

*A note of introduction: In December 2006, Dr. Neumayr published an article, "Woran starb Mozart wirklich? Mozart im Spiegel der Medizin," in the Wiener Klinische Wochenschrift (Heft 23-24; pp.776-81). Invited to speak to this theme, Dr. Neumayr adapted and augmented the article to fit the needs of a verbal presentation. His talk was given in Salzburg on 15 September 2007 to an international forum of paediatric physicians and medical researchers.*

Univ.-Prof. Dr. Anton Neumayr

## WHAT ACTUALLY CAUSED MOZART'S DEATH? – THE DIAGNOSIS OF AN AUSTRIAN PHYSICIAN AND MEDICAL HISTORIAN

Good Afternoon, distinguished guests, ladies and gentlemen. It is my privilege and pleasure to speak to you today. We find ourselves in Salzburg, in this wonderful city of culture and music. And in Salzburg, music means Mozart.

Not far from where we are now, Wolfgang Mozart was born 251 years ago. It was not an easy birth apparently but there was nothing unusual or mysterious about it.

Almost 36 years later, he died in Vienna. And, in spite of all you may have read or heard, there was nothing unusual or mysterious about his death either, not when all the documentary medical evidence is considered and the state of medical knowledge and practice in Vienna 250 years ago is taken into account.

As a doctor of internal medicine with the practice of several decades behind me as well as an experienced and much-published medical historian, I would like to tell you why this is so.

But first, let us begin, as all good talks should, with some words from Wolfgang von Goethe: Writing to his friend Eckermann, Goethe once said this: "Mozart is something beyond all reach in the realm of music. He is one of those figures the Daemons occasionally place among mankind: so enchanting everyone wants to be like them and yet so superior none can reach them." The utterly incomprehensible nature of his personal qualities together with the power of his creativity were such that, from early on, persons began to weave garlands of legends about his life and his death, surrounding his person with mystery and setting no limits for the fantasies of generations to come. And yet, down to the present time, in spite of countless biographies written by persons more or less expert, much of his life here on earth remains hidden from our sight.

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IN HIS BOOK, "*MUSIC & MEDICINE: HAYDN, MOZART, BEETHOVEN, SCHUBERT*", DR. NEUMAYR EXAMINES MOZART'S MEDICAL HISTORY FROM BIRTH TO DEATH IN DETAIL. OF THE 128 PAGES DEVOTED TO MOZART, 38 CONCERN HIS FINAL ILLNESS AND DEATH AND CAN BE READ ELSEWHERE IN THE WEBSITE.

This begins already with his outward appearance: on the basis of the existing portraits, mostly of little authenticity and often only to be regarded as copies, to this day we actually do not know what he really looked like, neither in life nor in death. For it happened that his death mask, which might have told us so much, was shattered in a moment of carelessness by Constanze. As a result, his true features remain forever denied to us, unrecognizable, as lost to us as his grave in the cemetery of St. Marx. But his personality, too, with its characteristic traits as they emerge out of the Mozart literature, is often difficult to reconcile with the creative genius revealed in the greatness of his works.

One thing, however, is sure: the youngster often described as "an exceptionally playful and sensitive child, one greatly in need of love and attention,"<sup>1</sup> must have had a fairly strong constitution, for he evidently suffered no adverse effects from the widely accepted custom, one followed by the Mozart family, of raising children "on water" (actually a mixture of honey-water and a gruel of barley or oats) rather than milk.

To discover the factors that must have contributed importantly to the formation of his personality is more difficult, of course. Today we realize that his mother's heritage probably played a greater role in this than previously assumed. His gift for the theatrical and for music-making, his vivid fantasy, his earthy, often coarse humour, and his pronounced delight in pranks and horseplay – all these were characteristic traits of his mother's family with its roots in the foothills of the Salzburg Alps. And this is true of his plainspoken candour and his deep-seated sense of personal pride as well.

When Mozart's inclination, inherited from his mother, to earthy, off-color language – one thinks, for example of the "Bäse-letters" that he sent to his cousin Thekla – clearly came out from time to time, then it was not that the writer of those letters was a sexually perverted man inclined to anal eroticism. And it certainly was not a matter of a case of Tourette's syndrome, as a Scandinavian psychiatrist suggested years ago, but rather simply that of a scamp of a lad in his years of puberty. Basically, he was only making use of the very vocabulary that his mother also would use in letters to her husband. And as for those "Bäse" letters, by the way, they are not at all obscene in an erotic sense and certainly not pornographic but, in their preoccupation with excretory bodily functions, rather indecent and offensive to bourgeois, middle-class ears.

Of course, it is unexpected to find a fondness for such themes, ones typical for the age of puberty, in the twenty-one-year old author of the letters. It is an indication, moreover, of just how long Mozart's sexual development was delayed and suppressed by his father's close and constant supervision. This young man who was already an adult had never been granted either the time or the possibility of coming into closer relationships with persons of the opposite sex. Only with the onset of his travels to Paris in the autumn of 1777 was Mozart finally allowed such freedom, one that was certainly late enough when it came, with the result that it caught him all the more by surprise.

Although Leopold Mozart evidently gave little thought to his son's psychosexual development, still from his father, who was an exceptionally well educated and musically talented person with high moral principles, the growing Wolfgang came to receive a profound intellectual foundation for the formation of his personality and his artistic development. An eager and active pedagogue, Leopold Mozart is often accused of having robbed his son of "childhood's playful years" by an upbringing that was too strict, but this completely overlooks the fact that from his third year on, there was no play the lad enjoyed more than amusing himself one way or another with music. And besides, the father's pedagogy was motivated not solely by a sense of duty to the task of teaching but by an infinite love – one could almost say idolization – for this astonishing child. Moreover, where music-making and composing were concerned, Leopold's significance as teacher was probably at its least; there, he was permitted, rather, to be the amazed observer of all that began to transpire with breath-taking speed, like a miracle, before his very eyes. For the child, the piano lessons must have been easy, pleasant, enjoyable play, something he seemingly could do already – so eyewitnesses report – before the teaching began. We are surely right in assuming that Wolfgang did not have to pay with his childhood for being a *Wunderkind*.

With somewhat greater justification, perhaps, Leopold has been accused of exposing the youth to considerable physical strain with the concert travels that often went on for years at a time. In his defense, however, it must be granted that these travels took place not only for financial reasons and to spread awareness of this extraordinary child but they also had important educational objectives. And in fact it was precisely these journeys to the important cultural centers of the times, with the education that they provided, that took the lad from the small, culturally backward town of Salzburg, with its petit bourgeois, narrow-minded outlook, and made a European out of him. Moreover, it was the exposure provided by these travels, with their many influences absorbed and transformed in the crucible of his genius, that bestowed their essentially trans-European quality and character on his creative achievements.

For all this, however, Mozart would in time have to pay a heavy price, for it was during these strenuous travels that he would come to contract illnesses that would be significant in his later years. It was in the autumn of 1762 that the first of these medically important illnesses occurred during a trip to Vienna for an audience with Empress Maria Theresa at Schönbrunn. Writing to Salzburg, Leopold Mozart reported:

“Our Wolferl was not feeling as well as usual and complained about pain in his legs. I examined the places where he said it hurt and found a number of spots the size of a coin that were very red and somewhat puffy and that caused him pain when they were touched.”<sup>2</sup>

Here, Father Leopold is giving us the classic description of a rheumatic nodular eruption, what today we call erythema nodosum and is associated with “rheumatic pains” in the legs.

We learn about the next medically important illness a year and a half later from a letter that Leopold wrote to Salzburg in February 1764:

“My little Wolfgang suddenly suffered a sore throat and catarrh, and that night had such an obstruction in his throat that he was in danger of choking.”<sup>3</sup>

In this case, it was a matter of angina – that is, a suppurating inflammation of the tonsils – which, with the pronounced swelling of the tonsils of the still young Wolfgang, could have led to life-threatening breathing problems – a serious matter in those days before antibiotics.

And then, when he was on the way home from Paris in the fall of 1766 after more than three years of traveling through Europe, another illness hit him, one with fateful implications. His father described it this way to his landlady in Salzburg, at the same time asking her to have a well-heated room prepared for his son:

“Our esteemed Frau Hagenauerin will recall that four years ago after our return from Vienna Wolfgang was so sick and in such a bad way we feared it must be smallpox, and that the illness finally went into his legs causing him to complain of dreadful pain. Well, that’s how it is again. He can’t stand on his legs, can’t move a toe or a knee; no one can touch him and for four nights he couldn’t sleep. That took a lot out of him and made us worry all the more because he constantly had high fever and sweats in the night.”<sup>4</sup>

A doctor today could hardly have written a better description of an acute attack of rheumatoid polyarthritis; moreover, the allusion to an almost identical event at the end of 1762 tells us that this was already Mozart's second rheumatic episode, in short, a recurrence.

Leaving aside an epidemic jaundice in the nature of viral hepatitis type A that Mozart brought with him to Salzburg in December 1771 at the end of his second Italian journey, from this point on until the fateful year of 1791 we can ascertain no further grave problems with his health. When later biographers, looking at the subsequent course of events in retrospect, wanted to make us believe that psychological and physical problems allegedly were at the source of his fatal illness, then it represented purely subjective attempts at interpretation, ones no little influenced by Mozart's widow Constanze.

For the fact is that in the summer of 1791, Mozart was under great pressure to turn out an almost superhuman amount of work. In addition to the work begun on the commission to write a requiem, he was driven to complete composing his opera "Die Zauberflöte" in time for the première at the end of September. This schedule of things to be done was already filled to the brim when it was unexpectedly overloaded by a commission from on high to compose another opera, "La clemenza di Tito." And this opera had to be ready in early September for the coronation of Emperor Leopold II as King of Bohemia in Prague. For Mozart, this additional pressure meant a terribly heavy burden, one that is supposed to have led repeatedly to signs of exhaustion. It is no wonder, then, that when he arrived in Prague he appeared to be overworked, tired, and in poor health, an impression unfortunately added to by a newly acquired influenza infection. And yet, in spite of all this, he not only conducted the première of "La clemenza di Tito" but also a performance of his "Don Giovanni." Moreover, his general state of health cannot really have been so uncertain, for in those busy days he was also frequently visiting the Masonic lodge in Prague and passing hours with his friends at billiards and other diversions. One is surely right to wonder how it was that his first biographer Niemetschek was already able, so he claimed, to perceive "forebodings of an early death" in Mozart.<sup>5</sup>

If we just stick to the documentary record, then there is nothing in Mozart's last weeks in Vienna after his return from Prague that suggests he was preoccupied with thoughts of dying or even with ideas of being poisoned. On the contrary, he appears to have been just the reverse of those moods of depression that Constanze later bruted about: he was in great good humor brought on by the resounding success of his "Zauberflöte" and the prospect of lucrative commissions for compositions from other countries, he was busy composing every day, usually from break of day until well into the night, and he enjoyed an excellent appetite. Herr Deiner, the waiter from his favorite restaurant, the Silver

Snake, was even called upon mornings to bring over one or two pork chops, a bit of rabbit and the like to his quarters in the Rauhensteingasse. And physically he was completely fit to the very end: not only was he an enthusiastic and unflagging dancer, but he owned a horse and regularly went riding until shortly before he died. His daily canter in the early morning came about not so much of his own accord, to be sure, but rather more in response to orders from his friend, Dr. Barisani, who hoped in this way to compensate for Mozart's largely sedentary working habits.

Going by credible reports that have come down to us, there can be no doubt that Mozart must have been altogether healthy, physically and psychologically, in the three months following his return from Prague. Mozart research today is unanimous in the view that the person responsible for the confusion surrounding the Requiem as well as accounts of Mozart's fatal illness and alterations in his personality extending even to paranoid thoughts of being poisoned was none other than his wife Constanze, who as widow rose to be the Gray Eminence of Mozart Literature when she found it remunerative to pass on grotesque, fabricated accounts to contemporary biographers.

It was only on 20 November 1791, a few days after the well-received first performance of his last composition, a Masonic cantata, that the heretofore healthy Mozart suddenly became ill. And because the illness, which came so unexpectedly and seemed at first so mysterious, resulted in his death in the short time of only two weeks, rumors of all sorts inevitably began to circulate. For example, only a week after Mozart's death, you could read this in a Berlin newspaper: "Because his body became swollen after his death, people even believe that he was poisoned."<sup>6</sup> Some thirty years would elapse, however, before the suspicion was raised in Vienna in 1819 that Mozart had been a victim of a rival Italian faction in the city's music scene – thus marking the birth of the so-called "poisoning legends." And in connection with such a murder by poisoning, people began to regard the Viennese Kapellmeister Antonio Salieri as the number one suspect.

Because these malicious rumors, once voiced, would not be silenced, Salieri's friend Giuseppe Carpani, an author from Milan living in Vienna, decided to deal with the slander once and for all by publishing a statement of defense. To do this, he drew upon the medical report of Dr. Guldener von Lobes, a public health official for Vienna and Lower Austria and one who in fact had viewed Mozart's body after he died. In his testimonial,<sup>7</sup> Guldener not only disposed of every suspicion of murder by poison but also gave assurance that the possibility of mercury poisoning – and this is something that is invoked to this very day by adherents of the murder-by-poison thesis – could not possibly have escaped the attention of his two

colleagues who were treating Mozart, Dr. Closset and Dr. Sallaba, both prominent members of the Vienna Medical Faculty. In the period since mercurous chloride had been introduced for the treatment of syphilis, doctors in those days were all too familiar with its medical picture.

Among experts, the poisoning theory no longer finds any takers. There is another hypothesis, however, that is reflected in Mozart biographies even today in spite the fact that it could be completely refuted years ago. According to this theory, Mozart died as the result of a chronic glomerulonephritis – that is, nephritis marked by inflammation of the renal capillaries – with all the indications of a uremic coma. In 1905, the French clinician Dr. Barraud was the first to advance the proposition that Mozart had suffered a case of scarlet fever nephritis which then developed into a chronic condition and led ultimately to his dying in uremic coma. When it was finally recognized that the so-called case of scarlet fever Mozart is supposed to have had in 1762 was in fact a case of inflammatory nodules known as erythema nodosum, as mentioned before, this hypothesis collapsed.

There is yet another hypothesis – it's called the "kidney thesis" – that smoulders on and on. Its most prominent advocate has been the dermatologist Dr. Greither who became convinced that Mozart fell ill with an acute glomerulonephritis during his first Italian journey, some time in the years from 1769 to 1771. He found evidence for this in comments that Mozart's sister Nannerl had made in 1772 speaking of his "brownish-yellowish Italian color" after he had returned. What Greither failed to realize was that, at the time, Mozart was affected by an acute viral hepatitis evidently accompanied by intensive jaundice, as I mentioned earlier.

But even more spectacular are the efforts of other authors to pronounce on Mozart's death while holding firmly to the "kidney thesis." In their version, however, it was not kidney failure accompanied by uremia that caused his death but rather a massive cerebral hemorrhage. One such author sees the cause as being a progressive Schönlein-Henoch purpura, a disease involving the kidneys that led, he claims, to high blood pressure ending in cerebral hemorrhaging. Another author takes the view that Mozart died of the same thing as Mendelssohn: the rupture of a hereditary aneurysm of the main vessel at the base of the brain. All of these far-fetched diagnoses suffer from the same problem -- they stand in complete contradiction to authentic statements from persons who were involved with the events of the last two weeks in Mozart's life.

Over the years, no less than 70 theories have been advanced to explain the much discussed 200-year old enigma as to just what mysterious illness could have been at work in Mozart's case that led to his death in such an unbelievably short time. Let us listen, then, to the only

three authentic firsthand accounts, those of Constanze Mozart, speaking through the Mozart biography of her second husband Georg Nikolaus von Nissen, of Sophie Haibel, Mozart's sister-in-law, and of Joseph Eybler, the composer and a friend of Mozart.

In the detailed Mozart biography published in 1828, soon after he died, Nissen wrote: "The illness began with swelling of the arms and legs and their almost total immobility, followed later by sudden vomiting, an illness that was called acute miliary fever."<sup>8</sup> Sophie Haibel testified that they quickly had to make nightshirts for the patient because "he couldn't turn over due to the swelling."<sup>9</sup> And she added, in this connection, that "Mozart's arms and legs were very inflamed." And finally to quote Joseph Eybler writing in his autobiography in 1825: during Mozart's "painful fatal illness I helped to lift him up, lay him down, and nurse him."

On the basis of these statements, the diagnosis of Mozart's actual fatal illness can be readily postulated with great certainty: the acute swellings of the arms and legs with accompanying signs of inflammation, causing the sick Mozart extreme painfulness at the slightest movement and making him utterly dependent on the help of others for every nursing and intimate personal hygienic need, along with the profuse sweating and high fever combined with miliaria-induced skin eruptions, all this, put together, is a clear diagnostic indication that it must have involved an acute attack of rheumatoid polyarthritis. Furthermore, this diagnosis is reinforced by the occurrence of previous episodes of acute rheumatic fever in Mozart's youth as well as several bouts of suppurating tonsillitis, on one occasion with the danger of choking.

And let us take particular note of the fact that this diagnosis – which in all likelihood is the only correct one – had already been made by Mozart's two doctors, Dr. Closset and Dr. Sallaba. As mentioned earlier, in discussing Mozart's situation with the public health official Dr. Guldener, they had spoken of an "acute rheumatic fever." The objection frequently voiced – that in those times every kind of pain in the limbs or joints was called "rheumatic" and thus the word is of little diagnostic use in the case of Mozart – only reveals a lack of understanding of the state of knowledge of the First Vienna School of Medicine towards the end of the 18<sup>th</sup> century. To refute such critical objections, you simply need to read what Dr. Sallaba wrote in his textbook, "*Historia naturalis morborum*," that appeared in 1791:

"Rheumatic fever . . . favors the membranous, sinewy parts of the body, such as the ligaments and the joints, and is particularly dangerous for the knee joints and the wrists. Once inflammatory rheumatism has established itself in a particular place, exceptionally sharp pains occur which . . . seem almost more than a person can stand and are cruelly aggravated by the slightest movement of the

body or by touching of the stricken part. The sickness is associated with swellings, most often showing a widespread reddening. Moreover, the inflammation tends to migrate . . . especially to the head or into the chest, cutting the threads of life and being the most frequent cause of death that comes from this illness."

It would be hard to write a better description of acute rheumatoid polyarthritis.

If Doctors Closset and Sallaba chose nevertheless to use the plain, everyday layman's term of "hitziges Frieselfieber (acute miliary fever)" in the death register, they obviously did so because, according to an ordinance of Joseph II, doctors were legally required to use a generally understood "brief notation of the manner of death" in the German language (that is, not in Latin). The term "miliary fever" did not, of course, represent a precise medical diagnosis, but rather reflected the view – as seen by the Vienna School of Medicine of the late 18<sup>th</sup> century – that miliary skin rashes were regarded solely as a non-specific symptom often encountered with illnesses of the most various kinds involving profuse sweating because of the highly inadequate hygienic conditions that prevailed in those days.

For the rapid course of Mozart's illness ending in death after only two weeks, it is necessary to have an understanding for two important factors: specifically, a knowledge of what is called pathomorphogenesis, that is, the developmental changes in the clinical picture presented by this sickness during the past two centuries on the one hand and, on the other, a knowledge of what was seen as an effective method of treatment given the state of medicine in Mozart's time.

We know today that, under the social and hygienic circumstances of the late 18<sup>th</sup> century, acute rheumatic fever not only appeared thirty times more frequently than it does now but that it also was much more severe. The same is true for the tendency for recurrence, one that even those in older age groups were not spared. Comparable conditions are still to be found today in so-called underdeveloped countries, which is why, for example, the World Health Organization prescribes the earliest possible antibiotic treatment for streptococcal infections of the throat among the young. And it is precisely at this point that the situation today differs fundamentally from the conditions in the 18<sup>th</sup> century. In those days, there being no therapy whatsoever, it often came to very acute progressive forms by which, as in Mozart's case, extremely high temperatures set in inside of a few hours, resulting in death within a few days. Early in the 19<sup>th</sup> century, the French clinician Bouilleau provided alarming examples of this among young soldiers. And in Germany, in the era shortly before salicylate treatment began, highly acute and dangerously progressive forms of acute rheumatic fever, called "cerebral rheumatism" or "hyperpyretic rheumatic fever," could also be observed.

It is possible, then, that the unexpected swiftness of Mozart's death accords with such a "cerebral rheumatism." In this connection, the doctors treating Mozart spoke of "a deposit in the head," a description that certainly fits. And from their experience, they could tell that in such cases a fatal outcome was inevitable.

With even greater likelihood, however, there must have been another circumstance that brought about his sudden death. I refer to the pernicious impact of the use of withdrawing substantial amounts of blood as advocated at the time by Maximilian Stoll of the Vienna School of Medicine. If a rheumatic fever were to take a distressing course, the patient might even be bled twice a day with eight ounces of blood being withdrawn each time. In a week's time, this could mean the loss of from two to three liters of blood. Such an injurious act can be understood only when we keep in mind that, in those days, persons believed that the human body possessed a total of twenty liters of blood. Even though we have no detailed information regarding the measures by which Mozart was treated, still the fact that such an exemplary representative of the Vienna School of Medicine as Dr. Sallaba was in charge of the treatment allows us to assume that Mozart too received the advocated venesection treatment.

This assumption tends to be confirmed by an entry in the diary of Dr. Carl von Bursy of St. Petersburg, who was visiting in Vienna at the beginning of the 19<sup>th</sup> century. It says "The most famous doctor in the city diagnosed Mozart's disease as inflammatory and bled his veins." With Mozart's small body, which surely was already dreadfully short of fluids as the result of the profuse sweating, the applied purgations, and the use of tartar emetics for the purpose of removing the *materia peccans* as conceived in the teachings of the humoral pathology, such an additional loss of blood must have had catastrophic effect. And in fact that was so, as we can read in something that Nissen wrote in his biography of Mozart, quoting Sophie Haibel and saying that she "thinks Mozart was not effectively enough looked after in his illness, for instead of bringing out the spots yet more by other methods, they bled him and applied cold compresses to his head, whereupon his strength visibly ebbed and he fell unconscious and never came to again."<sup>10</sup>

In short, ladies and gentlemen, with a high degree of certainty, we can say that Mozart's death came about as the result of a late recurrence of acute rheumatoid polyarthritis, while the cause for such a surprisingly sudden occurrence of death must be attributed to the use of those methods of treatment that were customary in Vienna in the late 18<sup>th</sup> century.

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## Footnotes

1. This formulation in its many variations appears to originate with something Johann Andreas Schachtner wrote to Mozart's sister in response to questions she had sent in the spring or summer of 1792; see Letter 1210 in Wilhelm A. Bauer and Otto Erich Deutsch, *Mozart – Briefe und Aufzeichnungen* (Bärenreiter Kassel, 1962-1975), Vol. IV, pp.179-83. Schachtner's letter as used in the Schlichtegroll Mozart biography is discussed in detail in "The Annotated Schlichtegroll", to be found elsewhere in the Apropos Mozart website.
2. Letter of 30 October 1762 from Leopold Mozart to Lorenz Hagenauer, Letter 36, *Mozart – Briefe und Aufzeichnungen*, Vol. I, p.55.
3. Letter of 22 February 1764 from Leopold Mozart to Lorenz Hagenauer, Letter 81, *Mozart – Briefe und Aufzeichnungen*, Vol. I, page 129.
4. Letter of 15 November 1766 from Leopold Mozart to Lorenz Hagenauer, Letter 113, *Mozart – Briefe und Aufzeichnungen*, Vol. I, page 233.
5. In this connection, analysis by the Austrian Beethoven and Mozart scholar Walther Brauneis calls into serious question whether Niemetschek in fact ever met or saw Mozart; see his study, "Franz Xaver Niemetschek: Is his association with Mozart only legend?", to be found elsewhere in the website.
6. Report in the *Musikalischen Wochenblatt*, Berlin (31.? December 1791), Otto Erich Deutsch, *Mozart – Die Dokumente seines Lebens* (Bärenreiter Kassel, 1961), p.380.
7. Letter of 10 June 1824 from Dr. Eduard Guldener v. Lobes to Giuseppe Carpani, Vienna, Deutsch, *Mozart – Die Dokumente seines Lebens*, p.449. For an English translation, see the Mozart study in Dr. Neumayr's book "Music & Medicine – Haydn, Mozart, Beethoven, Schubert," pages 174-75.
8. Georg Nikolaus Nissen, *Biographie W. A. Mozarts* (Leipzig, 1828), p.572.
9. Letter of 7 April 1825 from Sophie Haibel to Georg Nikolaus Nissen as a contribution to his Mozart biography, Deutsch, *Mozart – Die Dokumente seines Lebens*, p.450.
10. Nissen, *Biographie W. A. Mozarts*, p.575.

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