

Introduction

Archaeologists reach the distant times through finding objects deep in the earth. They have found evidence that on the banks of the River Emajõgi and the Toome Hill people have left their footprints thousands of years B.C. Hunters, fishermen, indigenous settlers, also conquerors who remained here for shorter or longer times were among them. High up, on the Toome Hill the imprints of all of them can be found, either marking their power or spirit. Everybody, having been here, built his stronghold, castle or temple.

War means destroying somebody else's power to gain supremacy. This is why we cannot look into the eyes of the thousand-year-old Tartu's history. Walls-castles-towers are all gone. Fortunately the buildings of the spirit escaped war and fires.

It is the right place for the guest interested in history to start acquainting oneself with the symbol of Tartu – the Toome Hill- from the Observatory and the Old Anatomical Theatre built two hundred years ago. This is where the ancient settlers built their stronghold.

We climb up the Toome Hill, then stop to read some lines to make our eyes see more clearly what is round us.

HISTORY

The Toome Hill

The creation of nature. The temple of power and spirit

"All the creatures full of life and spirit gathered on the Toome Hill where the sacred oak grove was growing. The trees sighed the leaves rustled in the air and the God of Songs Vanemuine touched the earth. He combed his curls, tidied the clothes, stroked his beard, coughed to clear his voice and touched his harp. He played the prelude and sang the laudation which impressed all the listeners including the God himself who was most enchanted. The River Emajõgi stopped to flow, the wind calmed down, the forest, beasts and birds pricked their ears and also the Fairy- the crooked Eye peeped behind the trees."

In Estonian legends the Toome Hill in Tartu is a godly sacred place. Here the God of Songs Vanemuine gave birds and animals the gift of speech and singing, he decided who would live on earth, who in the water.

In the distant past the valley of the River Emajõgi was covered with swampy meadows where the higher places were hillocks made by post-glacial gravel and sand sediments. This is the horse-shoe shaped hill which we call the Toome Hill today. Most probably in the younger Stone Age there were small camp-sites of hunters and fishermen which is proved by the finds of archaeological excavations on the territory of the ancient stronghold. Archaeological excavations have shown that the stronghold established in the middle of the first millennium was first protected by the earthen wall and a log fence.

The oldest written data about the Toome Hill can be found in the Russian Chronicle which has registered the raid, the conquest of the stronghold and the foundations of the forepost by the Prince Yaroslaw the wise in 1030. "The Livonian Chronicle" by the Latvian Henricus from the 13th century has entered the following fact in the history book: in 1219 German-Danish crusaders conquered the Estonian stronghold. Estonians were taken away their land and freedom for seven hundred years.

Now Bishop Hermann became the ruler in the ancient Estonian parish. On the territory of the ancient stronghold (at the location of the present-day Observatory), in the eastern part of the Toome Hill, the Bishop's castle with the palace, the well, the church and the armory was built. Tartu became an independent political unit being the centre of the Bishopric of Tartu. The Bishop of Tartu had both the ecclesiastical and secular power being subordinated on the one hand to the Archbishop of Riga and through him to the Pope of Rome, on the other, to the German-Roman Emperor. The chronicles inform us of the existence of the Bishop's stone castle – *Castrum Tarbate* –in the year 1234. Bishop Hermann built the Dome Church of the Bishopric on the site of the sacred grove of

ancient Estonians. Near the church there was a cemetery, on the hill and at its foot there were the living houses of capitulars, the members of the Cathedral Chapter and feudal lords together with their estates.

The construction of the Dome Church lasted until the 15th century. Bishop Hermann, who had received a permission from the German Emperor Heinrich VII for founding a town on the territory between the Toome Hill and the River Emajõgi, had the Toome Hill and the lower town surrounded by a circular wall (2,1 km). The Centre of the Bishopric was guarded by watchmen in ten towers of the town wall. Tartu as a town is first mentioned in 1248.

The future prosperity of Tartu was based on the trade with Russia – Pskov and Novgorod. From the end of the 13th century until the middle of the 16th century Tartu was a member of the Hanseatic League uniting German merchant towns being an intermediary in the trade between east and west. In the Middle Ages Tartu was divided into two radically different parts – the Toome Hill and the lower town. On the hill the Bishop was the ruler. In the lower town the citizens (mainly the migrant German mercants and handicraftsmen) had their self-government and the Riga Law was enforced.

The relations between the Bishop and the town were mainly friendly. The Bishop respected the trade interests of the town and in making decisions also considered the town's viewpoints (in the Middle Ages the Bishop was also the Governor).

Beside the participation in the Hanseatic trade also domestic trade and handicraft played an important role. The town supplied the aristocracy living on the Toome Hill with different goods and articles of handicraft.

In the days of the Bishop's rule Tartu was a large and beautiful town with the population of about 5,000-6,000 people.

The Dome Church

The oldest architectural monument on the Toome Hill is the jewel of Tartu – the Dome Church which was founded in the 13th century, rebuilt in the 14th and 15th century. Instead of the initial choir an entirely new three-apsed choir was built. Most probably the longitudinal building was enlarged and the two monumental square towers were added to the western facade. The towers were 67m high. Because of strategic considerations the towers were torn down in the second half of the 18th century. It was planned to build powerful batteries at the foot of the towers. The interior of the Church was richly decorated with the stained glass windows. At its peak time in the 16th century the Dome Church was larger than the Dome Church in Riga being even more beautiful.

The interior of the Dome Church suffered in 1525 when the masses of people guided by M. Hoffmann, a fanatic reformist of the religion, destroyed paintings and sculptures of the temple of worship. Also, the interior of the other churches in Tartu suffered much.

The destruction of the exterior of the Dome Church started during the Livonian War (1558-1583). The Church was used as a granary and for keeping hay on it. As the rulers in the town changed quickly one after another, Tartu could not start the renovation of the Dome Church. By 1613 it was fully in ruins.

The bombing during the Northern War caused holes in the walls and dilapidation.

For almost two centuries the cathedral was neglected.

Several legends and folk tales are connected with the Church and its ruins.

The construction of the Church did not progress. The work done during the day collapsed secretly at night. The mess could finish if a beautiful maiden were walled in. She would be the keeper of keys. A volunteer was found.

The poor girl did not know what it meant to be a key-keeper. In spite of all her pleas she was walled in live.

The legend says she has the right to come out of the wall two times a year – on the New Year's Eve and the Midsummer Day – and look for a woman on the Toome Hill. If she can throw the keys on the woman's neck, the maiden becomes free.

Also, the stories of immense treasures in the cellars of the Church spread. They also spoke of the secret passages joining the Dome Church with the Caves of Aruküla on the opposite bank of the River Emajõgi. People whispered about a secret place somewhere in the cellars where ravens gathered after each period of one hundred years – if somebody happened to discover the place and hear the ravens' talking, the person would become wise knowing all the secrets.

The last story tells us of the Dome Church as a temple of wisdom – the university library with three million books.

Tartu goes from hands into hands

In 1558 the Livonian War began. Russia tried to get access to the Baltic Sea. The troops of the Russian Czar Ivan the Terrible invaded Tartu.

From the Livonian War to the Great Northern War (1558-1704) – within 146 years – the rulers of Tartu changed nine times! Three times Russians, two times Poles and three times Swedes.

The Bishop's Castle on the Toome Hill was occupied by the Russian voivode and the Russian Orthodox Bishop of Viljandi-Tartu. The Russians built two mighty artillery towers on the Toome Hill – the White Rondelle on the site of the present Old Anatomical Theatre and the Moscow Rondelle in the northwestern part of the Toome Hill where the Hill of Kisses today.

The clergymen of the Dome Church were forced to leave Tartu in 1565. The last bishop Hermann II was taken to Moscow where he died. The houses of the members of the Chapter became empty. In 1582, according to the Peace Treaty of Jam Zapolski Tartu became a part of Poland. The King of Poland Stefan Batory gave an order to establish a secondary school in Tartu.

When the Jesuits came to Tartu the secondary school was replaced by a college (1585) which can be considered the first higher educational establishment in Tartu.

The building of the college was situated on the slope of the Toome Hill, next to the road ascending from the present Jacobi Street, the Professors' path (the so-called slow death).

The buildings of the Bishop's Castle could be partially used but the houses of the members of the Chapter were all in ruins.

By 1582 the Dome Church had suffered so much in the war that it could not be used for service. In 1613 it was a completely ruined structure which the rulers could not restore.

During the Polish-Swedish War (1600-1603) Tartu suffered again. In 1603 the Poles could get the town back. In 1625 they surrendered when the Swedish army headed by Jacob de la Gardie reached Tartu. In 1656 the Russian-Swedish War broke out. Again, Russians occupied Tartu.

In 1661 the Swedes could get Tartu back.

Already in the first years of their rule the Swedes paid attention to the reconstruction and enlargement of the fortification belt of the town.

At the end of the 17th century the town was surrounded with strong earthen bastions which were given the names of the Kings of Sweden, four of them (Karl IX, Karl Gustav, Gustav Adolf, Karl XI) were on the Toome Hill, but the Swedes founded something in Tartu which was stronger than stone – the temple of wise men or the university.

The King of Sweden Gustav Adolf II signed the degree of founding the university. Academia Dorpatensis was opened on 15 October 1632. On 6 November 1632, after the death of the king, the university was also called **Academia Gustaviana**. The first place for the university was a modest building of the former Jesuit College on the Toome Hill. The academy with the Latvian language as the language of instruction worked here for ten years, then it continued its activities in the building in Jaani Street. **Tartu had become a university town.** In 1710-1802 the university was closed.

The Great Northern War destroyed everything.

In 1700 the Great Northern War broke out and the Russian troops occupied Tartu in 1704 as a result of which the town suffered much. In 1708 Tartu received another blow. As it was expected that the Swedish troops could attack Tartu, Peter I had a definite plan to leave the fully destroyed to Swedes. The fortification structures were exploded, the houses burnt down. Several buildings on the Toome Hill suffered much.

In 1710 the territory of Estonia and Livonia became a part of the Russian Empire. The life in town was restored slowly. In the second half of the 18th century the Russian Emperess (Cathrine II) had a plan to turn Tartu fully into a fortified town.

In 1763 under the supervision of General de Villebois` fortification work on the Toome Hill started. The former bastions were reconstructed and joined with walls. Lower artillery platforms surrounded by walls and the vaulted access passages (poterns) were built to the bastions. To the Toome Hill, into the moat in front of the Bishop's Castle a gun powder cellar was built (today a popular beer restaurant). Also, the barracks and the hospital were built on the Toome Hill. Later it was reconstructed to house the hospital of internal diseases of the city of Tartu (now the building of the Supreme Court). In 1767 the fortification work finished. In 1775 Tartu was proclaimed an open town. The development of Tartu after the construction plans confirmed by Catherine II started. In 1802 the university was reopened at the foot of the Toome Hill. It was the Imperial University of Tartu supported and managed by the Russian state.

A WALK IN THE ACADEMIC TEMPLES

The spirit of the university on the hill

The development of Tartu in the first half of the 19th century was closely connected with the newly reopened university founded in 1802 which had German as a language of instruction and most of the students in the first half of the 19th century were the sons of the Baltic aristocracy.

Representatives of other nationalities could also come to study at the university.

In the first half of the 19th century Tartu was enriched with many buildings in the classical style. The construction work lead by professor Johann Wilhelm Krause in the years 1803-1828 had a special influence on the townscape.

In 1803-1809 after Krause's design the main building for the newly opened university was erected at the foot of the Toome Hill on the site of the former St. Mary's Church – a grandiose building in the classical style. The buildings after Krause's design were also erected on the Toome Hill which Paul I had presented to the university.

From the castle of conquerors the university professors developed a spiritual temple known all over the world in the 19th century.

The Old Anatomical Theatre, a domed classical rotunda (1803-1805), its extensions (1825-1827, 1856-1860) and the Observatory built in the site of the ancient Estonian stronghold on the foundation walls of the Bishop's Castle were constructed. In the neighbourhood the house of Tartu's bailiff was built in 1809-1810 which was later converted into the maternity hospital. In 1804-1806 the choir in the ruins of the Dome Church was restored to house the university library. The library was designed by the university architect Wilhelm Krause. The library with 60, 000 volumes moved over to the new building of the library. After having been restored by Polish experts, the former library rooms were used for **the university history museum.**

At present the towers of the Dome Church have been partially restored, the observation platform has been built for the visitors to cast a look on the one-thousand-year-old town of Tartu.

Anatomical theatre

In 1781 Tartu was crossed from the list of fortified towns of Czarist Russia. Thanks to the building and extending of bastions in the years 1763-1767 the Toome Hill had obtained the present shape.

In 1799 the Emperor Paul I presented the Toome Hill to the soon opening University of Tartu. In 1802 the University of Tartu commenced its instructions but without its own buildings as yet.

On 8 June 1803 five professors, headed by Johann Wilhelm Krause, the professor of architecture the designer of university buildings and actual leader of construction, set up a commission for construction. The time until the year 1802 with all the buildings and symbols of power remained in ruins or under ground in the foundation of the new buildings. The study block for the newly opened university started to be erected on the Toome Hill.

For hundreds of years the Toome Hill had been the fort of power. Since 1802, when the university was reopened, the Toome Hill became the temple of spirit. An original ensemble of study and research buildings was erected on the hill. The domed rotunda in the classical style built after Krause's design was the first university building which was opened for the Faculty of Medicine where the talented medical researchers from European countries were invited by the university.

The Old Anatomical Theatre

In 1805 the construction of the rotunda for the anatomical theatre after Johann Wilhelm Krause's design was completed with a lecture room, storerooms for corpses, the anatomical preparations. (In 1825-1827 the rotunda was added semicircular wings built after the design of Krause).

The world of medicine was enriched by new building – Tartu Theatrum Anatomicum. The history of anatomical theatres in the shape amphitheatres for medical studies started already in the 16th century.

The lecture of anatomy at the University of Padua (in 1594 the first anatomical theatre was built with the purpose of demonstrating the dissection of the human body) and at the University of Tartu was carried out in the same way: the students and assistants were active round the dissection table and their professor on an upper observation platform guided their work. Later world famous scholars started their studies and research at the University of Tartu in the beginning of the 19th century. Thanks to favourable circumstances the development of the Faculty of Medicine at the University of Tartu in the Middle of the 19th century became the state's priority in Czarist Russian and talented learners and teachers from all over Europe came here. The scientific discoveries made in Tartu had a quick impact on the development of medicine all over the world.

Some professors remained at the University of Tartu until the end of their academic life, some others moved either to east or west to become heads of new chairs at universities, hospitals and institutes. The University of Tartu in the 19th century was an important influential centre of medicine. All the graduates of the University of Tartu who became medical doctors and pharmacologists have been taught in the Old Anatomical Theatre. Fr. R. Faehlmann and Fr. R. Kreutzwald, Ph. J. Karell who, originating from an Estonian farmer's family, became the personal doctor of the Russian Emperors Nikolai I and Alexander II, W. Zoege von Mannteuffel, the honorary personal doctor of Nikolai II, are among others.

The number of professors having worked in the Old Anatomical Theatre is 79. Most of them have made profound discoveries. For example, professor **Karl Friedrich Burdach** (1776-1814) revealed the connections between the brain and cerebellum, he is also the author of the method of dividing the brain into lobes. Burdach's name has been given to the cuneiform funiculus of medulla. Professor **Ernst Reissner** (1824-1878) was the first to describe a very delicate vestibular membrane (the organ of balance) of the inner ear and it bears the discoverer's name. In 1886-1911 the professor of anatomy **August Rauber** worked at the University of Tartu. He became world famous thanks to his handbook of human anatomy which has been translated into several languages and published in 20 editions (the last appeared in 1987). Professor Rauber established a study museum of anatomy in the Old Anatomical Theatre where numerous models were made by himself and by his well-known assistant A. Reinvald who also made preparation.

Friedrich Bidden (1810-1894) was one of the greatest physiologists. Together with the chemist Carl Schmidt he proved that the gastric juice contained free hydrochloric acid, he explained the importance of bile in the digestion of fats, discovered psychomotoric secretion of the gastric acid

(which starts already in seeing food). Bidder, together with Carl von Kupffer, proved in 1857 that the nerve fibres start from nerve cells.

Alexander Schmidt (1831-1894) became world famous thanks to the explanation of the process of the coagulation of blood. On his initiative the New Anatomical Theatre was built behind the Toome Hill (1886-1887). Next to the New Anatomical Theatre (at 2, Näituse Street) there is a monument to a A. Schmidt.

The first pharmacological laboratory in the world was established in Tartu. R. R. Buchheim (1820-1879) opened it in his flat on the Lille Hill. Tartu became the cradle of scientific pharmacology.

Under the supervision of R. R. Buchheim the wings of the Old Anatomical Theatre were lengthened in 1856-1860 (architect K. Rathhaus). His laboratory in the flat was also moved over to the new building.

Nikolai Lunin who was the first to make an attempt (1880) to prove the theoretical importance of vitamins to live organisms. His ideas lead to the discovery of vitamins.

In 1999, when the contemporary Biomedicum was built, the Old Anatomical Theatre was no longer used as a study block. At present the Museum of Medicine and the Museum of University History acquaint the visitor with the history of Faculty of Medicine and its hospitals. With exhibiting preparations the people interested in medicine can have a look at the structure of the human body and become convinced in the usefulness of healthy ways of life. The oldest preparations date back to the year 1803.

The respectable Anatomical Theatre under architectural heritage protection scheme is a pearl in the history of science of the whole world.

The historical park

We cannot imagine present-day Tartu without the River Emajõgi and the park on the Toome Hill which lost its importance as a fortified town in the years following the Great Northern War (1700-1721). The last building activities of the fortification system in the town of Tartu planned to become a fort were carried out in 1770. after the great fire of 1775 this work was stopped.

The citizens began to build up the town. The Toome Hill and the surrounding territory remained no-man's land. Until the beginning of the 19th century it was a waste land. The citizens took soil and sand to their gardens, used it as a pasture land for the cattle, came here to ride horses.

In 1803 the Council of the newly opened university decided to lay the park on the Toome Hill. Well-known members of the academic staff – Rector Professor G. F. Parrot, G. Germann, K. S. Morgenstern and J. W. Krause – belonged to the commission of planting the university park. A guard was employed for the park because townspeople behaved on the territory of the park as they had done earlier on the waste land.

The first hundreds of poplars were planted near the present Old Anatomical Theatre in 1805. the first seedlings perished because the cattle of the townspeople ate them up.

Behind the Gustav Adolf bastion, remaining from the Swedish (1629-1699) fortification system on the Toome Hill (behind the former surgery hospital, today the living house at 21/23, Lossi Street), poplars, birches, chestnuts were planted. The alleys of the park were lined with lime-trees.

To prepare the soil for planting trees, on the slopes of the Toome Hill oats and lentils were sown, it was also allowed to grow potatoes and vegetables temporarily.

In 1805 the Toome Hill was proclaimed a public park.

The designing and founding the park lasted until 1820. During that time the former site of bastions surrounding the Toome Hill was turned into a green area. In the second stage of designing the park (1860-1880) also the area of the Hill of Kisses (the Moscow Rondelle) was brought into proper order. In the middle of the 19th century there was already a park on the Toome Hill extending to the opposite slopes and the place of the former ravelin (at present the building of the Faculty of Mathematics at 2, J. Liivi Street). The ascending path beginning from Jacobi Street (people call it the

Professor's Path, The Slow Death) was called Library Street in the 19th century after the university library.

The green area on the Toome Hill became wider when respecting the natural scientists Karl Ernst von Baer (in his advanced age he lived behind the Toome Hill at 4, Veski Street) the gravel pit, its slopes were put in order, paths were made and trees were planted. The hilly land became the Kassitoome park. In the 19th century this area was known as the wild Toome. At Kassitoome student festivities were held, especially marking 1 May.

Under the trees tables and chairs were placed where the student corporations gathered, professors, graduates and guests joining them. Beer mugs were passed round, songs were sung. Townspeople also followed how students were celebrating.

In the end of the 1860s the first of May became a holiday for the whole town. When in 1874 the work at Kassitoome had started the festivities were carried out at the foot of the Toome Hill where the tennis courts are located at present.

The park on the Toome Hill is also decorated with a small Bridge of Sighs in front of the grotto

Inventions and discoveries on the Toome Hill

The Toome Hospitals. The clinical institute

In 1806-1808 the former military barracks were rebuilt for the university hospital (architect J.G. Kranhals) which housed the clinical institute with the departments for internal diseases, surgery and the maternity hospital block where both studies and research were also carried out.

At the beginning of the 19th century when the university was opened the level of medicine in Tartu was very low. The surgery hospital was especially modest and with very few patients.

The situation changed, when a disciple of the famous Italian anatomist Scarpa, **Johann Christian Moier** was appointed Head of the surgeon with high level operating techniques, a good teacher and an administrator. He is considered to be the founder of the Tartu school of surgery. Moier was also elected Rector of the University of Tartu.

In 1836-1841 the Chair of Surgery was headed by **Nikolai Pirogov** who laid the foundation to the new branch in medicine – topographical anatomy – and taught several generations of surgeons in terms of anatomy. He was the first to apply ether as an anaesthetic and worked out the respective mask (1847). Thanks to Pirogov's inventions in the case of fractures the plastered bandages began to be used instead of the former starched ones.

At the same hospital Pirogov opened a department for eye diseases being the first in the Baltic countries. In St. Petersburg Pirogov founded the first hospital in the world for Behind the building of the Town Hall, at the foot of the Toome Hill a monument to Pirogov was erected in 1952. In addition to academic lecturers and teaching in the hospital to University of Tartu started practising out-patient medical assistance in teaching future physicians. Such practice was unknown at any other Russian university in the 19th century.

Professor **Daniel Georg Balk** began to receive patients in **his out-patient clinic** which was **the first in Russia** at that time. The town was divided into regions where his graduating students had to make home visits to the patients (at that time there were about 4,000-5,000 people in Tartu). The inhabitants had the right to contact the region's student for medical help in the out-patient clinic which functioned at the Toome clinical hospital (at present 17, Lossi Street). This is how the medical district service of the population started.

In the maternity hospital professor **Christian Friedrich Deutch** launched the out-patient practical studies of women's and children's diseases for his students. Deutch also opened a school for midwives. In 1843, on the initiative of professor Piers Uso Friedrich Walter, a special maternity hospital was built on the Toome Hill between the Old Anatomical Theatre and the clinical institute which after renovations can receive new babies even today. The maternity hospital **the women's out-patient clinic, the very first in Russia, was opened.**

The Head of **the hospital for internal diseases Johann Friedrich von Erdmann** began to use the stethoscope in 1820 which was invented by the French doctor Laennec for examining heart and lung diseases. In 1844 professor **Gottlieb Franz Emmanuel Sahmen** began to use the microscope at the hospital in 1844. Professor **Alexander Jarotski** designed a special diet to treat patients with stomach ulcers (the Jarotski diet). Professor **Voldemar Vadi** has great merits in treating patients with lung tuberculosis. Professor **Kuno Kõrge** has done much in researching rheumatism.

The surgeon professor **Ernst von Bergmann**, who had earlier worked in Vienna and Berlin before coming to Tartu, has also great merits, he is considered to be the person who discovered sepsis. Bergmann was also a well-known field surgeon having helped people in many wars. As many more young people wanted to come to study at the Faculty of Medicine and there were numerous patients needing hospital treatment, professor Bergmann set himself with a task of establishing a new surgery hospital which was opened on 3 September 1875 on the Toome Hill as the university surgery hospital (at 21/23, Lossi Street). In the new hospital the students and military physicians who were very often sent to refresher courses to Tartu were taught operative surgery.

Bergmann's research of leprosy laid the foundation for opening leprosy hospitals in Livonia. Bergmann was invited to Germany to occupy the post of the head of the surgery hospital at the university of Würzburg. Bergmann's successor at the head of the surgery hospital in Tartu was **Eduard Georg Wahl** who also studied leprosy. In 1910 a monument to professor Bergmann was erected behind the hospital he had founded.

In 1890-1906 Wahl was followed by professor **Wilhelm Koch** who on 26 October 1886 operated on the lungs at the university surgery hospital thus making the first lung operation in Czarist Russia.

Professor Koch (1906-1917) was followed by professor **Werner Maximilian Friedrich Zoege von Mannteuffel** as the head of the hospital. Professor Mannteuffel's great contribution was to start using rubber gloves in surgery which is a common practice at present in the whole world. Zoege von Mannteuffel was also one of the first surgeons in the world who before World War 1 operated on the heart (1903). In 1913 he removed a revolver bullet from the patient's heart. It happened that a twenty-year-old female patient in the surgery hospital tried to commit suicide. Mannteuffel quickly opened her thorax, removed the bullet, made sutures of the heart muscles, and closed the thorax.

At the surgery hospital Mannteuffel opened a massage institute which is considered to be the predecessor of the Faculty of Sports and Exercise Science.

Professor Mannteuffel was also a honorary physician of the Russian Emperor which gave him a wider opportunity to raise money for the university. Thanks to the professor a new bridge was built behind the hospitals. It was devoted to the 300th anniversary of the Romanov dynasty. The people began to call the bridge the Devil's Bridge (as a counterweight to the Angel's Bridge or under the influence of the professor's name). When the University of Tartu in the Republic of Estonia was opened, professor **Konstantin Konik** was appointed the head of the surgery hospital on 7 September 1919. Together with K. Päts and J. Vilms, professor Konik was the man who proclaimed the independent Republic of Estonia. He headed the hospital in the years 1919-1931.

The hospital was modernized: dry lavatories were removed, instead of gas lightening electricity was used. The hospital was equipped with state-of-the art x-ray, photo and sound therapy apparatuses. The designs for the new hospital were being made but the university did not have sufficient money.

On 25 April 1938 **Artur Linkberg** was elected the head of the surgery hospital.

In 1940 it was planned to start the construction of the first stage of the new surgery hospital, but World War 2 put an end to all the plans.

In the post-war years heart, lung, oesophagus surgery began to develop quickly on the Toome Hill. In the Clinical Hospital of the City of Tartu vascular surgery began to develop. The first transplantation of the blood vessels was made by **Artur Linkberg, Endel Tünder and Kaljo Põder** on 3 May 1960.

In 1966 the laboratory of the artificial kidney was opened.

It was hoped that from the building constructed in 1875 only for 25 years, the hospital could move over to a new building to celebrate its 100th anniversary. The old building was planned to be

preserved as a museum of health care. In the newly independent Republic of Estonia the university gave the building away and now it is a luxurious block of flats under ancient trees in the park. Hundreds of thousands of people have been helped in the hospitals on the Toome Hill. In the maternity hospital thousands of babies were born.

The Observatory of Tartu

For astronomy studies and research the Observatory was founded on the Toome Hill (1808-1810). It was built on the ruins of the medieval Bishop's Castle.

The Observatory of Tartu became notable in the world research when the graduate of the University of Tartu **Friedrich Georg Wilhelm Struve** became its director. At the time of Struve the Observatory received new state-of-the-art observation equipment: from Munich he ordered the meridian ring and the large Fraunhofer refracting telescope. Thanks to the very good instruments the Observatory of Tartu was one of the best research institutes in the field of astronomy in the whole world at that time. To install the Fraunhofer telescope with the 24 cm refractor, the largest in the world, a cupola was built on top of the Observatory (1825). The design for the rotating tower was made by the university Rector Professor Georg Friedrich Parrot.

Next to the Observatory a house for the director, a closed gallery to connect his house with the hall of the Observatory and a small house for the servants were built. During the harmonious marriage lasting for nineteen years 12 children (7 sons and 5 daughters) were born. After the death of his first wife Struve married again and had 6 more children. Under the leadership of the talented organizer and scientist Struve Tartu became an important centre where many scientists were taught in the field of astronomy and geodesy. Later they became leaders of other observatories.

Struve published the catalogue of binary stars "Stellarum duplicum et multiplicitum" (1837) which contained the locations of 2, 714 stars Struve had discovered and measured. Struve was the first to measure the distance of Vega from the Earth which is considered to be an important event in the history of astronomy (perhaps this is why Vega is called the star of Tartu).

Struve also devoted much attention to geodesy. In 1816 he started trigonometrical measurements of Livonia (Southern-Estonia and Northern-Latvia). Under his supervision the measurement became of the meridian arc. One of the points of this arc is in the Observatory of Tartu. Struve measured the meridian up to the Arctic Ocean, General Carl Friedrich Tenner did it down to the southern border of the Russian Empire at the River Danube. The meridian arc measurement from the Arctic Ocean to the Black Sea belongs to the list of cultural heritage of UNESCO.

In Tartu the officers of the Navy and the Army had further educational courses in geodesy and also participated in many Struve's activities in the field of geodesy. For his outstanding research results Struve was elected Corresponding Member (1882) and Academician (1832) of the Academy of Sciences of St. Petersburg.

In 1839 Struve left Tartu for St. Petersburg to establish and lead the Observatory of Pulkovo.

Struve's lifelong activities are commemorated with a monument (sculptor Olav Männi) in front of the Observatory. On the wall of the Observatory there is a relief portrait of Struve together with a text and the years of his working in Tartu. The successor of Struve in the post of the director was **Johann Heinrich von Mädler** (worked in Tartu in 1839-1865) who became famous thanks to his research of the surface of the Moon and the periods of the rotation of planets.

In 1911 the Zeiss refractor telescope with 20 cm lens was bought. In 1927 the Petzval astrograph for the observation of comets and small planets was separated from it.

The Observatory of Tartu has also had special obligations from the state taking care of the time service of the Republic of Estonia. Every day at 13.00 hours all the Estonian establishments were forwarded the right time by telegraph.

In 1924 the Observatory of Tartu started publishing its calendar.

During World War 1 and World War 2 the Observatory of Tartu could not develop but the astronomers-observers could preserve its honourable position as a research centre.

Struve's and Mädler's research was continued by the Estonian researchers **Taavit Rootsmäe, Ernst Öpik, Aksel Kipper** and others. In the centre of the developing town the Observatory was not any longer favourable for observations. In 1963, at the distance of 30 km from Tartu, the new observatory supplied with contemporary equipment started working on the Tõravere uplands. The Observatory of Tartu on the Toome Hill began to function as a popular observatory. It is also a museum. In the building of the Observatory the scientific centre Ahhaa, established in 1998, also works. The centre organizes scientific exhibitions, performances of the science theatre lectures of the Planetarium, interesting laboratory experiments.

The Bridges of the Toome Hill

The Toome Hill is also decorated with the bridges connecting the slopes.

The bridge in the direction of the city centre has a somatic name of **the Angel's Bridge**. It is thought that the name is derived from the word "English" because the park on the Toome Hill is laid out in the English style. The bridge commemorates the first rector of the newly opened university, a progressive scientist of his time, Georg Friedrich Parrot (Rector in 1802-1813).

G. F. Parrot became a close acquaintance of the Russian Emperor Alexander I which allowed him to explain his aspirations and enjoy privileges in building up the University of Tartu. He succeeded in developing such a material base which allowed the University of Tartu to occupy an overstanding place among European universities. The present bridge was built after the design of the university professor of architecture Moritz Hermann Jacobi in 1836-1838.

The bridge is decorated with the relief of Parrot and the text *Primo rectori universitatis Dorpatensis* on one side, on the other there is a sentence *Ortium reficit vires* (rest restores strength) which teaches students to use their time reasonably. The relief was made by the Baltic-German artist Constanze von Wetter-Rosenthal (1913). The present bridge is the second one on the same site. The first bridge was designed by the architect of the university buildings J. W. Krause.

The second bridge of the Toome Hill is called the **Devil's Bridge**. It connects the slopes behind the former hospitals. The Devil's Bridge was designed by the architect Arved Eichhorn in 1913 to celebrate the 300th anniversary of the Romanov dynasty of the Russian Czarist court. Opposite Vallikraavi Street there is the bronze relief of Alexander I (the author C. Wetter-Rosenthal) and the text *Alexandro Primo*. With the ukase of Alexander I as of 1802 the university was opened in Tartu for the second time.

In the middle of the 19th century the students developed a tradition of singing on both bridges during the university festivities.

This tradition has survived until today. Now the university academic choirs sing on the bridges – the women's choir on the Angel's Bridge, the men's choir on the Devil's Bridge.

The monuments of the Toome Hill

Most of the monuments in Tartu are on the alleys of the Toome Hill and they have been erected to commemorate famous graduates of the University of Tartu.

The very first monuments on the Toome Hill are modest – **the Monument to Nations** (1806) in the moat and **Morgenstern's column** (1851) near the Dome Church.

The main building for the university reopened in 1802 was planned to be constructed on the site of St. Mary's Church in the centre of Tartu on its ruins. When digging the foundation for the main building, human bones were excavated from under floor of the church and the surrounding graveyard. By the order of Rector Parrot the bones were reburied next to the Toome Hill into the moat which the townspeople used as a sandpit. For a quarter of the century since building the earthen fortification system the place was in bad state and needed putting in order.

Into the former sandpit in the moat 42 horse-drawn cartfuls of bones were brought. St. Mary's Church was functioning for quite a long time (during the rule of the Catholic Bishop, Russian, Polish and Swedish conquerors) there might have been the bones of Germans, Estonians, Poles, Swedes and Finns. On the site of the new grave a monument after the design of the professor of architecture

Johann Wilhelm Krause called **the Monument to Nations** was erected. Round the monument maple-trees were planted.

In the coming years the monument was hidden in shrubs and fell into the ground. In later periods of tidying the hill the monument was discovered. The university architect Reinhold Guleke designed a new monument which was basically similar to the original one. The upper part of the monument which earlier reminded of the sarcophagus was replaced with a cross and an egg. In this shape the monument survives today.

On 20 September 1985 there was again a ceremony of reburial. When constructing the new study block for the university at 3, Lossi Street, the former garden of St. Mary's Church, human bones were found during archaeological excavations. In the spring of 1995 more bones, which were found during enforcing the foundation of the main building of the university, were reburied to the monument.

The monument to the long-time professor of the university, the first director of the university library and the founder of the museum of ancient art **Johann Karl Simon Morgenstern** (1770-1852) from the year 1851 (the author K. Tool) is laconic.

The professor's private garden was near the Dome Church. As it was fashionable at that time, he also built a small house in it. In 1840 the professor presented his garden to the university which built a sports ground and a bowler house on the site of the former garden house (2, Lai Street). Also, the guard's house was added. The university expressed its gratitude to Morgenstern erecting an obelisk in 1851 on the Toome Hill with the inscription in Latin *Area Morgensterniana*.

In 1860 Morgenstern's former garden became a part of the Toome park.

One of the most distinguished monuments from the point of view of its artistic value is the monument to **Karl Ernst von Baer** (1792-1876), the world famous naturalist, the founder of contemporary embryology (he discovered the ovum). Baer studied at the Faculty of Medicine of the University of Tartu (1810-1814), defended his PhD thesis and after that worked in Western Europe and St. Petersburg.

In advanced years the world renowned scientist lived in Tartu (at present 4, Ceski Street). Baer passed away when he was 84 years old, he is buried to the Raadi cemetery in Tartu. Donations for erecting the monument to Baer came from England, the Netherlands, Italy, Denmark, the USA and bigger Russian towns.

The Baer's monument (sculptor Aleksander Opekušin) was cast in bronze in St. Petersburg. It was festively opened in 1866, on the 10th death-anniversary of the great scientist.

In 1913 the monument (sculptor Adolf Hildebrand) to the distinguished surgeon of the 19th century (one of the first implementers of aseptic methods, great merits in brain surgery) professor **Ernst Bergmann** (1836-1907) was erected on the Toome Hill behind the surgery hospital (21/23, Lossi Street). E. Bergmann studied at the Faculty of Medicine in the years 1854-1860, defended his PhD thesis here and worked as a professor of surgery until 1878, later he worked in Germany.

In 1930 a monument (sculptor Voldenar Mellik) to **Friedrich Robert Faehmann** (1798-1850) was erected on the Toome Hill in front of the Old Anatomical Theatre. Fr. R. Faehmann, one of the first graduates of the University of Tartu of Estonian origin, is a distinguished writer in the older Estonian literature. He started collecting folk legends about the Estonian giant hero Kalevipoeg.

The idea of compiling the national epic about Kalevipoeg belongs to Faehmann. In 1842-1850 Faehmann was a lecturer of the Estonian language at the University of Tartu. He himself has written the legends "the dawn and the dusk", "Creation" and a legend about the Estonian god of songs.

In the legend "The birth of the River Emajõgi" he gives a popular explanation to the birth of the Toome Hill: wild animals when digging the river bed had carried soil for the hill.

On Faehmann's initiative the Learned Estonian Society (1838) was established. As a result of the collection of Estonian spiritual and material cultural heritage, a great amount has reached us.

Fr. R. Faehmann graduated from the Faculty of Medicine of the University of Tartu (1827). He himself studied and later taught his students pharmacology in the building of the Old Anatomical Theatre. This is why the monument stands in front of the Old Anatomical Theatre. Faehmann as a doctor also created Estonian patients of the town.

In 1983 the monument to the first Estonian poet and the glorifier of the Estonian language **Kristjan Jaak Peterson** (1801-1822) was erected.

When Kristjan Jaak was born (14 March 1801) there was no newspaper in the Estonian language, the University of Tartu was not reopened, no Vanemuine society and theatre. The Estonian national epic "Kalevipoeg" was not yet written, the first Estonian singing festival had not taken place, no country of Estonia with its borders existed. The 17-year-old young man wanted to ask.

Whether the language of this land

*in the winds of the song can rise
the heaven and find eternity.*

In Estonia, in the age of the culture in the German language writing poetry in the language of the indigenous people was not common. The sculptor Jaak Soans has depicted the student Kristjan Jaak walking. He is on his way home, to the parents in Riga.

In the history of Tartu there are many persons who deserve gratitude and commemoration, to whom to erect a monument on the Toome Hill.

The last monument was erected on the Toome Hill (June 2004, sculptor Matti Varik) to **Villem Reiman** (1861-1917), a cultural and literary figure, a theologian, was erected in 1931 (sculptor Amandus Adamson) but the Soviet administration destroyed it in the spring of 1950. Reiman, being a national-Lutheran intellectual, tried to keep the aspirations of Estonians to receive education and develop national culture alive. To promote health care, he tried to disseminate information about healthy and sober ways of life. At the end of the 19th century he was ideologically at the head of the fighters who protected the nation against the threat of masses of migrants.

The sacrificial stone with two hewn out bowls near Kristjan Jaak and Villem Reimann had to change its location several times but the mere presence of the stone speaks of the pagan times when there was a sacred grove of ancient Estonians on the Toome Hill.

The cultural heritage of the Toome Hill is diversified. Some people remember their devotion to work in the hospitals, others their hours in the library and the museum, still others know that the university founded in the Swedish times (1632, the foundation inside the hill) worked here. Some people remember how they walked along peaceful and romantic paths in the park.

Many poems and songs, pieces of music have been devoted to the Toome Hill as one of the symbols of Tartu.

In addition to the booklet:

THE DOME CHURCH

The image of the Bishop's Castle and the Dome Church / – Album "Alma mater 1632-1982", in the 16th century page 11/

The interior of the Dome Church / Brotze, p. 251/

A part of the library / Album "Alma mater", p. 36/
/ University history, Part 2, p.251/

The Old Anatomical Theatre

Rotunda and wings / Album "Alma mater", pp. 87, 88
/ V. Vaga "Tartu in art", p. 55
/ University history, Part 2 /

Park

Views of the park on the Toome Hill / Album "Alma mater", pp. 32, 33, 36/

The Observatory

- The Observatory and the astronomer's house / Tartu in old photos, p. 37/
/ Album "Alma mater", pp. 39, 40, 41
Refractor / Album..., pp. 42, 79, University history, Part 1

Hospitals

- E. Bergmann operating on the leg / Album "Alma mater", p. 85 University history, Part 2, p.246/
Professor Zoege von Manteuffel lecturing ""
A page of Pirogov's atlas Album "Alma mater", p. 81
Rubber gloves
Stethoscope
Mask of ether narcosis
White overalls

The bridges

- The Devil's Bridge / Tartu in old photos, p. 45/
The Angel's Bridge Album "Alma mater", pp. 34, 35
V. Vaga "Tartu in art", picture No 58
The opening of the Devil's Bridge in 1913 / University history, Part 2, p. 240 /

The monuments

- Baer / Tartu in old photos, p. 43,
Album "Alma mater", p. 120/
Ernst Bergmann / Tartu in old photos, p. 49,
Album "Alma mater", p. 82
The Monument of Nations / Tartu in old photos, p. 53,
/Album "Alma mater", p. 26,
/ V. Vaga "Tartu in art", picture No 58
V. Vaga "Art in Tartu in the 19th century
A. P. Klara "Monument"/
/ University history, Part 2 /

Very good illustrations to the thanks (good photos) can be found in the album "**Tartu University**" (1999).

OTHER ILLUSTRATIVE MATERIAL

- The map of Tartu History of Estonia 2
The oldest stamp of Tartu in the 13th century H. Kruus "History of Estonia" 3, p. 227, EA.
The documents of establishing the university 1632 Tartu University History 1632-1982
The university stamp from the time of Alexander I, Brotze's Album, p. 224

1802

Students in the 19th century
Students celebrating University history 1 May

Album "Alma mater", p. 96
Tartu University History 1

German knights and Russian soldiers

History of Estonia, pp. 47, 171, 173

The state of Vanemuine
Ravens
The maiden

The Portraits

G. F. Parrot
Krause
Struve
Bergmann
Rauber
Zoege von Manteuffel
A. Schmidt

p. 46
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