

## 2 FIRST FRENCH PERIODICALS

### Concerning the Royal Academy in Paris

- 41 · JEAN-BAPTISTE DU HAMEL & BERNARD DE FONTENELLE:  
*History of the Royal Academy* (1733)

### Journal of the Learned

- 43 · ANONYMOUS: *Letter written from Oxford* (1665)  
46 · ANONYMOUS: *Review of Anatomical Description* (1669)  
47 · OLE ROEMER: *Speed of light* (1676)  
50 · ANONYMOUS: *Review of Principia* (1688)

### Memoirs of the Royal Academy of Sciences

- 53 · DENIS DODART: *History of plants* (1676)  
55 · JEAN MÉRY: *Two fetuses enclosed in the same membrane* (1693)  
57 · ANTOINE DE JUSSIEU: *Corispermum Hyssopifolium* (1712)  
59 · ÉTIENNE FRANÇOIS GEOFFROY: *Different relationships observed  
in chemistry* (1718)  
60 · PIERRE-LOUIS MOREAU DE MAUPERTUIS: *The figure of  
the earth* (1737)  
64 · COMTE DE BUFFON: *Conservation and re-establishment of forests* (1739)  
66 · NICOLAS DESMAREST: *Nature of prismatic basalt* (1771)  
69 · ANTOINE-LAURENT LAVOISIER: *Combustion* (1777)  
72 · ANTOINE-LAURENT LAVOISIER: *Modern horizontal beds deposited  
by the sea* (1789)

## 3 INTERNATIONALIZATION AND SPECIALIZATION

### German Literature

- 77 · GOTTFRIED LEIBNIZ: *Calculation of various dimensions of figures* (1684)  
78 · MARIA SIBYLLA MERIAN: *Metamorphosis of insects* (1705)  
80 · JOHANN HEINRICH LAMBERT: *Measurement of humidity* (1769)  
83 · ANONYMOUS: *Review of Three Letters on Mineralogy* (1790)

### American Literature

- 84 · BENJAMIN SMITH BARTON: *American species of Dipus* (1799)  
86 · THOMAS JEFFERSON: *Bones of quadruped of the clawed kind* (1799)  
88 · CASPAR WISTAR: *Description of bones deposited by President* (1799)  
89 · THOMAS SAY: *North American insects of the genus Cicindela* (1818)  
93 · JOSEPH HENRY: *Production of currents and sparks of electricity* (1832)  
94 · OLIVER WENDELL HOLMES: *Contagiousness of puerperal fever* (1843)  
94 · JOSEPH LISTER: *Antiseptic principle* (1867)

### Specialized Literature: Biology

97 · ANONYMOUS: *Hibiscus Rosa Sinensis* (1791)

99 · T. H. HUXLEY: *Review of Vestiges* (1854)

101 · CHARLES LYELL & J. D. HOOKER: *Papers by Darwin and Wallace* (1858)

### Specialized Literature: Physics

106 · JULIUS ROBERT MAYER: *Forces of inorganic nature* (1842)

108 · RUDOLF CLAUSIUS: *Nature of motion we call heat* (1857)

### Specialized Literature: Chemistry

110 · FRIEDRICH WÖHLER: *Alcoholic fermentation* (1839)

112 · ARCHIBALD SCOTT COUPER: *New chemical theory* (1858)

115 · HERMANN KOLBE: *"Modern" chemistry* (1871)

## SELECT PRE-MODERN CLASSICS

### Earth Science

119 · JAMES HUTTON: *Theory of the earth* (1788)

119 · JOHN PLAYFAIR: *Account of James Hutton* (1805)

### Biological Sciences

121 · ALFRED RUSSEL WALLACE: *Tendency of varieties to depart from the original* (1858)

123 · GREGOR MENDEL: *Plant hybridization* (1866)

### Medical Science

125 · RUDOLF VIRCHOW: *Cellular pathology* (1855)

128 · LOUIS PASTEUR: *Germ theory* (1880)

131 · ROBERT KOCH: *Etiology of tuberculosis* (1882)

### Chemistry

133 · JÖNS JACOB BERZELIUS: *Cause of chemical proportions* (1814)

137 · GUSTAV KIRCHHOFF & ROBERT BUNSEN: *Analysis by observations of spectra* (1860)

139 · AUGUST KEKULÉ: *Composition of aromatics* (1865)

141 · DIMITRI IVANOVICH MENDELEEV: *Properties and atomic weights of the elements* (1869)

### Physics

144 · JAMES CLERK MAXWELL: *Faraday's lines of force* (1855)

147 · WILHELM CONRAD RÖNTGEN: *New kind of ray* (1895)

149 · PIERRE CURIE, MARIE SKLODOWSKA CURIE, & G. BÉMONT: *New, strongly radioactive substance* (1898)

## 5 EQUATIONS, TABLES, AND PICTURES

### Equations

- 154 · ALBERT EINSTEIN: *Does the inertia of a body depend on energy content?* (1905)  
155 · G. H. HARDY: *Mendelian proportions in a mixed population* (1908)

### Tables

- 158 · JEAN PERRIN: *Brownian motion and molecular reality* (1909)  
161 · DAVID WEAVER ET AL.: *Endogenous immunoglobulin gene expression* (1986)

### Pictures

- 164 · ALFRED WEGENER: *Origin of continents* (1912)  
168 · C. T. R. WILSON: *Tracks of ionizing particles* (1912)  
170 · R. P. FEYNMAN: *Space-time approach to quantum electrodynamics* (1949)  
172 · LINUS PAULING ET AL.: *Structure of proteins* (1951)  
175 · H. B. WHITTINGTON: *The enigmatic animal Opabinia Regalis* (1975)  
178 · CHRISTIANE NÜSSLEIN-VOLHARD & ERIC WIESCHAUS: *Mutations in Drosophila* (1980)  
180 · MICHAEL B. EISEN ET AL.: *Genome-wide expression patterns* (1998)  
182 · J. K. WEBB ET AL.: *Fine structure constant* (2001)  
185 · J. RICHARD GOTT III ET AL.: *Map of the universe* (2003)

## 6 ORGANIZING SCIENTIFIC ARGUMENTS

### Beginning

- 191 · MILAN N. STOJANOVIC & DARKO STEFANOVIC: *Deoxyribozyme-based molecular automaton* (2003)  
193 · M. K. WU ET AL.: *Superconductivity at 93 K* (1987)

### Middle

- 195 · OLIVER H. LOWRY ET AL.: *Protein measurement* (1951)  
199 · OSWALD T. AVERY, COLIN M. MACLEOD, & MACYLN McCARTY: *Transformation of pneumococcal types* (1944)

### End

- 201 · MOTOO KIMURA: *Evolutionary rate at molecular level* (1968)  
202 · M. GELL-MANN: *Model of baryons and mesons* (1964)  
204 · PERCY L. JULIAN & JOSEF PIKL: *Studies in the indole series* (1935)

### From Start to Finish

- 205 · CHIEN LIU ET AL.: *Halted light pulses* (2001)

## SCIENTIFIC WRITING STYLE: NORMS AND PERTURBATIONS

### Norms

- 221 - W. BAADE & F. ZWICKY: *Supernovae & cosmic rays* (1934)
- 223 - E. G. BLIGH & W. J. DYER: *Lipid extraction and purification* (1959)
- 224 - F. SANGER ET AL.: *Nucleotide sequence of bacteriophage* (1977)
- 226 - J. GUILLERMO PAEZ ET AL.: *EGFR mutations in lung cancer* (2004)

### Perturbations: Playfulness

- 228 - R. A. ALPHER, H. BETHE, & G. GAMOW: *Origin of chemical elements* (1948)
- 230 - A. T. WILSON & M. CALVIN: *Photosynthetic cycle* (1955)
- 231 - J. F. BUNNETT & F. J. KEARLEY: *Mobility of halogens* (1971)
- 232 - H. M. SHAPIRO: *Fluorescent dyes* (1977)
- 233 - ANONYMOUS: *Hotter than hell* (1972)

### Perturbations: Belligerence

- 234 - H. DINGLE: *Science and modern cosmology* (1953)
- 236 - R. G. BREENE: *Erratum* (1967)
- 237 - V. V. BELOUSSOV: *Against ocean-floor spreading* (1970)

### Perturbations: Writing with Style

- 238 - WILLIAM THOMSON: *Blue ray of sunrise* (1899)
- 240 - HUGH M. SMITH: *Synchronous flashing of fireflies* (1935)
- 241 - V. NABOKOV: *New or little known Nearctic neonympha* (1942)
- 244 - S. J. GOULD & R. C. LEWONTIN: *Spandrels of San Marco* (1979)
- 246 - BARBARA McCLINTOCK: *Responses of the genome* (1984)
- 248 - P. J. E. PEEBLES & JOSEPH SILK: *Cosmic book of phenomena* (1990)
- 249 - ANDREW WILES: *Fermat's Last Theorem* (1995)

## CONTROVERSY AT WORK: TWO CASE STUDIES

### Evolution Controversy

- 252 - R. A. FISHER & E. B. FORD: *Spread of a gene in natural conditions* (1947)
- 252 - SEWALL WRIGHT: *Genetics of populations* (1948)
- 252 - R. A. FISHER & E. B. FORD: *The "Sewall Wright effect"* (1949)
- 252 - SEWALL WRIGHT: *Fisher and Ford on "The Sewall Wright effect"* (1951)

### Dream Controversy

- 259 - SIGMUND FREUD: *Interpretation of dreams* (1900)
- 260 - SEYMOUR FISHER & ROGER P. GREENBERG: *Credibility of Freud's theories* (1977)

- 260 · J. ALLAN HOBSON & ROBERT W. MCCARLEY: *Brain as a dream state generator* (1977)
- 260 · ROBERT W. MCCARLEY & J. ALLAN HOBSON: *Psychoanalytic dream theory* (1977)
- 260 · ANTHONY L. LABRUZZA: *Activation-synthesis hypothesis of dreams* (1978)
- 260 · GERALD W. VOGEL: *Alternative view of the neurobiology of dreaming* (1978)
- 260 · GORDON G. GLOBUS: *Dream content: random or meaningful* (1991)

## 9 SELECT MODERN CLASSICS

### Discovering Crucial Facts

- 268 · T. H. MORGAN: *Sex limited inheritance in Drosophila* (1910)
- 270 · J. D. WATSON & F. H. C. CRICK: *Structure of DNA* (1953)
- 272 · H. W. KROTO ET AL.: *Buckminsterfullerene* (1985)

### Providing Theoretical Explanations

- 274 · H. J. MULLER: *Change in the gene* (1922)
- 276 · EDWIN HUBBLE: *Relation between distance and velocity among nebulae* (1929)
- 278 · LISE MEITNER & O. R. FRISCH: *Disintegration of uranium by neutrons* (1939)
- 280 · RAYMOND DAVIS: *Solar neutrinos* (1964)

### Performing Thought Experiments

- 282 · A. EINSTEIN: *Electrodynamics of moving bodies* (1905)
- 285 · WERNER HEISENBERG: *Quantum kinematics and mechanics* (1927)
- 288 · A. EINSTEIN, B. PODOLSKY, & N. ROSEN: *Quantum-mechanical description* (1935)

### Turning to Technology

- 290 · ENRICO FERMI: *First chain reacting pile* (1946)
- 292 · INTERNATIONAL HUMAN GENOME SEQUENCING CONSORTIUM: *Human genome* (2001)

## BIBLIOGRAPHY

- 297 · FIFTY BOOKS WE RECOMMEND IN SCIENCE STUDIES
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