BOOK REVIEWS

A Naturalist of Note

Buffon. A Life in Natural History. JACQUES ROGER. Cornell University Press, Ithaca, NY, 1997. xviii, 492 pp., illus. $49.95 or £39.50. ISBN 0-8014-2918-8. Cornell History of Science. Translated from the French edition (1989) by Sarah Lucille Bonnefoi. L. Pearce Williams, translation editor.

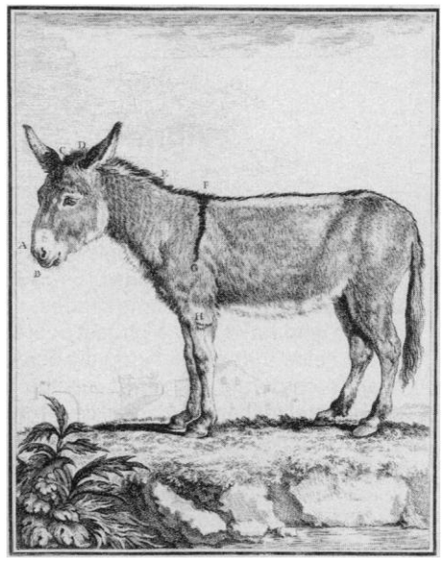
There must be few figures in the pantheon of modern science whose significance is harder to gauge than Georges-Louis Leclerc, comte de Buffon. It is not simply that, from the 18th century to our own, contradictory opinions have been voiced on Buffon's importance or merits. Even disregarding his detractors (such as Condorcet, who while preparing Buffon's eulogy for the *Académie des Sciences* referred privately to his subject as a "charlatan," "empty and bombastic"), those convinced of Buffon's instrumental role in science's development have often found it difficult to define that role precisely.

Buffon himself created many of these difficulties. His originality commonly came out in oblique ways, in the essays and descriptive articles issuing from the Royal Press over four decades in the 36-volume *Histoire naturelle*, whose status as science or as literature was somewhat ambiguous even in an age when such distinctions meant considerably less than they do now. Buffon evidently had more than a little in common with the reforming *philosophes*, yet experienced bitter quarrels with most of them; but in these and other conflicts Buffon's way was to refrain from public dispute. Holding high civil appointment for nearly half a century as superintendent of the king's garden and natural history collections, and aspiring to account for animate nature (including mankind) within a framework of natural laws, Buffon contended with the theological authorities by submitting when necessary and then carrying on much as if nothing had happened. Intellectually and politically, it was no small part of Buffon's adeptness to see where obstacles lay and steer around them, not into them. Somehow he managed to be at once both engaged and aloof. One understands how some of Buffon's contemporaries found him frustrating.

Another reason for Buffon's intriguing elusiveness arises from the fact that his more evident scientific successes were more in pointing in new and promising directions than in effecting definitive resolutions of particular problems. Having experienced his own redirection from mathematical interests to a career as naturalist, he was emblematic of the heightened prestige of empirical, descriptive science during the second half of the 18th century. Buffon disdained the taxonomic preoccupation so evident in his time, emphasizing instead how things relate to the circumstances of their existence and advocating the integration of natural history within *la physique*, meaning a casual understanding of nature. He did much to move this process forward, notwithstanding the fact that critics then and now could point to significant defects in his own physics. For the historical-mindedness that was soon to become so large a feature of the natural sciences, much is owed to Buffon, even though from a later perspective his own conceptions of development in nature are recognized as set within boundaries that sanctioned neither open-ended organic change nor a truly investigative historical study of nature's archives.

No scholar ever did more to refine and raise our estimation of Buffon's significance than the late Sorbonne historian

Bird/Le Manchot, from "*Histoire nature des oiseaux*, "Planches enluminess" by Buffon.



Donkey, from Buffon's "*Histoire naturelle, générale et particulière*" Paris Edition (1750–1804). Vol. 4 of Quodrapods section, Plate 11.

Jacques Roger. This book, the culmination of several decades of research and intended as a synthesis accessible to broadly informed readers as well as specialists, appeared in 1989 to general acclaim. It is both a life and an analysis of Buffon's thought. Reviewers of the French edition tended to characterize it as exemplary of a high-level "intellectual history" approach to the history of science. This is not an unfounded judgment. Roger's highest priority was indeed to illuminate the basic features of Buffon's ideas and their relations to and differences from the prevailing thought of predecessors and contemporaries. He also wanted to point to some of the historical consequences of Buffon's ideas. That Roger thought these were momentous can be judged from his suggestion that we take Buffon to have been the most important naturalist between Aristotle and Darwin. But to say that Roger excelled at intellectual history—not always thought of as unalloyed praise these days among historians of science—is to fail to accord full justice to his achievement in this book. Buffon is more, here, than the versatile, fecund, and contentious mind that, it is true, was Roger's basic reason for writing his life; we also find a self-assured and ambitious personality and a skilled operator in a wondrously intricate social and intellectual environment. Roger's book is rich in observations and insights, often given with pithy wit, about the conditions of scientific life in *Ancien Régime* culture.

This edition comes with supplemental notes that provide elements of knowledge Roger inevitably presumed in his French

Vignette: Safety in Numbers

Ever since the meritocratic apparatus in the United States became mature, around 1970, the undergraduate atmosphere in Ivy League colleges has been one of intense anxiety about the perils of pursuing careers outside the professions of law, medicine, and MBA business . . . . Because these fields are tightly screened on the basis of test scores and grades, they present the lowest risk career option to people who have very high test scores and grades. . . .

In fields that aren't so tightly screened, from entrepreneurship to show business to corporate management, the odds are much longer for members of the cognitive elite than they are in the profession. So a stampede into the professions, driven by risk aversion, is a key cultural phenomenon for meritocratic Ivy league students, the subject of many hand-wringing commencement speeches (and, years later, of the students' middle-aged longueurs). It would even be possible to take the perverse position that people with high IQs may have actually become less powerful in recent decades because they are so firmly channeled into advisory roles in the professions.

—*Nicholas Lemann*, in *Intelligence, Genes, and Success: Scientists Respond to The Bell Curve* (Bernie Devlin, Stephen E. Fienberg, Daniel P. Resnick, and Kathryn Roeder, Eds.; Copernicus/Springer-Verlag)

audience. Though the translation reads well on the whole, it contains some disconcerting lapses, and unfortunately several of these are serious enough to baffle or mislead the reader.

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Browsings

Genome Analysis. A Laboratory Manual. Vol. 1, Analyzing DNA. Bruce Birren, Eric D. Green, Sue Klapholz, Richard M. Myers, and Jane Roskams, Eds. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1997. xviii, 675 pp., illus. $225, ISBN 0-87969-495-5; paper, $135, ISBN 0-87969-496-3.

The first volume of a work intended to provide "theoretical background, laboratory protocols, and resource materials" for both newcomers and experienced practitioners; the three further volumes will deal with detecting genes, cloning systems, and mapping genomes.

The Quark Machines. How Europe Fought the Particle Physics War. Gordon Fraser. Institute of Physics, Philadelphia, 1997. viii, 210 pp., illus. Paper, $20 or £12.99. ISBN 0-7503-0447-2.

A long-time editor at the international accelerator facility CERN recounts the history of elementary-particle physics from the beginning of the 20th century to the present.

Books Received

AIDS in Africa and the Caribbean. George C. Bond *et al.*, Eds. Westview (HarperCollins), Boulder, CO, 1997. xvi, 234 pp., illus. $56, ISBN 0-8133-2878-0; paper, $22, ISBN 0-8133-2879-9.

Algorithms on Strings, Trees, and Sequences. Computer Science and Computational Biology. Dan Gusfield. Cambridge University Press, New York, 1997. xviii, 534 pp., illus. $59.95. ISBN 0-521-58519-8.

Animal Learning and Cognition. A Neural Network Approach. Nestor A. Schmajuk. Cambridge University Press, New York, 1997. xii, 340 pp., illus. $84.95, ISBN 0-521-45086-1; paper, $44.95, ISBN 0-521-45696-7. Problems in the Behavioural Sciences, 16.

Atlas of Galactic Neutral Hydrogen. Dap Hartmann and W. B. Burton. Cambridge University Press, New York, 1996. x, 236 pp., illus., + CD-ROM. $150. ISBN 0-521-47111-7.

Atlas of the Human Brain. Jürgen K. Mai, Joseph Assheuer, and George Paxinos. Academic Press, San Diego, 1997. viii, 328 pp., illus. $135, ISBN 0-12-465360-x; paper, $89.95, ISBN 0-12-465361-8.

Base Excision Repair of DNA Damage. Ian D. Hickson, Ed. Chapman & Hall, New York, and Landes, Austin, TX, 1997. viii, 184 pp., illus. $89.95. ISBN 0-412-13161-7. Molecular Biology Intelligence Unit.

Behavioral Approaches to Conservation in the Wild. Janine R. Clemmons & Richard Buchholz, Eds. Cambridge University Press, New York, 1997. xviii, 382 pp., illus. $69.95, ISBN 0-521-58054-4; paper, $29.95, ISBN 0-521-58960-6. Based on a symposium, Lincoln, NB, 1995.

Bits of Power. Issues in Global Access to Scientific Data. Committee on Issues in the Transborder Flow of Scientific Data, National Research Council. National Academy Press, Washington, DC, 1997. xiv, 235 pp., illus. $44.95. ISBN 0-309-05635-7.

Breast Cancer Screening. Ismail Jatoi, Ed. Landes, Austin, TX, 1997. xii, 193 pp., illus. $89.95. ISBN 0-412-14161-2. Medical Intelligence Unit.

The Casimir Effect and Its Applications. V. M. Mostepanenko and N. N Trunov. Clarendon (Oxford University Press), New York, 1997. xii, 199 pp., illus. $100. ISBN 0-19-853998-3. Translated by R. L. Znajek.

Cells, Tissues, and Disease. Principles of General Pathology. Guido Majno and Isabelle Joris. Blackwell Science, Cambridge, MA, 1997. xviii, 974 pp., illus. $95. ISBN 0-86542-372-5.

Chaos in Discrete Dynamical Systems. A Visual Introduction in 2 Dimensions. Ralph H. Abraham, Laura Gardini, and Christian Mira. Telos (Springer-Verlag), Santa Clara, CA, 1997. xxvi, 246 pp., illus., + CD-ROM. $59.95. ISBN 0-387-94300-5.

Complexity. Hierarchical Structures and Scaling in Physics. R. Badii and A. Politi. Cambridge University Press, New York, 1997. xiv, 318 pp., illus. $74.95. ISBN 0-521-41890-9. Cambridge Nonlinear Science Series, 6.

Computational and Psychophysical Mechanisms of Visual Coding. Michael Jenkin and Laurence Harris, Eds. Cambridge University Press, New York, 1997. xii, 361 pp., illus. $49.95. ISBN 0-521-57104-9.

Contemporary Approaches to Neuropsychological Assessment. Gerald Goldstein and Theresa M. Incagnoli, Eds. Plenum, New York, 1997. x, 420 pp. $65. ISBN 0-306-45521-8. Critical Issues in Neuropsychology.

Diversity and Classification of Flowering Plants. Armen Takhtajan. Columbia University Press, New York, 1997. x, 643 pp. $95. ISBN 0-231-10098-1.

DNA Sequencing. From Experimental Methods to Bioinformatics. Luke Alphey. Bios Scientific, Oxford, and Springer-Verlag, New York, 1997. xiv, 206 pp., illus. Paper, $34.95. ISBN 0-387-91509-5. Introduction to Biotechniques.

Does the Weather Really Matter? The Social Implications of Climate Change. William James Burroughs. Cambridge University Press, New York, 1997. xii, 230 pp., illus. $24.95. ISBN 0-521-56126-4.

Electrical Properties of Cells. Patch Clamp for Biologists. Louis J. DeFelice. Plenum, New York, 1997. xii, 244 pp., illus. $49.50. ISBN 0-306-45345-2.

Electronic Excitations at Metal Surfaces. Ansgar Liebsch. Plenum, New York, 1997. xii, 336 pp., illus. $85. ISBN 0-306-45545-5. Physics of Solids and Liquids.

Electrospray Ionization Mass Spectrometry. Fundamentals, Instrumentation, and Applications. Richard B. Cole, Ed. Wiley-Interscience, New York, 1997. xxii, 577 pp., illus. $84.95. ISBN 0-471-14564-5.

Embryos, Genes and Birth Defects. Peter Thorogood, Ed. Wiley, New York, 1997. x, 359 pp., illus. $139.95, ISBN 0-471-97196-0; paper, $69.95, ISBN 0-471-95565-5.

The End of Certainty. Time, Chaos, and the New Laws of Nature. Ilya Prigogine, in collaboration with Isabelle Stengers. Free Press (Simon & Schuster), New York, 1997. x, 228 pp., illus. $24 or C$32.50 or £20. ISBN 0-684-83705-6. Translated from the French edition (1996).

The Evolution of Mating Systems in Insects and Arachnids. Jae C. Choe and Bernard J. Crespi, Eds. Cambridge University Press, New York, 1997. x, 387 pp., illus. $100, ISBN 0-521-58029-3; paper, $44.95, ISBN 0-521-58976-2.

Experiments in Cooperation. Assessing U.S.–Russian Programs in Science & Technology. Glenn E. Schweitzer. Twentieth Century Fund, New York, 1997. xii, 177 pp. Paper, $9.95. ISBN 0-87078-405-6. Russia in Transition. Twentieth Century Fund/Century Foundation Report.

The Family Problem. New Internal Algebraic and Geometric Regularities. Gerald L. Fitzpatrick. Nova Scientific Press, Issaquah, WA, 1997. xii, 100 pp., illus. $24.95. ISBN 0-9655695-0-0.

Fieldwork. A Geologist's Memoir of the Kalahari. Christopher Scholz. Princeton University Press, Princeton, NJ, 1997. vi, 191 pp., illus. $24.95 or £19.95. ISBN 0-691-01226-1.

For the Record. Protecting Electronic Health Information. Committee on Maintaining Privacy and Security in Health Care Applications of the National Information Infrastructure. National Research Council. National Academy Press, Washington, DC, 1997. xxii, 264 pp., illus. $29.95. ISBN 0-309-05697-7.

Fourier Descriptors and Their Applications in Biology. Pete E. Lestrel, Ed. Cambridge University Press, New York, 1997. xii, 466 pp., illus. $85. ISBN 0-521-45201-5.

From Ion Channels to Cell-to-Cell Conversations. Ramón Latorre and Juan Carlos Sáez, Eds. Plenum, New York, 1997. xxviii, 504 pp., illus. $135. ISBN 0-306-45605-2. Series of the Centro de Estudios Científicos de Santiago.