

**Jons Jakob Berzelius**  
Discovery of element 58 cerium (**1803**)  
Discovery of element 90 thorium (**1815**)  
Discovery of element 34 selenium (**1817**)  
Discovery of element 14 silicon (**1824**)

**Heinrich Rose**  
(Kiel, 1821)  
**Wilhelm H. Heintz**  
(Berlin, 1844)  
**Johannes Wislicenus**  
(Zurich, 1860)  
**Percy Frankland**  
(Wuerzburg, 1883)

**Sir Thomas Stevenson**

**Sir Frederick G. Hopkins**  
Discovery of growth stimulating vitamins  
**Physiology & Medicine Nobel 1929**

**Norman W. Pirie**  
(Cambridge, MA 1935?)

Hanes-Woolf plot (**1932**)

**Luis F. Leloir**  
Biochemical pathways involved in synthesis of carbohydrates, glycogen

**Sir Ernst B. Chain**  
Discovery of penicillin  
**Physiology & Medicine Nobel 1945**

**Richard L.M. Synge**  
Development of liquid-liquid partition chromatography (**1941**)  
**Chemistry Nobel 1952**

**Colin B. Reese**  
(Cambridge, 1956)

**John E. Sulston**  
Genetic regulation of organ development and programmed cell death

**Physiology & Medicine Nobel 2002**



**Har G. Khorana**  
Interpretation of genetic code and its function in protein synthesis  
Synthesis of a gene (**1979**)  
**Physiology & Medicine Nobel 1968**

## BERZELIUS TREE #5

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**Neil K. Adam**  
(Cambridge, MA 1917)

**James F. Danielli**  
(UC London, 1932?)

**Peter Mitchell**  
Biological energy transfer; chemiosmotic theory (**1961**)  
**Chemistry Nobel 1978**

**Robinson** annulation (**1935**)  
synthesis of alkaloids  
**Chemistry Nobel 1947**

**Wilson Baker**  
(Oxford, 1924)

**William D. Ollis**  
(Bristol, 1949)

**Richard J. Roberts**  
Discovery of split genes  
**Physiology & Medicine Nobel 1993**

**Sir Edward P. Abraham**  
(Oxford, 1941)

**John E. Walker**  
Elucidation of enzymatic mechanism of ATP synthesis

**Chemistry Nobel 1997**

**Albert Szent-Gyorgyi**  
Discovery of biological combustion process; vitamin C (**1928**); catalysis of fumaric acid  
**Physiology & Medicine Nobel 1937**

**Malcolm Dixon**  
(Cambridge, 1925)  
enzyme inhibition plots (**1953**)  
interpretation of pH rate profiles in terms of straight line segments (**1953**)  
enzyme classifications according to type of reaction catalyzed (EC numbers) (**1956**)

**Harusada Sugino**  
(Manchester, 1927)

**Takeshi Matsumoto**  
(Hokkaido, 1956)

**Suzuki** coupling (**1979**)