

## CHRONOLOGY

- circa 323 B.C. ARISTOTLE: nature of reproduction and inheritance; species hybrids; recorded *Drosophila*.
- 1676 GREW: sex in plants.
- 1677 LEEUWENHOEK: saw animal sperm.
- 1716 MATHER: effects of cross-pollination in maize.
- 1759 WOLFF: epigenesis.
- 1761–1766 KÖLREUTER: began systematic study of hybrid plants.
- 1823–1846 AMICI: fertilization in seed plants.
- 1853 THURET: fertilization observed (in *Fucus*).
- 1859 DARWIN: *Origin of Species*.
- 1866 MENDEL: paper on peas.
- 1868 DARWIN: *Variation in Animals and Plants*.
- 1871 MIESCHER: “nuclein” (nucleoprotein).
- 1875 O. HERTWIG: fertilization of the sea-urchin egg.
- 1881 FOCKE: reference to Mendel.
- 1882–1885 FLEMMING, FOL, STRASBURGER, VAN BENEDEN, BOVERI, *et al.*: chromosome behavior worked out in some detail.
- 1883 ROUX: hypothesis on function of mitosis.
- 1883–1889 WEISMANN: germ-plasm theory.
- 1888–1889 MAUPAS: conjugation and senescence in ciliates.
- 1889 ALTMANN: nucleic acid.  
DE VRIES: *Intracellular Pangenesis*.
- 1894 BATESON: *Materials for the Study of Variation*.
- 1900 CORRENS, DE VRIES, TSCHERMAK: rediscovery of Mendel’s paper, and confirmation of his results.  
LANDSTEINER: human blood groups.
- 1901 MCCLUNG: X chromosome as sex determinant.  
DE VRIES: *Die Mutationstheorie*.

- 1902 BATESON, CUÉNOT: Mendelism in animals.  
BOVERI: polyspermy experiments and the individuality of the chromosomes.  
CORRENS: time and place of segregation.
- 1903 LEVENE: chemical distinction between DNA and RNA.  
SUTTON: chromosomes and Mendelism.
- 1904 CUÉNOT: multiple alleles.
- 1905 BATESON AND PUNNETT: linkage.  
STEVENS, WILSON: relation of sex chromosomes to sex determination.
- 1906 DONCASTER AND RAYNOR: sex-linkage.  
LOCK: suggested the relation between linkage and exchange of parts between homologous chromosomes.
- 1907 E. AND E. MARCHAL, LUTZ: polyploidy.
- 1907–1908 BAUR: lethal gene in *Antirrhinum*.
- 1908 GARROD: alkaptonuria and genetic analysis of metabolism.  
HARDY, WEINBERG: equilibrium formula for Mendelian populations.  
LUTZ: trisomy.  
NILSSON-EHLE: multiple gene interpretation.
- 1909 CORRENS: demonstration of plastid inheritance.  
JANSSENS: chiasmatype hypothesis.  
JOHANNSEN: *Elemente der exakte Erblichkeitslehre*.
- 1910 VON DUNGERN AND HIRSZFELD: heredity of human ABO blood groups.  
MORGAN: sex-linkage in *Drosophila*; recombination between sex-linked genes.
- 1911 MORGAN: linkage between sex-linked genes; strength of linkage due to nearness together in a chromosome.
- 1912 GOLDSCHMIDT: intersexuality in *Lymantria*.  
MORGAN: recessive lethal gene.
- 1913 EMERSON AND EAST: multiple genes in maize.  
STURTEVANT: chromosome maps based on linkage.
- 1914 BRIDGES: cytology and nondisjunction.  
RENNER: balanced lethals in *Oenothera*.
- 1915 MORGAN, STURTEVANT, MULLER, AND BRIDGES: *The Mechanism of Mendelian Heredity*.
- 1916 LITTLE AND TYZZER: genetics of susceptibility to transplanted tumors.
- 1917 WINGE: polyploidy.
- 1919 CASTLE: multiple genes and selection.  
RENNER: pollen lethals in *Oenothera*.
- 1921 BRIDGES: triploidy, genic balance, and sex determination.

- 1922 CLELAND: chromosome rings in *Oenothera*.  
L. V. MORGAN: attached-X in *Drosophila*.
- 1924 HALDANE: algebraic analysis of the effects of selection.
- 1925 ANDERSON: proof of 4-strand crossing over.  
BERNSTEIN: multiple allele interpretation of human ABO blood groups.  
STURTEVANT: position effect.
- 1926 STURTEVANT: genetic proof of inversion.
- 1927 BELLING: interpretation of chromosome rings.  
LANDSTEINER AND LEVINE: MN blood groups in man.  
LOEB AND WRIGHT: genetics of transplant specificity in mammals.  
MULLER: induction of mutations by X rays.
- 1928 GRIFFITH: transformation in *Pneumococcus*.
- 1930 FISHER: *Genetical Theory of Natural Selection*.  
TODD: blood-group specificity in fowl.
- 1932 WRIGHT: genetic drift and evolution.
- 1933 HEITZ AND BAUER, PAINTER: nature of salivary gland chromosomes.
- 1935 EPHRUSSI AND BEADLE: transplantation work on *Drosophila* eye colors begun.  
WINGE: sexual reproduction in yeast.
- 1937 DOBZHANSKY: *Genetics and the Origin of Species*.  
SONNEBORN: mating types in *Paramecium*.
- 1940 BUTENANDT, WEIDEL, AND BECKER:  $v^+$  substance is kynurenine.  
LANDSTEINER AND WIENER: Rh blood groups in man.
- 1941 BEADLE AND TATUM: biochemical mutants in *Neurospora*.
- 1944 AVERY, MACLEOD, AND MCCARTY: transforming agent in *Pneumococcus* is DNA.
- 1945 LEWIS: beginning of pseudoallelism study.  
OWEN: blood groups in cattle twins.
- 1946 HERSHEY: recombination in bacteriophage.