

NICOLAAS TULP (1593–1674)

by

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Few physicians achieve immortality more through their looks than their deeds. To Nicolaas Tulp this odd fate has belonged, for we think of him primarily as the demonstrator in Rembrandt's 'Anatomy Lesson'. Unfairly we have ignored his considerable medical achievements.

In Amsterdam in 1593 Nicolaas Tulp was born as Claes Pieter or Nicolaus Petrus. The name 'Tulp', which is Dutch for 'tulip', he adopted at some time before he was 38 years old.^{1, 2} The tulip became his symbol, and its shape was cut into the stone façade of his stately house.

Nicolaas was the youngest of four children in a family that knew no material privations. His father, Pieter Dirks, was a prosperous merchant and was active in civic affairs. We have no details of Tulp's early childhood but we do know that he entered the Leyden Lycée and in 1611 began his medical career. He delivered an oration about the relation of body and soul and, although not original, it was praiseworthy, nevertheless.³ In 1614 he again spoke formally and discussed twenty-four propositions derived from a thesis entitled *De Cholera Humida*.

At the University of Leyden Medical School some of his professors were Reinier Bontius (1576–1623), Pieter Paauw (1564–1617), and Aelius Vorstius (1565–1624). The son of a famous physician, Reinier Bontius was Professor of Philosophy and Medicine. He was also court physician to Prince Frederick Hendrik and Prince Maurits. Unfortunately none of his writings has survived.⁴ Paauw was a distinguished anatomist and botanist. Eager to make Leyden a centre of anatomy, he obtained royal permission to dissect dead criminals. In an amphitheatre built through his influence he dissected sixty bodies, all male, and many animals over a period of nineteen years. The Dutch anatomists had to wait until 1720 before being able to use female cadavers.⁵ Besides designing the Botanical Gardens of Leyden, Paauw wrote voluminously.⁶ After Paauw's death, Aelius Vorstius became Professor of Botany as well as Professor of Medicine. His interests and writings were unusually varied. He studied history, archaeology, sea life, coins and heraldry. An imaginative man, he was one of the first to suggest reclaiming land from the sea by means of pumps.⁷

Tulp was undoubtedly stimulated by his able teachers. His studies took a surgical bent and after graduation, he practised surgery as well as general medicine in Amsterdam. His practice was soon enormous and, to keep up with his house calls, he became the first physician in his city to use a one-horse carriage.⁸ His pace exhausted more than one young associate. He never refused to visit a patient and often offered his services without charge. His consultations were frequently requested and his opinions considerably respected.

Aafge Van der Voegh became his wife in 1617. Their union was both happy

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and productive but she died eleven years later. Left with five children, Tulp remarried in 1630. His second wife was the daughter of the Mayor of Outshoorn and she bore him three children.⁹

Because of Tulp's interests, capabilities, and wealth he was intimately involved in the projects and affairs of his city and country. In 1622, he was elected Judge and one of thirty-six city counsellors. In 1628 the Mayor and Judges designated him Praelector in Anatomy at the Surgeons' Guild. The practice of public demonstrations in anatomy was instituted in Amsterdam around 1550.¹⁰ Philip II, King of Spain and Earl of Holland, in 1555 granted the Amsterdam Surgeons' Guild a criminal body annually. The intricacies of obtaining bodies and the complex relations between the city magistrates and the Surgeons' Guild led to the eventual control of these demonstrations by the Mayor and Judges, who appointed a Praelector.¹¹ These dissectors were well-known municipal figures and competent anatomists. Dr. Maarten Jansz Koster (Aeditus) was the first and served until his death in 1599. He was succeeded by Dr. Sebastian Egbertsz (1599–1621), Dr. Joan Fonteyn (1621–8), and finally by Tulp who held the post from 1628 to 1653 (Table). When he resigned because of other duties, he said over a wine-filled silver tulip:¹²

That which is poured into this cup I shall quaff to you, Masters and Overseers, as a token of gratitude for the unity that has been maintained in our time. The cup itself is presented to the guild as a proof of my gratitude and, I trust, will serve as a memorial of our delightful association.¹³

During the twenty-four years as demonstrator, Tulp performed his duties with diligence and distinction. He adhered rigorously to the rules of the public anatomy lessons. Depending upon the availability of cadavers, dissections were held in mid-winter, usually Tuesday or Friday at one o'clock in the afternoon. Physicians, surgeons, city magistrates, persons of note, even ladies, were invited. Every guild member was required to be present or was fined 15 cents (3 stuyvers). Each member paid 30 cents for admission and this money was used to defray the expenses of annual banquets. 'No children nor any other persons without business' could attend.¹⁴ Walking, talking and laughing were prohibited and questions were reserved for the end of the demonstration. Under threat of heavy fine, spectators were warned not to steal parts of the cadaver. Besides these dissections, Tulp also instructed midwives.

The circumstances of Rembrandt's painting Nicolaas Tulp in 1632 are not definitely known. To commemorate their activities the Surgeons' Guild probably commissioned Rembrandt to paint them. Guilds in other cities had done the same thing, and other 'Anatomy Lessons' were well-known (Table). Rembrandt, in fact, painted another one in 1656, but because of fire, only a fragment remains from this picture of Tulp's successor.¹⁵

Some believe that Rembrandt was a friend of Dr. Tulp and that their association began when Rembrandt was his patient. This impression has come from a case reported by Tulp:

A distinguished Painter, for some time harassed with black bile, was under the delusion that all the bones of his body had softened to such a flexibility that they might easily buckle

like wax if he put the slightest weight on them. Being rooted and grounded in this notion he kept to his bed for a whole winter. . . . Once I had comprehended this dread, I did not want to antagonize him; I wanted to take roundabout rather than direct measures to undermine the fancy that he had conjured up.¹⁶ In six days, through suggestion and cathartics, the painter was cured but . . . he neither perceived nor suspected, though he was a man in other respects anything but dull-witted, and in his own art accomplished and second to hardly any.¹⁷

We have no evidence to conclude definitely that this patient was Rembrandt. He was sufficiently famous as a portrait painter to obtain the Guild's commission through regular channels. A year previously he arrived from Leyden, where he almost certainly had seen the 'Anatomy Lesson of Dr. Sebastian Egbertsz', done by Aert Pietersen and later by Thomas de Keyser (Table). Compared with these paintings, Rembrandt's effort is a definite improvement, for we sense a unity, an earnestness, and a dignity which the other 'Anatomy Lessons' lack. As in De Keyser's picture, one person holds a list with names and numbers corresponding to a number above the head of each spectator. We can identify this group as:

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|--------------------|------------------------|--------------------|
| 1. Tulp | 2. Jacob Blok | 3. Hartman Hartman |
| 4. Adriaan Slabren | 5. Jacob de Witt | 6. Mathys Kalkoen |
| 7. Jacob Koolvelt | 8. Francis van Loenen. | |

These men were prominent in their day but none, except Tulp, held a medical degree.¹⁸ Rembrandt later painted the portraits of Kalkoen and Hartman.¹⁹ We know something also about the cadaver. He was Adriaan Adriaans, a container-maker born in Leyden and hanged for insolence in January 1631.²⁰

The success of the 'Anatomy Lesson of Dr. Nicolaas Tulp' was immediate. Rembrandt, then twenty-six, became a celebrity. Between 1632 and 1634 he received forty commissions whereas in 1631 he painted only three portraits besides those of himself and his family.²¹ In addition to bringing him fame, the 'Anatomy Lesson' led to his meeting his future good friend and patron Jan Six, Tulp's son-in-law. Another son-in-law of Doctor Tulp was Arnout Tholinx, a physician, whose portrait Rembrandt both painted and engraved.²²

We wonder whether Tulp noticed the anatomical error committed in the 'Anatomy Lesson' by his illustrious painter. The flexor sublimis digitorum arises from the elbow laterally instead of medially.^{23, 24} That this could have been an anomaly seems unlikely. Zealous to defend the great painter, some have stated that Rembrandt, a good anatomist, purposely misrepresented the origin of the flexors to give greater artistic unity to this painting.²⁵ With some justification they point out that Tulp himself must have noted the discrepancy between what he saw and what Rembrandt had painted. Heckscher makes the accurate and interesting observation that ' . . . a seventeenth-century anatomy would never begin with arm and hand. The dissected parts Rembrandt has clearly superimposed on a cadaver drawn after nature. . . .'²⁶ He further suggests that Rembrandt misinterpreted a Vesalian woodcut and confused the anatomy of the right arm with that of the left.²⁷ We can say summarily that whatever the reason, the 'Anatomy Lesson' is not a lesson in anatomy.



Fig. 1
Rembrandt's Anatomy Lesson of
Dr. Nicolaas Tulp, 1632. (*The Hague*)



Fig. 2
DR. NICOLAAS TULP (1593–1674).
(by Nicolaes Eliasz (1591–c. 1636))

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In 1635 a plague in Amsterdam carried off 17,193 victims. In marked opposition to prevailing opinion and far ahead of his time, Tulp advocated quarantine as a means to control the spread of the epidemic. Despite all efforts, both wise and unwise, 1,300 died in one week. The plague, together with growing suspicions of laxity on the part of the pharmacists, occasioned Tulp's suggestion that the sixty-six apothecaries in Amsterdam be under the supervision of the city's seventy doctors.²⁸ The first Dutch Pharmacopoeia called the *Dispensatorium* appeared in 1636 and all druggists were bound by law to prepare compound according to its directions.²⁹

The facts that we have about Tulp's later years are sparse and concern mainly his civic honours. We do know, however, that he remarried in 1630 and by his second wife had three children. To his grandchildren, approximately twenty, he was a doting grandparent.

In 1649 and in 1660, he was made Supervisor of Orphans. Between the years 1645 and 1672, he was four times Mayor and eight times a city treasurer. As a member of the 'Committee Council of the States of Holland and West Friesland Concerning Amsterdam' he served from 1663 to 1665 and from 1673 to 1674. This was a difficult period for Amsterdam because Louis XIV had declared war against Holland in 1672. On committee business, in The Hague, he died in 1674 at the age of eighty-one.

Less famous but well executed is another painting of Tulp. Nicolaes Eliasz (1591–ca. 1656) portrayed him for having treated his daughter without fee. Tulp is shown pointing to a burning candle and beneath the picture are these words: *Aliis inserviando consumor* ('I am consumed in serving others'). Further likenesses of Tulp exist in sketches, in marble, and in copper.³⁰

Nicolaas Tulp's accomplishments in medicine were no less distinguished than those in civic affairs. His fame as a physician arose mainly from his book *Medical Observations*,³¹ written in 1637 originally as a practical guide for his son Pieter, who had just graduated from the University of Leyden Medical School. Subsequent editions appeared in 1652, 1672, 1685 and 1716. The second edition was dedicated to his son, who died prematurely, shortly after the first printing.

Tulp's *Observations* are written simply and, while they are often incorrect, they are never pompous. He wrote in Latin because he was afraid that the unskilled laity would read books in the vernacular and doctor themselves disastrously.³² From Tulp's *Observations*, 228 in number, we learn that he was one of the first to describe the ileocecal valve, the *vasa lactea*, the *Diphyllobothrium latum*, the pulsations of the spleen, the significance of the cauda equina, and the human qualities of the orang-outang.

He believed in the benefits of blood-letting.

... The doctors who hold that blood-letting is of no benefit and that it really shortens life are making a tremendous mistake. Their cry is one of cruelty rather than of mercy. They seem merciful, but their cruelty is masked. Therefore, let blood freely from the veins, without hesitation because of years or sex, especially when the health is sound, and when unavoidable, necessity demands it.³³

For empyema, he advocated early drainage.

... let them (physicians) particularly see to it that they get into the field early, when the powers of the body are still in full cry and the intestines are still lusty and well. Otherwise, the pus may leave the body but so also will the soul.³⁴

In his *Observations*, Tulp recorded the ill-effects of calculi of the bladder, gall bladder and kidney. He described three ways of removing urethral stones—by knife, hook or by suction.³⁵

Most of his clinical materials are in the form of case-reports—some, quite fantastic. Observation 43, for example, concerns a young damsel who lost the skin of her entire body following the ingestion of sulfuric acid, given by a physician's helper to relieve a tooth ache. Though permanently disfigured, she lived.

A case of hyperhidrosis of seven years' duration is described.

A maiden . . . had from childhood, such open pores . . . that her skin was continually damp, and she sweat so much that she needed four or five suits of underwear a day. This was an expensive proposition for her since she was a poor seamstress. . . .³⁶

We unfortunately never learn how she was cured.

One of Tulp's most interesting accounts is the following:

A heavy window fell down on the son of Peter de Wit smashing his skull on the left side. The paralysis took place on the right side. But why, prithce, is the opposite side affected?³⁷

Tulp evidently did not know that the decussation of the pyramidal fibres had been demonstrated centuries before.

Several of his patients experienced head trauma and for one of them Tulp had removed, with much benefit, a skull fragment that pressed upon the brain. He reported also instances of epilepsy, hydrocephalus and hysterical aphasia, the last cured by lightning.

He was one of the first European physicians to describe in detail beri-beri, which he treated with petroleum.³⁸

An outspoken opponent of tobacco, he alluded to the possible benefits of tea, which was then unknown in his country.

To cure deafness, he recommended hare's urine and brandy. He mentioned 'Dumb John', who, though deaf, 'could understand all that was said through reading the lips'.³⁹ But Tulp did not attach to this skill its due importance.⁴⁰

Like most men he was chained to his times. He trusted, for example, in oysters to cure tuberculosis and in herring to dispel dyspepsia. On the other side of the ledger stand his accurate accounts of volvulus, intestinal obstruction, gangrene, hydrocele, hydrors peritoneum, incisional hernia and torticollis.

In reading Tulp's *Observations* we feel that he had humility, that he recognized the limits of his knowledge and, what is more important, the necessity for further truths. He was a compassionate man, a true physician who was aware of his responsibility in dealing with mental troubles as well as bodily ills. It seems appropriate that Rembrandt and Tulp have been linked for ever in history.

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TABLE*

SOME DUTCH 'ANATOMY LESSONS' OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES

Painter	Painting	Date
1. Aert Pieterse	'The Anatomy Lesson of Dr. Sebastian Egbertsz'	1603
2. Michiel and Pieter Mierveld	'The Anatomy Lesson of Dr. W. van der Meer'	1617
3. Thomas de Keyser	'The Anatomy Lesson of Dr. Sebastian Egbertsz'	1619
4. Nicolaes Elias	'The Anatomy Lesson of Dr. Joan Fonteyn'	1626
5. Rembrandt	'The Anatomy Lesson of Dr. Nicolaas Tulp'	1632
6. Rembrandt	'The Anatomy Lesson of Dr. Joan Deyman'	1656
7. Adriaen Backer	'The Anatomy Lesson of Dr. Frederik Ruysch'	1676
8. Cornelis de Man	'An Anatomy Lesson'	1681
9. Johan van Neck	'The Anatomy Lesson of Dr. Frederik Ruysch'	1683
10. Thomas van der Wilt	'The Anatomy Lesson of Dr. Abraham van Bleyswick'	1727
11. Cornelis Troost	'The Anatomy Lesson of Dr. W. Roell'	1728

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11. HECKSCHER, *op. cit.*, pp. 189–90.
12. *Ibid.*, p. 152.
13. THYSSEN, *op. cit.*, p. 401 and Plates XLVI, XLVII.
14. *Ibid.*, p. 412.
15. HOLLÄNDER, EUGENE. *Die Medizin in der klassischen Malerei*, Stuttgart, Ferdinand Enke, 1903, p. 42.
16. HECKSCHER, *op. cit.*, p. 179.
17. *Ibid.*, p. 180.
18. *Ibid.*, pp. 188–91.
19. DE LINT, *op. cit.*, pp. 27–8.
20. THYSSEN, *op. cit.*, p. 415.
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22. DE LINT, *op. cit.*, p. 33.
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* Adapted from M. H. Spielmann, *The Iconography of Andreas Vesalius*, London, John Bale, Sons and Danielsson, Ltd., p. 139, footnote.

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25. DE LINT, *op. cit.*, pp. 44–8.
26. HECKSCHER, *op. cit.*, p. 66.
27. *Ibid.*, p. 150.
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