

## Mozart's illnesses and death<sup>1</sup>

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The composer Wolfgang Amadeus Mozart died towards the end of his thirty-fifth year, at his rented apartment in Vienna, in 1791. There has been no agreement as to the cause of his death, and it is inevitable that doubts will persist. That is not to say that a study of his illnesses and death would be futile, since it is of interest not only to the many music lovers amongst the medical profession, but also to any doctor who is prepared to accept the challenge, in the light of the shortcomings of clinical diagnosis towards the end of the eighteenth century.

Mozart was born in Salzburg, Austria, on 27 January 1756, and was the second survivor of seven children. The labour was difficult and there was fear for the survival of his 35-year-old mother. Breastfeeding was not popular, and the infant was fed honey and water, and broth with some patent powder.

Wolfgang became the most famous child prodigy in history. He spent his first five years in a comfortable, happy home, much loved by his parents and sister. His father, Leopold (1719–1787), the son of a bookbinder, was an able violin teacher and composer, and later devoted himself almost entirely to the musical and general education of his son. Wolfgang was to be paraded and exhibited around the Courts of Austria and Europe, and the four tours between 1762 and 1771 occupied seven years of his life. During these travels he was exposed to the many endemic and epidemic diseases of those times. The journeys were usually undertaken in uncomfortable carriages, amidst all extremes of weather and often in unsatisfactory accommodation.

### Records and documents

None of Mozart's medical records has survived to the present day and an autopsy was not performed when he died. All the symptoms of Mozart's illnesses were recounted by laymen. Leopold had intended to write a biography of his son, and fortunately much of their correspondence has been preserved. The main sources of the illnesses are from the books of Emily Anderson (1966) and Otto Deutsch (1965). The details of the fatal illness are taken from the early biographies of Niemetschek (1798), Nissen (1828), Holmes (1845) and Jahn (1891). It should be noted that the accounts of the key witnesses of Mozart's death, Constance Mozart and Sophie Haibel, were penned more than thirty years later for the Nissen biography. An expert opinion was voiced in a more extensive document by the physician, Dr Guldener Von Lobes (1824), who defended Salieri.

### Mozart's illnesses

These are summarized in Table 1.

Towards the end of his sixth year Mozart suffered four illnesses, which appear to be related. Thus, on 4 October 1762, Leopold wrote that Wolfgang suffered catarrh during the journey on the Danube from Linz. Seventeen days later, in Vienna, Mozart became ill with fever and a few painful, tender, very red and slightly raised spots, the size of a Kreuzer (a coin the size of an old English penny). These lesions were distributed over his shins, elbows and buttocks. Over a period of a week they increased in size but not in number. Wolfgang was kept in bed for eleven days and treated with Pulvis Epilepticus Niger, and Margrave Powders. Leopold had written an excellent description of erythema nodosum, and the

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Table 1. *Illnesses of Wolfgang Amadeus Mozart*

Date	Place	Symptoms	Diagnosis
14 October 1762	Linz	Catarrh	Streptococcal upper respiratory tract infection
21 October 1762	Vienna	Fever and nodules	Erythema nodosum
19 November 1762	Vienna	'Ailing'	Upper respiratory tract infection
31 December 1762	Salzburg	Fever and polyarthritis	? Rheumatic fever
Mid-February 1764	Paris	Fever, sore throat and 'choking'	Quinsy
20 May 1764	London	Ill for 10 days	Tonsillitis
August 1765	Lille	Very bad cold	? Quinsy
15 November 1765	The Hague	Serious febrile illness	Typhoid fever
12 November 1766	Munich	Fever and polyarthritis	? Rheumatic fever
26 October 1767	Olmütz	Epidemic	Smallpox
30 March 1770	Florence	Cold	Upper respiratory tract infection
January 1772	Salzburg	Jaundice	? Viral hepatitis or yellow fever
20 February 1778	Mannheim	Temporary indisposition	Upper respiratory tract infection
10 May 1781	Vienna	Fever and malaise	Upper respiratory tract infection
May-June 1783	Vienna	Bad cold	? Tonsillitis
August 1784	Vienna	Fever, joint pains, abdominal colic and vomiting	Schönlein-Henoch syndrome
April 1787	Vienna	Unknown: ? recurrence of 1784 illness	? Schönlein-Henoch syndrome
April-August 1790	Vienna	Headache, joint pains and malaise	? Schönlein-Henoch syndrome

attending physician is to be forgiven for his mistaken diagnosis of 'a kind of Scarlet Fever', since it was not until forty-six years later that Robert Willan (1808) first described erythema nodosum. On 19 November Mozart was ailing again. Soon after his return to Salzburg, on 31 December 1762, he was put to bed with fever and had rheumatism in his feet, so that he was unable to stand. The above sequence is suggestive of streptococcal infection complicated by erythema nodosum and rheumatic fever. A diagnosis of primary tuberculosis was suggested by Rothman (1945), but this seems less likely in view of subsequent events.

Mozart suffered recurrent upper respiratory tract infections throughout his life, and the more severe of these were probably due to tonsillitis. It sounds as though he developed quinsy in Paris, in February 1764, when Leopold wrote that Wolfgang 'was ill in bed for four days with sore throat, cold, very high fever, and in danger of choking'. Leopold's favourite household remedies for treating fever included Black and Margrave Powders, violet juice, and tamarind water.

In the spring of 1765, the two Mozart children were stricken with a serious febrile illness whilst at The Hague, Holland. Maria Anna (Nannerl) had caught 'a cold' on 12 September. After a few days she had improved, but on 26 September she developed chills and fever and went to bed. Leopold noted that her throat was inflamed and sent for Dr Haymann, who

bled her on 28 September with improvement of her pulse. However, the fever persisted and her condition deteriorated so that she became delirious. She was feared lost and annointed by a priest on 21 October. On the following day Professor Thomas Schwenke was summoned in consultation. Vague descriptions of a skin rash ('boils') and pneumonia ('pocks on the Lungs') were given. However, she improved and by mid-November was on the way to recovery. On 15 November Wolfgang was also afflicted. Leopold wrote: 'Over the next month it made him so wretched that he was not only unrecognisable, but had nothing left save for his tender skin and his little bones. I had to take much care of his mouth. Most of the time his tongue was like dry wood, and dirty, so that it had constantly to be moistened. Three times his lips lost their skin, and became hard and black. By the middle of January, he was recovering and able to walk unaided'. Throughout these illnesses, the Mozart parents remained, in their turn, at the sick child's bedside, in six-hour shifts. I must disagree with the diagnosis of streptococcal infection (Scarlett 1964) and typhus fever (Katner 1969, Fluker 1972). The prolonged fever, severe toxæmia, slow pulse, delirium, skin rash, pneumonitis, haemorrhagic exfoliation of the oral mucous membrane and the prolonged convalescence all compound to make endemic typhoid fever the likely diagnosis, as supported by Clein (1959) and Shapiro (1968).

During his tenth year, in Munich, Mozart was ill in bed from 12 to 21 November 1766, with fever and rheumatism. He was unable to stand on his feet or to move his toes or knees. Leopold wrote that this illness was similar to the one in Salzburg, in January 1763 (? rheumatic fever).

Mozart contracted smallpox and was laid up in Olmütz from 26 October to 10 November 1767. A serious epidemic of smallpox was raging in Vienna at that time. Nannerl later wrote that her formerly handsome brother became disfigured after the smallpox, and that during his convalescence he was taught card tricks and given fencing lessons, much to his delight.

Wolfgang and Leopold arrived home in Salzburg after their second Italian tour on 15 December 1771, and Wolfgang had composed his Symphony in A Major (K114) by 30 December. Nannerl, in 1819, wrote that her brother suffered a serious illness soon after the composition of this Symphony, and that during his recovery he looked sickly and very yellow. She referred to a three-quarter-length oil painting in which these latter features were evident. This illness was presumably associated with jaundice, and could have been yellow fever, which was endemic in Italy at that time, or viral hepatitis: the long incubation period favours the latter.

Mozart's mother died in Paris aged 57, on 3 July 1778, after a month's febrile illness with headache, shivers, diarrhoea, deafness, hoarseness and eventual delirium and coma. She had been ailing at Mannheim in mid-December, and troubled with a recurring cough. She was bled a little less than two platefuls, and dosed with rhubarb powder in wine. Although she craved fresh water this was withheld on medical advice. The attending doctor had diagnosed internal inflammation, and the death certificate stated heart disease. The actual cause of her death is not clear (? typhoid fever or tuberculosis).

Mozart's illness in Vienna in August 1784 provides an important clue to the possible cause of his mysterious death. He was very ill and unable to travel to St Gilgen for his sister's wedding. On 23 August, whilst attending Paisiello's opera ('Il re Teodoro in Venezia') at the Burgtheater, he perspired so profusely that his clothes were drenched, and he left early. He wrote to his father: 'Four days running, at the very same hour, I had a fearful attack of Colic, which ended each time in violent vomiting. I have therefore to be extremely careful. My Doctor is Sigmund Barisani, who since his arrival in Vienna, has been almost daily at my Rooms. People praise him very highly'. There was no mention of renal tract symptoms or rash, but unfortunately Mozart's letter to his father with the details of this illness has been lost. The above information is given in a letter from Leopold to Nannerl, dated 14 September 1784. In this letter, Leopold also says, 'so, not only my Son, but a number of other people caught a rheumatic inflammatory fever, which became septic when not taken in hand at once'. Mozart remained ill till the middle of September.

Several authors (Schenk 1955, Clein 1959, Scarlett 1964, Fluker 1972) have diagnosed

renal colic due to renal calculus, or acute pyelonephritis or pyonephrosis. However, it is to be emphasized that such renal disorders would not be contracted during an epidemic. Shapiro (1968) diagnosed a severe attack of rheumatic fever, and such a diagnosis is compatible with the known symptoms, limited though they may be. But what if Mozart subsequently developed chronic renal failure? It is my view that Mozart at this time suffered a streptococcal throat infection and that this was complicated by the development of Schönlein–Henoch syndrome. Furthermore, Mozart at this time developed glomerulonephritis, the disease which eventually caused his death.

During his illness in April 1787, Mozart was again attended by his childhood friend, Dr Sigmund Barisani, who was by then a senior physician. It has been assumed that this was a recurrence of the 1784 illness, but the details are unknown. On 14 April 1787, Barisani wrote in Mozart's album:

'Do not forget thy friend, whose happiness  
and pride it is to know he served thee twice  
to save thee for the world's delight! This boast  
is yet surpassed by joy and pride to know  
thou art his friend, as he is ever thine.'

This illness probably prevented him from attending his father's funeral. Leopold had died in Salzburg aged 68, on 28 May 1787, possibly after a coronary thrombosis (Juhn 1956). Later that year, on 3 September, Dr Sigmund Barisani died quite unexpectedly aged 29.

During the spring and summer of 1790 Mozart was chronically depressed and frequently ill. The symptoms were mentioned in his letters to Michael Puchberg. During the last four years of his life, the composer wrote nineteen pitiful begging letters to this wealthy merchant and fellow brother Freemason, asking him for loans of money. On 8 April he wrote, 'I would have gone to see you myself, but my head is covered with bandages due to rheumatic pains, which make me feel my situation still more keenly'; and in early May, 'I am very sorry that I cannot go out and have a talk with you myself, but my toothache and headache are still too painful, and altogether I still feel very unwell'.

On about 6 June he went to Baden for a few weeks to stay with his wife, who was taking the cure there. On 14 August he wrote: 'Whereas I felt tolerably well yesterday, I am absolutely wretched today. I could not sleep all night from pain. I must have got overheated yesterday from walking so much, and then, without knowing it, I have caught a chill. Picture to yourself my condition – ill and consumed with worries and anxieties'. These symptoms are too vague to permit accurate diagnosis. However they are consistent with low-grade tonsillitis, perhaps associated with cervical adenitis. Recurrent arthralgias of two or three days' duration are common in Schönlein–Henoch syndrome (Bywaters *et al.* 1957).

### *Melancholia*

Mozart had an obsessional, immature personality which had been moulded by his insulated upbringing. As a child he was completely dependent upon his father, but he married Constance Weber on 3 August 1782 in open defiance of Leopold's wishes. There were six children of whom only two sons survived to maturity. Constance tolerated her later pregnancies poorly and was frequently ill during the period 1789–91. She was sent to Baden for a health cure on four occasions. Mozart borrowed money to pay for these cures, and from 1788 onwards they lived a hand to mouth existence. Mozart remained fond of his wife, but their domestic affairs were hopelessly disorganized and extravagant. During their nine and a half years of married life they occupied eleven different apartments. Mozart was appointed Chamber Musician to the Emperor on 6 December 1787, but the salary of 800 florins a year was inadequate. After his production of 'Figaro' and 'Don Giovanni' he was snubbed by the fickle Viennese aristocracy. He suffered a great deal from his unattractive appearance – he was about five feet tall, with an over-sized nose that was frequently caricatured, and his face was disfigured as a result of smallpox. His external ears were deformed (Berstrom 1979), but his hearing is said to have been remarkably acute. Mozart was fond of punch, and drank beer or wine, usually in moderation.

His mother's death in Paris was the first that he had witnessed and he suffered transient fits of melancholia after it. It is interesting that he became preoccupied with death in his last year. During the summer of 1788 Mozart was troubled by recurrent 'black thoughts which I banish by a tremendous effort'. However, with an astonishing burst of creative activity he composed the three last great symphonies on 26 June, 25 July and 10 August. The following year, in July 1789, at the time of his wife's illness (probably a varicose ulcer), he appeared to be profoundly depressed. During 1790 his depression became more persistent so that it interfered with his output of music. During his last eleven years Mozart completed 295 compositions at an average of 27 per year (Köchel 1979). It has been estimated that these works correspond in writing time alone to an eight-hour day for the same span of time (Franken 1980). It is interesting that the two 'lean' years were 1784 (18 compositions) and 1790 (10 compositions). On the other hand, his best years in terms of output were 1788, 1782 and 1791 during which he completed 43, 35 and 34 compositions respectively. It is little wonder that he rose at 6 am and often worked through till 2 am.

Mozart's depression is discussed by Franz Reichsman (1981), who points out that Mozart's immature personality was particularly vulnerable to object loss. Although these initial episodes of melancholia may have been reactive to stress in a vulnerable personality, more definite evidence of organic disease made its appearance in his last year.

#### *Cerebral vascular disease and chronic renal failure*

Mozart suffered chronic ill health during the last six months of his life, and the details are summarized in Table 2. His depression worsened and he became preoccupied with thoughts of death. In conjunction with this there was a change towards a paranoid personality, and his emotional responses were labile. Early in August 1791, Anton Leitgeb visited Mozart to commission a requiem mass, and he insisted that the identity of the anonymous patron (Count Walsegg-Stuppach) was to remain secret. The composer saw him 'as a gaunt tall stranger in a grey cloak'. Mozart subsequently became tormented with delusions that he had been poisoned and also that he had been commissioned to write his own requiem.

The history of recurrent violent headache and blackouts is of much more discriminatory value. James Collier included Mozart among the famous men who were proven or reputed epileptics (Bett 1956), however there is no record of convulsions. Holmes (1845) wrote: 'He sunk over his Composition into frequent swoons, in which he remained for several minutes, before consciousness returned'. Jahn (1891) wrote: 'These fainting fits exhausted his strength and increased his depression'.

Mozart conducted the premiere of his opera 'La Clemenza Di Tito' (K621) before the Emperor and Empress on 6 September 1791. Niemetschek (1798), who was an eye witness, wrote: 'Mozart was ill in Prague, and dosed himself ceaselessly. His colour was pale, and his countenance sad, although his merry sense of humour often bubbled into jesting, in the company of his friends'.

Constance Mozart, upon her return from Baden in mid-October, was shocked to see the deterioration in his health, and noted his worsening pallor, enervation and weight loss. She took away the score of the requiem, with which he was preoccupied, and called in Dr Franz Closset. Mozart recovered sufficiently to be able to compose his 'Little Masonic Cantata' (K623), which he conducted at the inauguration of the 'New Crowned Hope' Lodge, on 18 November.

All of the above symptoms in a 35-year-old man are nicely explained by a diagnosis of hypertensive cerebral vascular disease on the basis of chronic renal failure (Hughes *et al.* 1954). Alas, Mozart's blood pressure was never recorded, since a noninvasive method of measurement was not invented until 1876 by Ritter Von Basch (Lyons 1979). Nor is there any record of urinalysis, since Richard Bright had not yet written his classic account of the significance of albuminuria in the diagnosis of renal disease (Bright 1836). However, it is to be noted that Bright included depression amongst the clinical features of Bright's disease. Other authors (Greither 1956, Clein 1959, Scarlett 1964, Fluker 1972) have also diagnosed

Table 2. Mozart's chronic ill health and fatal illness in 1791, and hypotheses as to cause of death

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*Chronic ill health (latter half 1791)*

Depression, personality change, paranoid delusions, headache, blackouts, anaemia, weight loss

*Fatal illness (20 November–5 December 1791)*

Epidemic, duration of 15 days, fever, painful swelling of hands and feet, vomiting, diarrhoea, partial paralysis, exanthem, venesection(s), terminal coma with paralysis of conjugate gaze

*Diagnoses:* 'Un deposito alla testa' (Closset); 'Hitziges Frieselfieber' (Sallaba); 'Rheumatic inflammatory fever' (Guldener Von Lobes)

*Hypotheses as to cause of death*

Tuberculosis; typhus fever; septicaemia; poisoning – (a) by Salieri, (b) iatrogenic from treatment of syphilis, (c) by the Freemasons; uraemic coma; acute rheumatic fever; venesection(s); bacterial endocarditis

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chronic renal failure as the cause of Mozart's ill health during 1791, but have been less expansive over the mental symptoms.

### **Mozart's fatal illness**

Mozart took to his bed for the last time on 20 November 1791. His final illness had been contracted during an epidemic, probably at the Lodge, on 18 November, and lasted 15 days. The details are listed in Table 2. It was associated with a high fever and much sweating. During the night he complained of pain on moving in bed, and his wife noted that his feet and hands were quite swollen. The swellings were therefore due to polyarthritis. There were recurrent attacks of violent vomiting, especially at night, and later diarrhoea. After a week in bed he was helpless: 'Partially paralysed'. According to Schack, a family friend, Mozart's weakness was such that he was obliged to be drawn forward whenever he required to sit up in bed. Sophie Haibel and her mother made him night shirts which could be put on him from the front, for he could not turn over in bed because of the swelling. He became hypersensitive to the song of his beloved pet canary, which had to be removed from the next room because it overtaxed his emotions. On 28 November, Closset requested a consultation with Dr Mathias Von Sallaba (1754–1797), a senior physician at the General Hospital. Sallaba noted an exanthem, for he diagnosed 'a heated Miliary Fever'. The exanthem was not noted by Constance or Sophie Haibel, so that presumably it caused no itch or sting, and was not present on the exposed parts of Mozart's body. It is likely that Mozart had bed socks on, since the weather was cold. Constance said that a venesection was performed, but did not give any further details.

Mozart remained conscious until two hours before his death, and said that there was a taste of death on his tongue. During the final evening the fever persisted and the composer was anointed. Dr Closset was summoned, and came from the theatre at about 11 pm. Constance was distraught and hysterical, so that a sedative was administered. Closset ordered Sophie Haibel to apply a towel, moistened with vinegar and cold water, to Mozart's forehead. There followed a violent shuddering (a convulsion) followed by loss of consciousness. Towards midnight, he raised himself, opened his eyes wide, and then lay down with his face to the wall. Sophie Haibel noted that he puffed out his cheeks, and presumed that he was imitating the trumpets and drums in a passage from the requiem. Mozart remained unconscious and died at about 1 o'clock on 5 December. Van Swieten undertook the funeral arrangements, and on 6 December Mozart's body was consigned to a common grave containing 15–20 corpses: no stone marked his resting place in the churchyard of St Mark's.

### *Testament of Dr Guldener Von Lobes (1763–1827)*

The composer Antonio Salieri (1750–1825) had become senile in the autumn of 1823, and in his madness is said to have accused himself of poisoning Mozart. The poisoning rumour was rife in Vienna at that time. Guiseppa Carpani, a friend of Salieri, exhorted Dr Guldener to

write him a letter which would dismiss the evidence of poisoning and so exonerate Salieri. Dr Guldener was Chief Physician at the General Hospital, and he wrote the testament on 10 June 1824. He wrote that Mozart had fallen ill in the late autumn of 1791 'with a rheumatic and inflammatory Fever, which had also attacked a great many of the inhabitants of Vienna at that time', and that several patients had died with similar symptoms to Mozart. Guldener had not personally attended Mozart but he had recalled discussing the case with Closset and Sallaba, with whom he was in daily contact. He said that Closset had diagnosed '*Un deposito alla testa*'. He said that a few days before Mozart's death he had met Sallaba, who said positively, 'Mozart is lost, it is no longer possible to restrain the deposit'. He said that 'Mozart died with the usual symptoms of a deposit on the brain, and that there was not the slightest suspicion of poisoning'. He said that 'the Statutory examination of the corpse, did not reveal anything at all unusual' (Guldener Von Lobes 1824).

#### *'Un deposito alla testa'*

This translates literally as a deposit in the head. It has been interpreted to mean inflammation of the brain, meningitis, or even encephalitis. Some writers have even read meningovascular syphilis into it. Carl Bär (1966) argued that it referred to rheumatic nodules in the scalp, in support of his diagnosis of rheumatic fever. Thomas Franz Closset (1754–1813) had been physician to the Mozart family since attending Constance in July 1789. He knew Mozart well and had seen the evolution of neuropsychiatric symptoms. It is my view that Closset suspected Mozart to have a space-occupying lesion of the brain, but that he was puzzled by the polyarthritis and exanthem of his fatal illness and therefore sought help from Sallaba.

#### *'Hitziges Frieselfieber'*

This is the diagnosis in the Register of Deaths and it translates simply as a heated miliary fever. This is entirely nonspecific and simply refers to an illness associated with fever and exanthem (Katner 1969, Franken 1980).

#### **Review of the literature**

The hypotheses as to the cause of Mozart's death are listed in Table 2.

#### *Tuberculosis*

George Nikolaus Nissen (1761–1826) married Constance Mozart in 1809, and with her help wrote a biography of Mozart. This work was completed by the Dresden physician, Johann Feuerstein, who diagnosed consumption as the cause of Mozart's death. A remote case can be made for a diagnosis of tuberculosis, according to the following sequence: Mozart developed cervical tuberculosis in October 1762 and this was responsible for his erythema nodosum; in August 1784, he developed renal tuberculosis which presented with renal colic, and which recurred in 1787; his chronic illness was due to a cerebral tuberculoma and he died of miliary tuberculosis. Although it is well documented that several years may elapse between the onset of renal colic and the subsequent diagnosis of advanced renal tuberculosis (Wechsler *et al.* 1960), the above sequence of events seems far too remote for further consideration. Nor does it take into account the epidemic nature of the illness in 1784 and the fatal illness.

#### *Typhus fever*

Early biographers such as Dr F Gehring (1883) interpreted '*Hitziges Frieselfieber*' as indicating malignant typhus fever. However such a diagnosis does not take into account the chronic nature of the composer's illness.

#### *Septicaemia*

Shapiro (1968) diagnosed death from streptococcal septicaemia complicated by acute renal failure, but once again the same objection is lodged. Professor F Franken (1980) diagnosed

an acute infectious disease with death from a toxic carditis, and argued that there was no convincing evidence of chronic ill health. He denied Mozart's depression and said that he was really cheerful up until shortly before the time of his death. He argued that Mozart's incredible productivity of composition denied the existence of chronic illness. I must disagree strongly, and have already presented convincing evidence in support of cerebral vascular disease and chronic renal failure.

#### *Poisoning*

On 17 July 1829, Mary Novello wrote in her travel diary that, six months before his death, Mozart had told his wife that he was convinced that he had been poisoned with Acqua Toffana (which contains arsenic and lead oxide). The rumours that Salieri had poisoned Mozart have already been mentioned. In 1953 the Russian, Igor Belza, wrote a book expanding this theory. However, the German physician, Dr Dieter Kerner, is the most enthusiastic advocate of the poisoning theory. He has written over 30 papers in which he presents medical and historical arguments. Kerner explains Mozart's chronic ill health in the latter half of 1791 as being due to chronic mercury poisoning. The final lethal dose was administered at the end of November, and this resulted in a nephrotic syndrome and death from renal failure. First, it was supposed to have been Salieri, then Mozart was supposed to have treated himself with quicksilver against an alleged attack of syphilis, and thus poisoned himself (Kerner 1969, Katner 1969). A venereologist, Dr J L Fluker (1972), concluded that there was no evidence that Mozart suffered from syphilis. In 1966, Belza *et al.* proposed that Mozart was poisoned by his fellow Masons by sublimate, because he had betrayed Lodge secrets in his opera 'The Magic Flute'. The poisoning theory was well refuted by the Swiss authorities, Ackerknecht & Isler (1968). They argued that Mozart's swellings were due to polyarthritis and not a nephrotic syndrome. Nor was there any evidence of the tremor which is such a feature of chronic mercury poisoning. It is to be remembered that emetics and purgatives were commonly prescribed at that time.

#### *Uraemic coma*

The pioneer of the uraemic theory was Dr J Barraud (1905), who diagnosed post-scarlet fever nephritis aggravated by years of overwork. The diagnosis of uraemia was further developed by others (Greither 1956, Clein 1959, Scarlett 1964, Carp 1970, Fluker 1972). The underlying cause of the uraemia was either post-streptococcal nephritis or chronic pyelonephritis. All these authors have attributed Mozart's swollen hands and feet to nephrotic oedema. There is good evidence that this is not so, and that Mozart suffered with polyarthritis. Nor do the above authors explain the epidemic nature of Mozart's fatal illness. Charles Roe (1971) concluded that Mozart died of congestive cardiac failure, complicating renal disease, and that in addition he probably had rheumatic heart disease.

#### *Acute rheumatic fever*

In 1906 Bókay diagnosed rheumatic heart disease, and subsequently a diagnosis of death from acute rheumatic fever was developed by Bär (1966) and Katner (1969). This diagnosis accommodates the epidemic nature of the final illness and accounts for the acute polyarthritis. However, an exanthem is rare in rheumatic fever, and such a diagnosis does not account for the chronic ill health of 1791. Nor does it explain the neurological symptoms of the fatal illness. Mozart showed no evidence of chorea. It is to be remembered that it was not until 1819 that Laennec wrote his classic paper on auscultation (Osler 1907).

#### *Venesection*

Carl Bär has studied the practice of venesection, which in the late eighteenth century tended to be performed in all cases of inflammation and fever. On the basis of calculations made by Bär, with regard to Sallaba's patients, he concluded that the small-built Mozart could have been drained of four or more pints, and that this would have caused 'Haemorrhagic Shock'



(Bär 1966, Katner 1969). Such estimates to me seem excessive, but I would add that venesections are contraindicated in patients with anaemia due to chronic renal failure.

#### *Bacterial endocarditis*

Bacterial endocarditis is worthy of mention and was included in Clein's (1959) differential diagnosis. One could argue that Mozart's illness in 1784 was due to severe rheumatic fever, and that subsequently he developed chronic rheumatic carditis. In May 1790 Mozart complained of toothache, and it is possible, though not recorded, that he subsequently underwent a tooth extraction, which caused bacterial endocarditis. As a result of septic emboli, he then developed a frontal lobe abscess with eventual death from septicaemia and renal failure. However, the course seems too prolonged and it does not explain the epidemic nature of the fatal illness.

#### *Schönlein–Henoch purpura*

This diagnosis solves the mystery and ties up the loose ends. Mozart contracted a streptococcal infection while attending the Lodge on 18 November 1791, amidst an epidemic. He was stricken with anaphylactoid purpura two or three days later, and this caused the acute polyarthritis and exanthem. The purpura was asymptomatic, and probably confined to his lower limbs, since it was not noted by his wife or Sophie Haibel. Gairdner (1948) reported that the latent interval in recurrent attacks between upper respiratory tract infection and symptoms was shortened to between one and seven days. No doubt Mozart's vomiting and diarrhoea, and possibly the venesection(s), aggravated his renal failure. The chronic renal failure was due to chronic glomerular nephritis, which had been contracted during his first attack of post-streptococcal Schönlein–Henoch purpura in 1784. There were probably further recurrences in 1787 and 1790. Cream *et al.* (1970) documented that some adults with this condition develop recurrent attacks over many years, and that at times the symptoms of such recurrences are vague (e.g. fever, arthralgia, fatigue and headache). Mozart had such symptoms during the spring and summer of 1790.

J L Fluker (1972) noted that Mozart's tendency frequently to dose himself with proprietary medications may have further damaged his kidneys. It should be noted that 29 of 77 adult cases of Schönlein–Henoch purpura had taken proprietary medications within three weeks of onset of symptoms in the series of Cream *et al.* (1970), although there was insufficient evidence to prove a causal relationship.

#### *Cerebral haemorrhage*

After a week in bed Mozart was helpless and partially paralysed, and unable to sit up unaided. It is my view that the Schönlein–Henoch purpura had caused an exacerbation of hypertension, which contributed to his nocturnal vomiting, and caused a hemiparesis. About two hours before his death he convulsed and became comatosed. Then, an hour later, he attempted to sit up, opened his eyes wide and then fell back with his head turned to the wall. His cheeks were puffed out. These symptoms suggest paralysis of conjugate gaze, and facial nerve palsy. They are consistent with a massive haemorrhage in either one of the frontal lobes or brain stem. It is interesting that the second case of Gairdner (1948), a 4½-year-old child with Schönlein–Henoch purpura, died in coma. Autopsy showed evidence of subacute glomerular nephritis and scattered haemorrhages throughout the left occipital lobe. Histology of the arterioles, meninges and superficial grey matter showed evidence of necrotizing arteritis.

#### *Streptococcal bronchopneumonia*

On the evening before his death, Mozart was suffering with high fever and drenching sweats. Bronchopneumonia is frequently the immediate cause of death in patients with uraemia, and it usually develops when the patient is already moribund (De Wardener 1963).

## Summary

Throughout his life Mozart suffered frequent attacks of tonsillitis. In 1784 he developed post-streptococcal Schönlein–Henoch syndrome which caused chronic glomerular nephritis and chronic renal failure. His fatal illness was due to Schönlein–Henoch purpura, with death from cerebral haemorrhage and bronchopneumonia. Venesection(s) may have contributed to his death.

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