School of Architecture. Then he started his career as engineer-builder, working in different parts of Russia. Among others, in 1870-72 he was associated to the construction of a railway bridge over the Dnieper at Kremenchug. Afterwards, he participated in the construction of several railway sections of the Moscow-Kolomna line and one to Saratov. Later he moved to Stavropol where the governor appointed him successively architect and engineer for the Stavropol province. He stayed and worked there for fifteen years. He fulfilled his last significant mission in Krasnoyarsk where his brother Eugene had called him to participate in the building of a railway bridge over the Yenisey river for the Trans-Siberian main line. The works lasted four years, from 1896 to 1899.

The most prominent representative of the engineers-builders’ dynasty is definitely Eugene Knorre, already mentioned. Born in 1848 in Nikolayev, he was Karl Knorre’s tenth son. After completion of his secondary education in Berlin, he was sent by his father to Switzerland to study at the famous Zurich Polytechnikum, from which he graduated in 1870. Then he participated in the construction of different bridges over the Dnieper, western Dvina, Volga and Yenisey rivers and became a specialist in the use of caissons in the building of bridge piers. For his achievements on the Krasnoyarsk bridge he was awarded the Golden Medal of the 1900 Paris World Exhibition, the same prize as the one won in 1889 by Gustave

Eiffel for his famous tower. In the following generation, Fyodor Fyodorovich Knorre, born in 1865, built bridges in Siberia and later in Saint-Petersburg.

Outside of astronomers and engineers-builders, let's now turn to members of the medical profession which was represented in the Knorre family by several prominent physicians. First, Woldemar or Vladimir Knorre, third son of astronomer Karl Knorre and his second wife Dorothea. Born in Odessa in 1838, he studied medicine at Dorpat University where he belonged to the ancient and famous student fraternity "Livonia". He started his career in the Navy as an assistant doctor aboard a ship of the Black Sea Fleet. Then he worked as anatomist-pathologist at the Nikolayev Navy Hospital and was later appointed director of the Nikolayev City Hospital. In December 1893, he was promoted to the rank of actual State Counselor and appointed surgeon aboard the flagship of the Baltic Sea Fleet, based in Kronstadt. After a life-time dedicated to both medicine and the Navy, he died in 1901 in Riga. Secondly, we must mention Georg von Knorre (1864-1916), Karl Knorre's grandson and son of Alexander Knorre who was the director of a paper factory at Rappin in Livonia (Räpina, Estonia). Likewise, he studied medicine at Dorpat University and belonged to the fraternity "Livonia". Later he founded in Riga (Latvia) a women's clinic of great renown. Among his eight children, his son Heinrich born in 1897 became a specialist in gynaecology and obstetrics and succeeded his father at the head of the family clinic. Another son of Georg von Knorre was Georg Hellmuth (also Jürgen) von Knorre (1906-1981), who became a specialist of internal medicine. He is also the author of a priceless genealogic index which is a necessary instrument for any research on the Knorre lineage [8].

We will conclude with a few words on a last dynasty: musicians present in the Knorre family. Ernst Christoph as well as his elder brother Johann Friedrich who settled down in Dorpat at the end of the 18th century, were musicians at heart. They were regular organists at St John's church, now Tartu Jaani kirik. There from 1790 till his death in 1810, Ernst Christoph played on the organ every week. Later, one of his grand-children became a professional musician, Ernst Leopold, born in 1839 in Pernau, who studied piano first with famous virtuoso Theodor Stein, then in Brussels and Paris. After his return to Livonia, he started a short career, giving concerts as a pianist, then moved to Dorpat/Tartu where during over five decades, he gave piano lessons to generations of pupils. His eldest daughter Helene, born in 1865, helped him by taking care of beginners. Their house was a meeting-place for music lovers in Tartu at that time. Ernst Leopold died in 1928 in Tartu after an exceptionally long career as a highly respected piano teacher and musician [9].

Among Karl Knorre's descendants, several musicians can be mentioned. The most famous one is Evgeny Fyodorovych Knorre, born in 1870 from Fyodor's second wife Antonie Brun. He made a brilliant career as violin virtuoso and settled down in Moscow where he still lived and worked in 1936. His own son Anatoly, born in 1902 in Ivanovo-Voznesensk studied music in Berlin and like his father became a violin virtuoso. In 1937 he was appointed director of the Tashkent conservatory and later in 1965 conductor of the Moscow Railway Workers Orchestra. Evgeny's elder sister Adele, born in 1867 in Serpukhov, graduated from the Saint Petersburg Music Conservatory with the rank of "free artist" entitling her to start a career as an opera singer or a pianist. But family circumstances prevented her to do so. Her father Fyodor Karlovych, who had become a widow for the third time, ask her to come and manage his household in Krasnoyarsk, Central Siberia, where from 1896 to 1899 he worked on the construction of the railway bridge for the Transsiberian main line. In Krasnoyarsk Adele gave musical evenings at her father's home where she gathered a circle of enlightened expatriates from Europe. In 1899 she obtained a position as a teacher of piano and opera singing at a musical school in Nikolayev. Soon she met and married Wilhelm Weiss, a merchant's son from Libau (now Liepaja, Latvia). Three children were born. Around 1907, the whole family moved to Libau where Adele continued teaching music in schools and giving private lesson

till her retirement in 1930. Then her youngest daughter Lydia, born in Libau in 1912, who had just finished her secondary education, convinced her to escort her to France where she wanted to study music at the then famous Toulouse Conservatory. After several years of hard work, Lydia obtained the First Prize for piano playing and opera singing from the Toulouse Conservatory. Soon she married a Frenchman and started to raise a family. But her passion for music never left her and for over thirty years she taught her art in high-schools and gave private piano and singing lessons.

Here ends this brief outline of selected professional dynasties in the Knorre family, whose members distinguished themselves not only in astronomy, but also in engineering, medicine and music in the Russian empire, Germany and France for about 200 years.

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