Inventors from Latvia.

Scientific, cultural and other achievements.

THE WORLD KNOWS LATVIA BY...

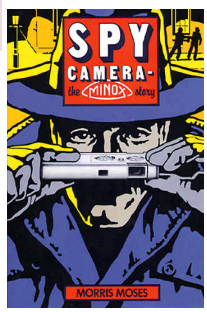
Text by PhD Raimonds Cerūzis

The world's oldest civilisations have understood that a nation's greatest treasure is its people. Latvia is an exceptional example of how great people and great ideas are often born in relatively small countries.
Over the centuries, Latvia's geopolitical situation has been shaped by its strategic Baltic Sea location at the crossroads of trade and conflicting large power interests. The dynamic forces that forged Latvia's turbulent history have produced a unique set of values, traits and characteristics in its people and have led to their recognition around the world.
This is just a brief look at the achievements and contributions of some of the world famous scientists, inventors, artists, athletes, and businessmen whose lives originated or were influenced by Latvia. Also notable are those exhibiting a characteristically Latvian attribute—a passion for exploration, innovation and adventure.

Technical and scientific achievements

The world's smallest mechanical camera, the Minox, and its inventor Walter Zapp (1905–2003)

In 1937, the State Electrotechnical Plant (*Valsts Elektrotehniskā Fabrika—VEF*) in Rīga began production of the world's first functioning miniature camera, the *VEF Minox*, invented by Walter Zapp from Rīga. This was an entirely novel kind of camera, which, thanks to its simplicity and ease of use, not only promoted amateur photography, but also opened up completely new possibilities. This miniature camera (17 x 27 x 80 mm, 125 g), without any additional equipment, gives a sharp, high-contrast image at a distance of as little as 20 cm, and the image can be enlarged up to 20 times without losing quality. With its 8 x 11 mm film, the camera also became an immediate favourite among secret agents, who praised its capacity for rapid and technically simple photographing of documents in excellent quality. Although the *Minox* soon became known as the legendary 'spy camera', most have in fact been sold to ordinary, peace-loving buyers. It still remains in production.



The invention of nitrate fertilisers and Wilhelm Ostwald (1853–1932)

The outstanding Rīga-born chemist Wilhelm Ostwald, professor at Rīga Polytechnic and Leipzig University, worked intensively from 1875 on the analysis of catalytic chemical processes and discovered the fundamental laws of homogenous catalysis of acids and bases, without which the modern-day chemical industry is unimaginable. The method of

$$2\,NH_3 + 4\,O_2 \rightarrow 2\,NO + 3\,H_2O$$
$$2\,NO + O_2 \rightarrow 2\,NO_2$$
$$4\,NO_2 + O_2 + 2\,H_2O \rightarrow 4\,HNO_{3(aq)}$$

obtaining nitric acid devised by Ostwald (the 'Ostwald Process') was first applied during the First World War for making explosives. Also, he made a major contribution to the production of chemicals that raise agricultural productivity. Ostwald developed a new theory and method for catalytic oxidation of ammonia, used in making nitrogen fertilisers. Thus, thanks to Ostwald's contribution to our knowledge of the processes of chemical catalysis, a revolution in farming could take place. Ostwald was awarded the Nobel Prize for Chemistry in 1909.

Founder of embryology Christian Heinrich Pander (1794–1865)

Anatomist and palaeontologist Christian Pander may be regarded as the founder of embryology. For many years (1827–1842), the scientist worked on his estate at Carnikava, near Rīga. Here, he studied the embryonic development of the chicken inside the egg, investigated Palaeozoic rock strata and was the first to describe the remains of the ancient, primitive creatures known as conodonts. Likewise, Pander studied the fossil armoured fish found in Silurian and Devonian strata in the Baltic. Pander's research led him to conclude that the living world had developed through long-term, uninterrupted evolution, so he is regarded among scientists as one of the most prominent evolutionists before Darwin. The research begun by Pander was continued by his associate, another Baltic scientist Karl Ernst von Baer (1792–1876).

Africa explorer Georg August Schweinfurth (1836–1925)

The life of ethnologist, palaeontologist and botanist Schweinfurth began in Rīga, but he was educated at several universities in Germany. The name of this Rigan became known in the world in 1868, when the Humboldt Foundation in Berlin commissioned him to undertake a major research expedition to Central and East Africa. In the course of this journey, in March 1870, he discovered the River Welle (Uele) and explored the upper Nile basin, charting the western feeders of the White Nile, previously shrouded in mystery. Also very important is his research on the inhabitants of the region and the flora and fauna. Thus, for example, Schweinfurth was the first to describe in detail the cannibalistic practices of the Mangbettu people and made the first study of the Pygmy tribes, settling the question as to the presence of Pygmies in tropical Africa. In the 1860s and 70s, Schweinfurth was regarded as the leading African specialist and one of the foremost authorities on the origin of cultivated plants.

Rocket scientist Friedrich Zander (1887–1933)

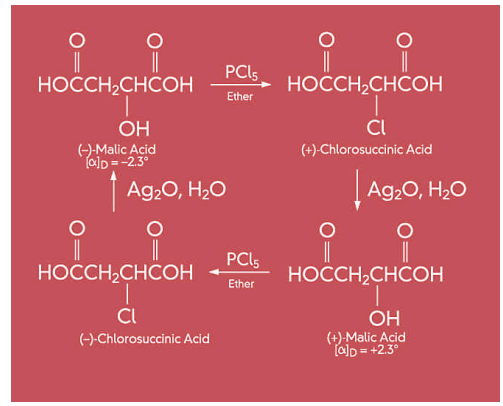
Rīga-born Friedrich Zander began work already in 1908 on jet engine technology, turning in 1917 to the technology and science of space rocketry. He is regarded as one of the world's pioneers of rocket-building and astronautics. Zander worked systematically on the development of rocketry and examined the possibilities of interplanetary travel. In 1929–1933, Zander, at that time in Moscow, Russia, designed the first jet-propelled rocket engines powered with liquid fuel (*GIRD-10*). He had the idea of using the gravitational force of the Moon and the other planets of the Solar System for rapid interplanetary travel, and likewise he developed the theoretical basis for what still seemed quite fantastic ideas at the time, but became reality in the second half of the 20th century: the 'cosmic greenhouse', the 'winged rocket' and the 'space plane'. Zander also developed ideas that still await realisation, such as using the force of light for spaceship propulsion. A crater on the Moon and a small planet bear Zander's name.

The world's best-known orchid researcher Ernests Foldāts (1925–2003)

Latvian biology professor Ernests Foldāts, born in Liepāja in western Latvia, is regarded as the world's foremost orchid specialist. An immense field for research opened up for Foldāts in South America, which has a great diversity of wild orchids. In the years of his life and work in Venezuela, he brought together and systematised an exceptionally voluminous body of information on orchids and described around 70 previously unknown species. In 1998, the Academy of Sciences of Venezuela elected Foldāts the country's leading biologist.

Discoverer of the origin of oil Pauls Valdens (1863–1957)

Latvian chemist Pauls Valdens (known abroad as Paul Walden) was the first scientist to determine the origin of oil (petroleum). Right up to the turn of the 20th century, there was much debate on whether oil is of inorganic origin—from metal carbides and subterranean waters—or whether it is of biological origin. Valdens showed that oil exhibits a kind of optical activity characteristic only of biological origin products. The researcher also made a series of specific discoveries in chemistry (the 'Walden Inversion') and is the founder of two new scientific fields—dynamic stereochemistry and the electrochemistry of nonaqueous solutions. Valdens was several times nominated for the Nobel Prize, but unfortunately, award of the prize was prevented by the outbreak of the First World War.

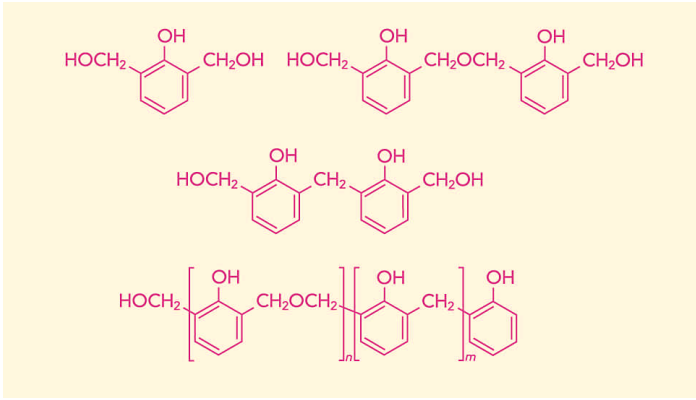


Inventor of the airborne warning and control system–AWACS– Konstantīns Počs (1912–1994)

Konstantīns Počs is one of the most outstanding Latvian scientists and inventors. After more than 30 years of work in the US air force laboratory in Boston, he became a leading designer of meteorological rockets and one of the creators of AWACS. This is a radar-based electronic system designed to carry out airborne surveillance and command, control and communications functions for both tactical and air defence forces. Computers, along with communications and control instruments of the highest standard, are installed in the aircraft. A rotating 'rotodome' is built on the top of the aeroplane tail, in which a radar and identification antennas are installed, supplying the crew with data that are evaluated by computers and other instruments on board. The system is designed and built by Boeing, the aircraft being in the service of NATO and the air forces of the United States, Britain, France, Saudi Arabia and Japan. Počs' patents are the property of the US air force laboratory.

Inventor of modern iron-casting technology Jānis Robiņš (1925)

At the present day, about 90% of the world's modern iron foundries use technology created by Latvian chemist Jānis Robiņš. The technology that Robiņš developed in the second half of the 1960s has greatly rationalised metal casting, improved quality, reduced energy costs and made the process very fast.
Based on the catalytic reaction of phenol-formaldehyde polymers and isocyanate polymers in the presence of a tertiary amine, Robiņš developed the first practical 'coldbox' and the rapid hardening 'no-bake' process, used by the great majority of iron foundries across the world. The process has also been



adapted for casting aluminium and other non-ferrous metals. In 1968, Germany's Daimler-Benz foundry in Mannheim was the first to run the process for automotive parts.
John Deere foundry was the first to use the process for mass-production in North America.

World-famous Criminologist Pēteris Lejiņš (1909–2002)

The Latvian professor Pēteris Lejiņš is regarded as one of the world's leading figures in criminology. For 40 years, Lejiņš worked as professor at the University of Maryland in the USA, and for a long time he was the leading figure in international and comparative criminology, serving as Scientific Director of the International Society of Criminology. Lejiņš also led the American Correctional Association, whose mission is to improve the country's justice system.

Author of novel economic theories and approaches Kārlis Balodis (1864–1931)

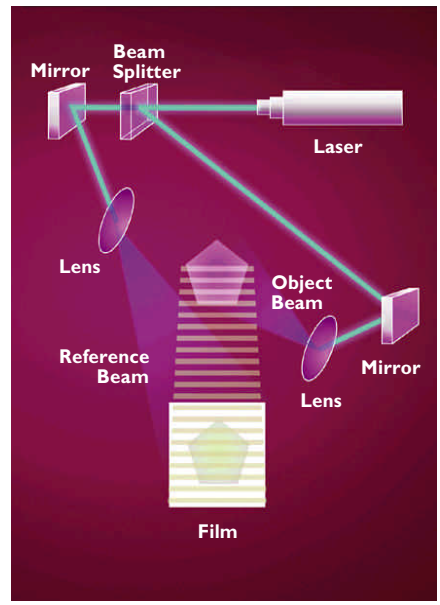
The Latvian Kārlis Balodis (known abroad as Carl Ballod) was an economist of world renown in the 20th century. From the turn of the century, Balodis, as Professor of Economics at the University of Berlin, was engaged in the study of the financial systems of the countries of Europe. Balodis became known throughout the world in the years of the First World War, when he saved the German economy from chaos. He developed a system previously unknown in the world: the 'ration card' scheme of food rationing. This arrangement allowed Germany to survive the economic blockade of the war years and the shortage of raw materials and food it caused, guaranteeing every resident of the country a minimum of necessary foodstuffs. The Latvian economist remained popular after the First World War, when he continued to publish many books with innovative ideas and theories on future industrial and agrarian development in the countries of the world, exerting a strong influence on world economic thinking. Thus, after the First World War, he published a work in several volumes entitled 'The Future State'. The book dealt at length with the great economic significance of 'state capitalism', a particularly important aspect of economic policy in the Western world during the 20th century.

'Blue jean' inventor Jacob Davis (1831–1908)

In 1854 Jacob Davis left Rīga for America, where he opened a tailor shop. In 1870 a woman entered his shop in the little railroad town of Reno (Nevada) looking for a pair of sturdy works pants for her husband. She wanted a pair of pants with strong pockets that wouldn't always tear. Davis came up with the idea of fastening the pockets firmly to the pants with copper rivets. That was the birth of the first riveted blue jean. In 1873 Davis and his partner, a fabric-supplier named Levi Strauss, patented the idea, thus creating one of the world's most recognised and popular casual fashions. In 1907 Jacob Davis sold his patent to the firm *Levi Strauss & Co*.

The invention of three-dimensional holography and Juris Upatnieks (1936)

Juris Upatnieks is among the pioneers of holography: using laser technology, he was able to develop a method for achieving a quality three-dimensional holographic image. In the years 1960–1965, Rīga-born Upatnieks, together with Emmett Leith, developed and experimentally demonstrated an entirely novel method in physical optics for recording holograms, which avoided the problem of two images in the method earlier developed by physicist Dennis Gabor. It was a sensational invention, which attracted a great deal of attention: a three-dimensional image that cannot be distinguished from the real object. At the present day, this discovery is used by the military for optical weapons sights, and in military and civil aviation. On 23 March 1999, the Senate of the Latvian Academy of Sciences awarded Juris Upatnieks the Grand Medal of the Academy for establishing the basic principles of optical holography and developing its worldwide applications.



Riga Black Balsam and its creator Abraham Kunze (18th century)

Latvia has long been known abroad for *Riga Black Balsam*, which has become a sort of national 'brand name' and a favourite souvenir. The unusual dark, strong, quite thick drink resembling a liqueur has long been regarded as possessing various medicinal properties. The history of *Riga Black Balsam* stretches right back to the 18th century. Regarded as the originator of the recipe is Abraham Kunze, who lived in Rīga in the middle of the 18th century. Kunze developed his balsam from the medicinal recipes of 16th and 17th century Rīga apothecaries. The exact recipe is still a carefully-guarded secret, but it is known to consist of 25 ingredients, including berry juices and various plant, herb and root essences. As it changed and developed, the balsam obtained already in 1860 its first medal at a trade exhibition in St Petersburg. *Riga Black Balsam* is nowadays made by only one company, *Latvijas Balzams*, and has received several international awards.

Medicines invented in Latvia

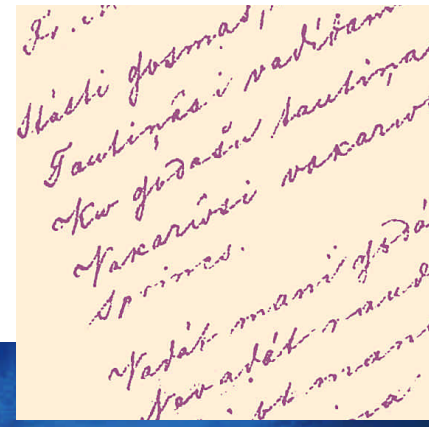
Several dozens of drugs widely used in the world, without which modern-day medicine would be unimaginable, have been developed in Latvia. Since the 1950s, these inventions of world significance in the field of pharmaceuticals have been made at the Latvian Institute of Organic Synthesis in Rīga. The best known among Latvian medicines are *Remantadīns* (*Remantadinum, Rimantadine, Meradan*), a powerful antiviral, anti-flu and anti-encephalitis drug developed in the early 1970s by Jānis Polis (1938), and *Mildronāts* (*Mildronatum, Mildronate*), developed in the 1970s by a team led by Ivars Kalviņš (1947) and used for treating cardiovascular disease, diseases of the central nervous system and bronchial asthma, as well as for increasing energy in healthy people subject to physical or mental overexertion and during convalescence. Also worthy of mention is the cancer drug and antileucosis medicine widely used in the world today, developed by a group of Latvian scientists led by Solomons Hillers (1915–1975) in 1964 and known as *Ftorafur*. This product, also known under

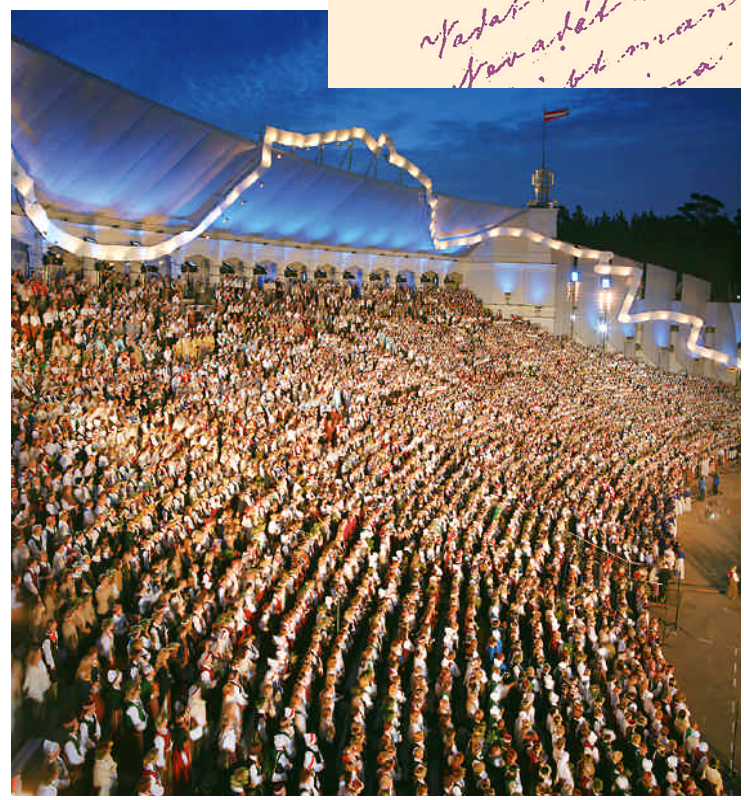
the names *Tegafuri* and *Tegafur*, is produced by more than 30 pharmaceutical companies in Japan, the United States and other countries, and by the *Grindex* company in Latvia, which has been producing and exporting it for over 25 years.

Achievements in culture, literature, art, sports and business

The phenomena of Latvian folksongs and Song Festivals

The Latvian folksongs, the *dainas*, represent one of the unique cultural elements that set apart Latvian traditional culture from that of other peoples of Europe and the world. It is hard to find any other people in the world that has developed so extensively this sort of oral tradition. We will not find anywhere else today such a widespread application of this kind of folklore in all walks of life as in Latvia. Latvian folksong differs from the oral traditions of other peoples by its many centuries old history and the exceptionally large number of songs, totalling 1.2 million. Latvian folksongs are usually recognised in their classic expression, a quatrain to be sung, regarded as characteristically Latvian. For Latvians, the term *daina* is restricted to this specific meaning—the centuries-old tradition of song—rather than simply any popular song that people sing. The *dainas* reflect virtually every aspect of human life, expressing eloquently the Latvians' view of the world and its order, their work ethic and the course of human life.





Latvia is set apart from other countries by its unique, very long and enduring experience in maintaining identity through song. An exceptionally long-lived tradition of symbolic expression of collective consciousness in Latvian culture is organised mass singing. The tradition of song reaches its highest point at the regular All Latvian Song Festivals. The first national Latvian Song Festival was held back in 1873, so that the tradition is now more than 130 years old. A record number of participants joined in the 20th Song and 10th Dance Festival in 1990: a total of 35 438 singers, dancers and musicians.

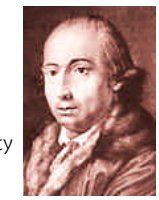
Founder of the national school of painting and promoter of Latvian art Vilhelms Purvītis (1872–1945)

Vilhelms Purvītis remains a worldwide symbol of Latvian painting: along with Janis Rozentāls (1866–1916), he is regarded as having founded the Latvian national school of painting. Purvītis was the first Latvian painter who turned expressly to the depiction of Latvia's natural scenery. He discovered in the natural surroundings a great many novel artistic motifs, and created monumental paintings of characteristic Latvian landscapes. The work of Purvītis generally depicts vivid scenes from the changing seasons in Latvia's natural setting (the bright colours of autumn, winter

snows, spring floodwaters and blossom, etc.). The artist's diverse style shows the influence of Realism, Impressionism, Art Nouveau, Postimpressionism and Expressionism. However, Purvītis did not attain world renown through his painting alone. It was Purvītis who began, with considerable success, the general promotion of Latvian art in the world. Through his efforts, the Latvian Academy of Art was founded in 1921, and in the 1920s–30s Purvītis served as Director of the Rīga City Art Museum, where he led the purposive work of assembling a collection of Latvian fine art and promoting Latvian art abroad.

Man of the 20th Century in Latvia— the poet Rainis (1865–1929)

Rainis (real name: Jānis Pliekšāns) is the all-time most outstanding Latvian poet, author of several volumes of poetry. The first was written in 1903, entitled 'Far off echoes on a blue evening'. He also wrote several popular plays, such as 'Fire and night' (1907), 'Blow, wind!' (1913), 'Love stronger than death' (1927), etc. Throughout his lifetime, Rainis sympathised with left-wing political ideas and early on became politically active. For supporting revolutionary activities, he had to escape repression in Tsarist Russia by fleeing abroad. Rainis went to Switzerland, where he produced several of his most important literary works. Two years after the declaration of Latvia's independence, in 1920, Rainis returned to Latvia, where he was able to freely continue his literary and political activity. Rainis' major contribution to culture and social life in Latvia is the reason why he has been acknowledged the Man of the 20th Century in Latvia.



Rīga and Johann Gotfried Herder (1744–1803)

The name of well-known German writer, pastor and philosopher J. G. Herder, whose activity had a major influence on European literature, linguistics and historical research, is closely connected with Rīga. In the years 1764–1769, Herder taught mathematics, natural sciences, The French language and stylistics at the Rīga Dome School. It was in Rīga that Herder began his literary and scientific activity. During his five-year stay in the city, he wrote his earliest works on literary theory and developed his concept of folklore, based on the Latvian folklore (*folksong*) tradition. Under the influence of the rich Latvian oral tradition, Herder developed the novel concept of the 'folksong' (*Volkslied*). Here he developed his ideas on education, including modern-school (*Realschule*) education, and here too his work as a social activist began. The significance of Herder's time in Rīga for his personal development has permitted some biographers to call him an 'adopted son of Rīga'.

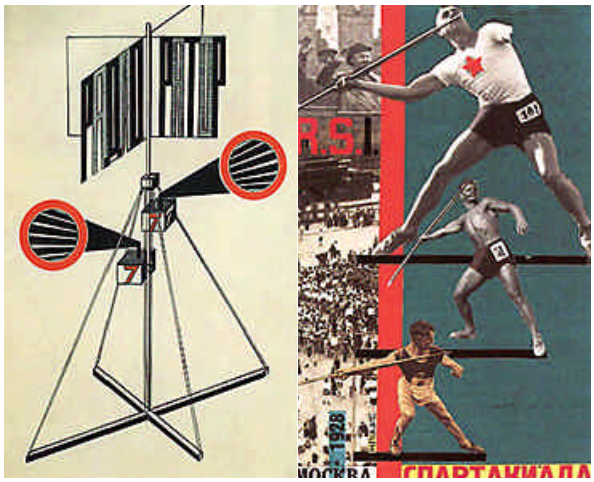
The outstanding world conductor Mariss Jansons (1943)

Widely regarded as the most outstanding conductor at the beginning of the 21st century is Rīga-born Mariss Jansons, who graduated with honours from the Leningrad (St Petersburg) Conservatoire, continuing his training in Vienna and Salzburg. Jansons began his rapid ascent on the steps of his career in music in the early 1970s, winning the International Herbert von Karajan Foundation Competition in Berlin. Already in 1973, the St Petersburg Philharmonic Orchestra invited Jansons as

conductor. In 1979, Jansons moved to work in Norway, where until 2000 he was Musical Director of the Oslo Philharmonic Orchestra. Under his leadership, the orchestra attained world renown. Since 1997, Jansons leads the Pittsburgh Symphony Orchestra in the United States, and in 2003 he was invited to become Chief Conductor of the Bavarian Radio Symphony Orchestra. Jansons has been a guest conductor for all of the world's best-known orchestras and has received various international awards. Leading record companies have recorded outstanding classical music with Jansons as conductor.

Creator of the genre of photo-montage in political campaigning Gustavs Klucis (1895–1938)

Born in a family of poor farm labourers in Valmiera County (north-eastern Latvia), Gustavs Klucis is among the best-known innovative Latvian artists. Already from his early youth, Klucis favoured left-wing political ideas, sympathies that were later vividly expressed in his art. In the years of the First World War, Klucis was called up in the army of the Russian Empire, and thereafter the course of his life took him away from Latvia to St Petersburg. After the Bolshevik coup of October 1917 in Russia, he stayed to live in Moscow, where he developed and elaborated the genre of the political poster. Soon he became Soviet Russia's best-known designer of



propaganda posters. Klucis reached the height of his fame from the mid-20s onwards, when he turned in his designs for political posters to an entirely novel form of expression—the technique of photomontage, augmented with Constructivist style graphic art. Klucis' achievement in the realm of photomontage composition was most highly valued, and so the Kremlin entrusted him with the task of decorating the capital for special celebrations, and commissioned him to design the Soviet Union's pavilions at various international exhibitions in Europe in the 20s and 30s.

Owner of the US airline ATA Georgs Juris Miķelsons (1938)

The life-story of Georgs Miķelsons (known in the USA as George J. Mikelsons) is an outstanding example of attainment of the 'American dream', achieved with great determination and hard work. Miķelsons was born in Latvia, and at the end of the Second World War, fleeing from repression under the USSR, went into exile along with his parents. In 1960 he arrived at Indianapolis in the USA, where he realised his long-cherished dream of becoming a pilot. For several years, Miķelsons headed an air taxi service, and in 1973 purchased the first big plane, a *Boeing 720*. This was the beginning of the *American Trans Air* company, which he founded and led, and which nowadays, under the name *ATA*, has developed into the USA's 10th largest airline, flying to more than 400 cities, the largest operator of commercial and military passenger charter in North America.

Famous Latvian swimmer Jānis Konrads (1942)

Rīga-born Latvian Jānis Konrads (known in Australia as John Konrads) is the best-known Latvian from Australia. In the 1950s and early 60s Konrads, together with his sister Ilze, dominated the record books in swimming. Starting in 1958, Jānis Konrads broke 31 different world records in swimming in various distances. These included all the records for freestyle at distances from 200 up to 1500 m. In 1958, Konrads obtained three medals at the British Commonwealth Games, and the 1960 Olympics in Rome brought him a gold and two bronze medals.

Abstract painting and Mark Rothko (1903–1970)

Artist Mark Rothko, born Marcus Rothkovich in Daugavpils, eastern Latvia, is one of the world's best-known 20th century abstract painters. In 1913, just before the outbreak of the First World War, he emigrated with his family from the territory of Latvia, then under Russian rule, to live in the USA. Rothko has made a very original contribution, saturated with mythology, to such movements in painting as Abstractionism, Expressionism and Surrealism, and is regarded as a pioneer of Abstract Expressionism. In his lifetime, he became one of the best-known painters in the United States. His work is displayed at the Guggenheim and Metropolitan Museums in New York City, the National Gallery of Art in Washington, D.C., the Tate Gallery in London, as well as museums in Japan, Germany, Switzerland, Canada, and Spain.

Well-known Latvian adventurers

Discoverer of the world's highest waterfall Aleksandrs Laime (1911–1994)

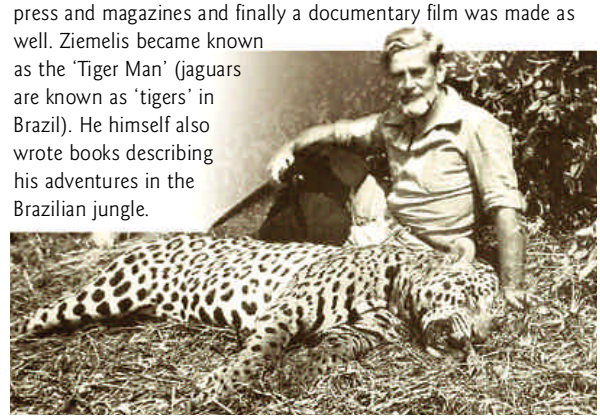
Tucked away in south-eastern Venezuela is one of the world's natural wonders: the highest waterfall in the world (979 m), called Angel Falls (*Salto Angel* in Spanish). This is Venezuela's favourite tourist attraction, beginning its almost kilometre-long fall from the Rio Gauya in the Guiana Highlands (*Macizo de Guayana*) on Mount Auyan-Tepui in Canaima National Park. Between 1949 and 1955, the mountain was explored and the river of the waterfall discovered by Latvian diamond and gold hunter, topographer and jungle researcher Aleksandrs Laime. He also gave this small, but exceptional river in Venezuela the same name as Latvia's longest river—the Gauja. Aleksandrs Laime spent the rest of his life conducting research expeditions and tourist excursions to the falls, near which he himself lived.

Arvīds Blūmentāls (1925) Australia's first renowned crocodile hunter

Regarded as one of the prototypes for the hero of Paul Hogan's blockbuster movie 'Crocodile Dundee' is Latvian-born Arvīds Blūmentāls. In 1945 Blūmentāls was forced to leave Latvia when the country was once again occupied by the USSR. From 1955, Arvīds Blūmentāls, generally known as 'Crocodile Harry', became Australia's best-known crocodile hunter. (In 1957 he even published a book about his activities.) Blūmentāls also studied the way of life of the Aborigines. In northern Australia, he hunted a total of around 10 000 reptiles. After crocodile hunting was banned, he moved south in the mid-1970s to live at Australia's main opal-mining centre Coober Pedy, where he engaged in digging for opals. Blūmentāls' unusual and extravagant residence—a mine—has become a well-known tourist attraction in Australia, featuring in several films. Arvīds Blūmentāls has been honoured in his native town of Dundaga in Latvia by the erection of a monument: a two-tonne stone 'Crocodile'.

The Brazilian 'Tiger Man'— the Latvian Aleksandrs Ziemelis (1890–1970)

At the time of the First World War, Aleksandrs Ziemelis (known as Sasha Siemel) emigrated from Liepāja (western Latvia) to Brazil. Here he became a jungle researcher, guide, photographer, documentary film cameraman, writer, journalist, animal catcher (for zoos and circuses) and a professional jaguar-hunter. Jaguars were doing a great deal of damage to Brazilian stock-rearing, and at that time, there was only one acceptable means of solving the problem—to reduce the number of jaguars. Ziemelis became world famous as the only known white man to hunt jaguars with the spear and the bow and arrow, since firearms were difficult to use in the tall grass of the Brazilian wetlands (the Mato Grosso). World attention was focussed on Ziemelis from 1931, when books were written about him, interviews and articles appeared in the press and magazines and finally a documentary film was made as well. Ziemelis became known as the 'Tiger Man' (jaguars are known as 'tigers' in Brazil). He himself also wrote books describing his adventures in the Brazilian jungle.



The 'Coral Castle' of Eduards Liedskalniņš (1887–1951) in Florida

Florida's famous 'Coral Castle', the stuff of legend in the USA, is the work of one man. It was built by Latvian-born Eduards Liedskalniņš (known as Ed Leedskalnin). Following an unhappy love-affair, he left for North America in 1912, and in 1918 moved to Florida in the USA. Here he created his first coral rock structures, which he developed over time into a monument to the beloved sixteen-year-old girl he had left behind in Latvia and whom he called his 'Sweet Sixteen'. Amazingly, the castle, incorporating about 1000 tonnes of rock, was built by Liedskalniņš single-handedly, using equipment he constructed himself. Contemporaries relate that Eduards created his stone figures by night and never allowed anyone to view the process, so legends circulated widely that he had discovered some secret allowing him to overcome the force of gravity. The castle is the subject of rock star Billy Idol's best-known hit 'Sweet Sixteen' (1987), and has been included in the United States National Register of Historic Places.

THE WORLD KNOWS LATVIA BY...

World mountaineering star Edmunds (Ed) Viesturs (1959)

US-born Latvian mountaineer Ed Viesturs is not only America's leading mountain-climber, but also one of the world's best-known and most experienced mountaineers, mountain guides and consultants. Viesturs has climbed 13 out of the world's 14 highest peaks, and does not use any additional oxygen supply for breathing at high altitudes. He has conquered Mt Everest five times, a record attained by only one other climber

from the West, and he has declared that his main aim is to conquer all 14 of the world's highest peaks without supplemental oxygen. The US film industry has also appreciated Viesturs' experience: he has taken part as consultant and actor in such major Hollywood movies as 'Everest' (1998) and 'Vertical Limit' (2000).

Internet resources

Gateway to Latvian WWW—
http://www.latvia.lv

National Library of Latvia, electronic catalogue—
http://www.lnb.lv

Inventions and Inventors in Latvia—
http://inventions.lza.lv

Latvian Olympic Committee and sports-related links—
http://www.lov.lv

Visual arts in Latvia—
http://www.gallery.lv

Music in Latvia—
http://www.music.lv

America's leading high altitude mountaineer Ed Viesturs—
http://www.edviesturs.com

The 'Coral Castle' of Eduards Liedskalniņš—
http://www.coralcastle.com

Further reading

1. Arvīds Blūmentāls, *Latvietis krokodiļu mednieks Austrālijā* (Latvian crocodile hunter in Australia). (Brisbane: Sauleskrasts, 1957).
2. James E.B. Breslin, *Mark Rothko. A biography*. (Chicago, London: University of Chicago Press, 1993).
3. Jan-Peter Domschke, Peter Lewandrowski, *Wilhelm Ostwald. Chemiker, Wissenschaftstheoretiker, Organisator* (Wilhelm Ostwald—a chemist and theoretician of science). (Leipzig: Urania, 1982).
4. *Latvian folk songs—a living tradition.* (Rīga: The Latvian Institute, 2000).
5. *Latviešu literatūras vēsture* (History of Latvian literature). (3 vols., Rīga: Zvaigzne ABC, 1998–2001).
6. *Latvju enciklopēdija* (Latvian encyclopaedia). (3 vols., Stockholm: Trīs Zvaigznes, 1950–1955).
7. *Latvju enciklopēdija 1962–1982* (Latvian encyclopaedia 1961–1982). (4 vols., Lincoln: ALA Latviešu institūts, 1983–1990).
8. *Māksla un arhitektūra biogrāfijās, I-II* (Art and architecture. Biographies I-II). (Rīga: Latvijas enciklopēdija, 1996).
9. Morris Moses, John Wade, *Spycamera—the Minox story*. (Small Dole: Hove Collectors, 1998).
10. *The Olympic history of Latvia*. (Rīga: Latvijas Olimpiskā Komiteja, 2003).
11. Boris E. Raikov, *Christian Heinrich Pander. Ein bedeutender Biologe und Evolutionist 1794–1865* (Christian Heinrich Pander. A significant biologist and evolutionist). (Frankfurt/M.: Waldemar Kramer, 1984).
12. Georg Schweinfurth, *Im Herzen von Afrika: 1868–1971* (In the heart of Africa: 1868–1971). (Stuttgart: Erdmann, 1984).
13. Sasha Siemel, *Tigrero!* (New York: Prentice-Hall, 1953).
14. *The sound of music in Latvia*. (Rīga: The Latvian Institute, 2003).
15. Andris Stavro, *Aleksandrs Laime un viņa Zelta upe* (Aleksandrs Laime and his 'Gold River'). (Rīga: Jāņa Sēta, 2000).
16. *Herder in Riga* (Rīga: Rīgas vēstures un kuģniecības muzejs, 2005).

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FACT SHEET ON LATVIA

LATVIJAS INSTITŪTS

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It produces publications in several languages on many aspects of Latvia.

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