

Dates of Note

Georg Rushd Brandt, the Swedish chemist who discovered cobalt in 1730, was born on July 21, 1694. Sir **James Chadwick**, the English physicist who received the 1935 Nobel Prize for Physics for his discovery of the neutron, died on July 24, 1974. **Sergey Vasilyevich Lebedev**, the Russian chemist who developed a method for industrial production of synthetic rubber from his 1910 discovery of the polymerization of butadiene, was born on July 25, 1874. **Raoul Pierre Pictet**, the Swiss chemist who pioneered cryogenics from his interest in the artificial production of ice for refrigeration, died on July 27, 1929. **John Dalton** also died on the same date but in 1844, 170 years ago. **Francis Crick** of DNA fame died on July 28, 2004 and noted crystallographer **Dorothy Hodgkin**, on July 29, 1994. **Primo Levi**, the Italian novelist, short-story writer and poet who was a chemist most of his professional life and is known for his, *The Periodic Table*, was born on July 31, 1919. In 1874, the Centennial of Chemistry in the US was celebrated by chemists meeting at Northumberland, Pennsylvania, where Joseph Priestley is buried. The chemists commemorated the 100th anniversary of Priestley's discovery of the element oxygen on August 1, 1774.

August 1 is the date in 1890 that **George Thomas Beilby**, the Scottish industrial chemist who developed the process of manufacturing potassium cyanide, died. Barron **Carl Auer Freiherr von Welsbach**, the Austrian chemist, physicist and engineer whose invention of the gas mantle greatly improved the brightness of light that could be obtained from gas lamps, died on August 4, 1929. **Feodor Lynen**, the German biochemist who shared (with Bloch) the 1964 Nobel Prize for Physiology or Medicine for his research concerning the mechanism and regulation of cholesterol and fatty acid metabolism, died on August 8, 1979. **Benjamin Silliman**, the American geologist and chemist who founded the *American Journal of Science*, and was Yale's first professor of chemistry and natural history (1802), was born on August 8, 1779. Sir **Edward Frankland**, the English chemist and father of valency who was one of the first investigators in the field of structural chemistry popularising the concept of the chemical bond, died on August 9, 1899. Sir **Ernst Boris Chain**, the German-born British biochemist who shared the 1945 Nobel Prize for Physiology or Medicine (with Fleming and Florey) for the work on penicillin, died on August 12, 1979. **Anders Angstrom**, the Swedish physicist whose pioneering use of spectroscopy is recognised in the name of the angstrom unit (10^{-10} metre) was born on August 13, 200 years ago. **Johann Friedrich Miescher**, the Swiss biochemist who studied cell metabolism and discovered nucleic acids, was also born on August 13, but in 1844. **Sune K. Bergstrom**, the Swedish biochemist who shared the 1982 Nobel Prize for Physiology or Medicine, (with Samuelsson and Vane) for the isolation, identification, and analysis of prostaglandins, died ten years ago on August 15, the day the Panama Canal was officially opened 100 years ago.

Robert Bunsen, the German chemist who, with Kirchhoff, showed that each element emits a light of characteristic wavelength but is more recognised for his gas burner,

died on August 16, 1899. **Wendell Meredith Stanley**, the American biochemist who received the in 1946 Nobel Prize for Chemistry (with Northrop and Sumner) for his work on the purification and crystallization of viruses, was born on August 16, 1904. **Richard Syngé**, the British biochemist who shared the 1952 Nobel Prize for Chemistry (with Martin) for the development of partition chromatography, died 20 years ago on August 18. **Franz Carl Schmelkes**, the chemist known for his discovery of azochloramid or chlorazodin [1-(amino-chloroiminomethyl)-imino-2-chloroguanidine] that is used to sterilize wounds and burns, was born on August 19, 1899. **Linus Pauling**, the double Nobel laureate who charted the chemical underpinnings of life itself, worked for nuclear peace, and touted the benefits of vitamin C, died 20 years ago on August 19. On this same date in 1839, 175 years ago, **Louis Daguerre** announced the daguerreotype photographic process that allowed an image to be chemically fixed as a permanent picture. **Jöns Jacob Berzelius**, the noted Swedish scientist and a founder of modern chemistry, was born on August 20, 1779. On August 26, 1959, the Morris Mini-Minor was introduced by the British Motor Corporation. **Carl Bosch**, the German industrial chemist who at BASF directed development of the industrial scale process for production of ammonia, was born on August 27, 1874. The Haber-Bosch process stemmed from the 1908 suggestion by Fritz Haber that nitrogen and hydrogen gases could be combined using high temperatures, high pressure and with catalysts. **Theodor H.E. Svedberg**, the 1926 Swedish Nobel Laureate who studied the chemistry of colloids and invented an ultracentrifuge, was born on August 30, 1884. **André-Louis Debierne**, the French chemist considered the discoverer of the element actinium, died on August 31, 65 years ago.

Paul Vieille, the French scientist who, in 1886, invented smokeless powder called Poudre B that revolutionised the effectiveness of small guns and rifles, was born on September 2, 1854. **Fritz Pregl**, the Austrian 1923 Chemistry Nobel Laureate who developed the microanalytical technique for organic compounds, was born on September 3, 1869. **Julian W. Hill**, the US research chemist who discovered cold drawing, a technique of strengthening polymer fibres by stretching, was born on September 4, 1904. Together with Wallace Carothers, they had been synthesising polymer chains and removing a sample of the resultant product from the still. Hill observed that the molten polymer could be drawn into fibres, which after cooling could be stretched or "cold drawn" to give remarkably strong fibres with molecular weights over 12,000. **August Kekulé**, the German chemist who devised the ring structure of carbon atoms and provided the cyclic structure for benzene was born on September 7, 1829. **Hermann von Helmholtz**, the German physiologist and physicist who developed thermodynamics and introduced the concept of free energy, died on September 8, 120 years ago. **Thomas Graham**, the Scottish chemist often referred to as the father of colloid chemistry who studied the diffusion of gases and in 1833 proposed the law named after him, died on September 16, 1869. That day in 1884 saw cocaine

first used as a local anaesthetic by Carl Koller to immobilize a patient's eye for surgery; he initiated the modern era of local anaesthesia. **Karl Raimund Popper**, the noted Austrian-British philosopher of science, died on September 17, 1994. It is 60 years on September 20 since the first successful test compilation and execution of a computer program using what became FORTRAN was run by IBM. **Richard Zsigmondy**, the Austrian awarded the Nobel Prize for Chemistry in 1925 for his demonstration of the heterogenous nature of colloid solutions and for his methods that have since become fundamental in modern colloid chemistry, died on September 23, 1929. This same date 75 years ago saw the death of **Sigmund Freud**. **Robert John Kane**, the Irish chemist who is remembered for his book, *The Industrial Resources of Ireland* (1944), was born on September 24, 1809. **Paul Scherrer**, the Swiss physicist who collaborated with Peter Debye in the development of X-ray diffraction analysis, died on September 25, 1969. **Joseph-Louis Proust**, the French chemist who proved that the constituent elements of any pure chemical compound remain invariant regardless of the compound's source and, thus, strongly supported Dalton's law of definite proportions, was born on September 26, 1754. **Karl Friedrich Mohr**, the German analytical chemist and geologist who invented or improved a number of titration procedures, died on September 28, 1879. The date marks 125 years since the third legal definition of the metre was adopted at the Paris General Conference. **Friedrich Mohs**, the German mineralogist who devised the Mohs scale to compare mineral hardness, died 175 years ago on September 29. **Jean-Marie Lehn**, the French chemist who (with Pedersen and Cram) was awarded the 1987 Nobel Prize for Chemistry for his contribution to the laboratory synthesis of molecules that mimic molecules in living organisms, has his 75th birthday on September 30; Jean-Marie has been a frequent visitor to NZ of late.

Charles J. Pedersen, the Korean-American who with Lehn and Cram was awarded the 1987 Nobel Prize for Chemistry for his synthesis of the crown ethers, was born on October 3, 1904. **Maurice Wilkins**, New Zealand-born British biophysicist known for his X-ray diffraction studies of DNA, died on October 5, 10 years ago. Sir **Harry**

W. Kroto, the English chemist who (with Smalley and Curl) received the 1996 Nobel Prize for the discovery of the fullerenes (and another visitor to NZ), has his 75th birthday on October 7. **Clemens Alexander Winkler**, the German chemist who discovered the element germanium, died on October 4, 1904. **Max Von Laue**, the noted X-ray crystallographer, was born on October 9, 1879. Sir **Henry Tizard**, the English chemist, inventor and administrator, who devised the octane rating system for petroleum fuels, died on October 9, 1959. **Friedrich Bergius**, the German chemist who converted coal dust and hydrogen directly into gasoline and lubricating oils without isolating intermediate products, was born on October 11, 1884. **James Prescott Joule**, the English physicist and inventor who has the unit of energy named after him, died on October 11, 125 years ago. October 13 marks the day in 1884 when Greenwich, London was adopted as the universal meridian and is the day 100 years ago that **Garrett Morgan** invented and patented the first gas mask. Sir **William Jackson Pope**, the English chemist who produced an optically active compound that contained a chiral nitrogen atom, but no chiral carbon, died on October 17, 75 years ago. **Christian Friedrich Schönbein**, the German-Swiss chemist who discovered and named ozone in 1840 and was the first to describe guncotton (nitrocellulose), was born on October 18, 1799. **Marguerite Perey**, the French chemist who identified francium, the last naturally occurring element to be discovered (January 7, 1939), and was the personal assistant of Marie Curie, was born on October 19, 1909. **Lewis Urry**, the Canadian-American chemical engineer who invented the ubiquitous alkaline battery and, later, the lithium battery, died on October 19, 2004. **Paul A.M. Dirac**, the English physicist and mathematician who originated quantum mechanics and the spinning electron theory, died on October 20, 1984, as did **Carl Cori**, the American biochemist who, with his wife Gerty, discovered a phosphate-containing form of glucose and its universal importance to carbohydrate metabolism. On October 21, 1824, **Joseph Aspdin**, a stone mason, patented Portland cement.

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