



Review: Riverine Mammals

Reviewed Work(s):

Otters by C. F. Mason; S. M. Macdonald
J. A. Estes

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have been extensively studied, one example being the adhesions of *Escherichia coli* and gonococcal pili, as befits the medical significance of these bacteria. For others we are presented with more modest but just as intriguing studies, as in the case of lectin-like substances from nitrogen-fixing bacteria. Wisely, Mirelman has included systems in which the strict definition of lectins may not in fact be met, such as sugar-binding bacterial toxins. A novel and surely beneficial feature of the chapter on lectins from the protozoan *Entamoeba histolytica* is the joint authorship by individuals (one of them the editor) who have apparently worked independently, which shifts the burden of explaining inconsistencies from the reader to the experimenters themselves.

Those of us who study lectins can take heart in the material presented here. Not only are we provided with appropriate data, we are allowed to see the frustrations that confront investigators in this area. We learn that, under physiologic conditions, certain lectins from slime molds may bind to phospholipids rather than to the sugars with which they react in more conventional laboratory conditions and that a substance derived from the etiologic agent of cholera may achieve hemagglutination by proteolysis rather than by its lectin-like activity. Indeed, a recurring theme in this book is that, if lectins do play a role in establishing or maintaining a physiologic or pathologic association involving microorganisms, they do so in concert with other mechanisms, and not alone.

In general, the chapters are well written and extensively referenced. An unfortunate exception is the chapter on the protozoan *Giardia lamblia*, which seems particularly plagued with editorial problems. Throughout the book there is a problem with incomplete or inappropriate figure legends: the autoradiograph on p. 161 and the accompanying legend are incompatible. On a more conceptual level, I was surprised that some contributors apparently overlooked the possibility that the cells interacting with microorganisms may themselves bear lectins, thereby contributing to the associative process.

The inherent interest of the material, the unique compilation of topics, the general format, and the fact that a significant amount of the information presented has not been previously published are all factors that make this volume worthwhile reading for anyone interested in the mechanisms of microbial adherence and its consequences.

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Solar Physics

Progress in Solar Physics. Review Papers Invited to Celebrate the Centennial Volume of *Solar Physics*. C. DE JAGER and Z. ŠVESTKA, Eds. Reidel, Dordrecht, 1986 (U.S. distributor, Kluwer, Hingham, MA). xii, 621 pp., illus. \$99.50. Reprinted from *Solar Physics*, vol. 100, nos. 1–2.

Plans for a new journal to be entitled *Solar Physics* were initiated in 1965 with Cornelis de Jager (Utrecht) as the founding editor. De Jager was joined early in the endeavor by Zdeněk Švestka, and the two have served as coeditors of the journal since its first issue appeared in early 1967. The journal enjoyed explosive growth in its early years and is now a monthly publication, presenting over 200 articles a year in some 2000 pages.

Progress in Solar Physics reprints a collection of review papers commissioned for the 100th volume of the journal. The collection includes 30 contributions by 31 contributors—16 from the United States, three from the Netherlands, two each from the Soviet Union, England, and the Federal Republic of Germany, and one each from France, Denmark, Japan, Italy, Switzerland, and Czechoslovakia.

The subjects treated encompass solar interior processes (oscillations, dynamo, convection), chromospheric and coronal physics, prominences, flares, solar rotation, stellar activity and analogs, radio observations, solar wind and interplanetary observations, high-resolution observations, and future directions of the discipline. Thus, virtually all aspects of solar studies, both observational and theoretical, are represented.

As might be expected with such a collection, the contributions are uneven. Three papers, by Roxburgh, Bahcall, and Gough, explore solar interior oscillations and neutrino generation in some detail. Together they offer the reader an excellent overview, with appropriate quantitative backing, of this important subject. A paper by Nordlund is a superior description, in physical terms, of solar convection. However, the paper by Ruzmaikin on the solar dynamo is brief to a fault and, in addition to placing excessive mathematical emphasis on the nonlinear nature of equations, hardly represents the body of effort in this area broadly, or well. Fortunately, Bevedere compensates for this lack with a good survey of dynamo theory in the context of solar and stellar activity. Some of the unevenness arises from differences in the intended breadth of reviews, as evidenced by the contrast between titles such as "The solar wind" and "Imaging of coronal mass ejections by the Helios spacecraft." Additional unevenness results from inevitable differences in authors' treatment

of their subjects; for example, contrast the contribution by Zirker entitled "Progress in coronal physics"—actually only a brief outline of the subject area—with the aforementioned effort by Nordlund.

On the other hand, this unevenness results in a pleasant mixture of research surveys and retrospective summaries with a dash of detail about current efforts. Howard offers a look at eight decades of research at the Mount Wilson solar observatory; Dunn surveys the problems and current efforts in the development of high-resolution solar telescopes; and Parker closes the volume with a ringing advocacy of the study of physical processes on, in, and around the sun within the context of progress in stellar physics.

Is the volume worthwhile? Emphatically, yes. The contributions are less deep and uniformly broad than those included in the recent massive survey *Physics of the Sun*, edited by Sturrock and also published by Reidel (in three volumes), but they are no less valuable, for *Progress in Solar Physics* provides a more recent, fresh mixture of efforts—current and past—in the broad field of solar science. With its diverse approach, the present work will be useful to both the specialist and the interested observer.

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Riverine Mammals

Otters. Ecology and Conservation. C. F. MASON and S. M. MACDONALD. Cambridge University Press, New York, 1986. viii, 236 pp., illus. \$34.50.

Mason and Macdonald have written an authoritative and readable book on otters that is the best available general account of the group. It will be a useful source to all who are interested in these poorly known animals.

The title suggests a comprehensive treatment of various otter species, but the book actually is devoted largely to European otters, *Lutra lutra*. Three-quarters of the text specifically concerns this species, and only in the final chapter are the other 12 or so species discussed. This imbalance probably reflects the authors' history of research and personal involvement with European otters, as well as their apparent concern for the species' shrinking range, dwindling numbers, and bleak future, rather than a disparity of available information about different otter species.

Following a brief introduction, the book's five chapters consider two distinct themes, otter biology and conservation, with an emphasis on the latter. I found chapters 2 and 6, which respectively review the biology of European otters and all other species, to be the most interesting and substantive parts of the book. These chapters are well-organized, telegraphic accounts that appear both thorough and accurate. Chapters 3 through 5 mainly concern population status and the conservation of European otters. Here the authors raise a wealth of issues that are presented and discussed objectively and fairly, despite the fact that their own sympathies often show through. They do an admirable job of weaving together relevant biological facts, historical records, and information from other species or other components of riverine systems in their analysis of why otters have fared well in some areas and poorly in others. The approach may be useful in developing conservation strategies for other wildlife species. However, excessive detail is given on several matters of only local interest for which cause and effect relationships remain uncertain. As is often the case with poorly known populations for the decline of otters usually are rather speculative.

This book is an accounting of facts rather than a synthesis. I was mildly disappointed not to find more comparisons among species, especially since much comparative information is contained in the book. Even though a stronger comparative and synthetic emphasis would have attracted the attention of scientists with broader disciplinary interests, as written this book is an important account of the Lutrineae.

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Books Received

Abortion. The Continuing Controversy. Carol C. Collins and Oliver Trager, Eds. Facts on File, New York, 1986. vi, 185 pp., illus. \$24.95. An Editorial on File Book.

Acid Deposition and the Acidification of Soils and Waters. J. O. Reuss and D. W. Johnson. Springer-Verlag, New York, 1986. viii, 119 pp., illus. \$36.

Advances in Cancer Control. Health Care Financing and Research. Lee E. Mortenson, Paul F. Engstrom, and Paul N. Anderson, Eds. Liss, New York, 1986. xx, 480 pp., illus. \$74. Progress in Clinical and Biological Research, vol. 216. From a meeting, Washington, DC, March 1985.

Advances in the Biology of Turbellarians and Related Platyhelminthes. Seth Tyler, Ed. Junk, Dordrecht, 1986 (U.S. distributor, Kluwer, Hingham, MA). xviii, 357 pp., illus. \$112. Developments in Hydrobiology, 32. From a symposium, Fredericton, New Brunswick, Canada, Aug. 1984. Reprinted from *Hydrobiologia*, vol. 132 (1986).

The Age of Manufactures. Industry, Innovation and Work in Britain 1700-1820. Maxine Berg. Oxford University Press, New York, 1986. 378 pp., illus. Paper, \$10.95.

Algebraic Methods in Semantics. Maurice Nivat and John C. Reynolds, Eds. Cambridge University Press, New York, 1985. xvi, 634 pp., illus. \$95. Based on a seminar, Fontainebleau, France, June 1982.

Biological Monitoring of Environmental Contaminants (Plants). M. A. S. Burton. Prepared with the support of the United Nations Environment Programme by the Monitoring and Assessment Research Centre, University of London, London, 1986. xii, 247 pp., illus. Paper, \$30. Executive Summary. ii, 5 pp. A Technical Report (1986). MARC Report, no. 32.

Biotechnology. Potentials and Limitations. S. Silver, Ed. Springer-Verlag, New York, 1986. x, 313 pp., illus. \$31. Life Sciences Research Report, 35. From a workshop, Berlin, March 1985.

Biotechnology and Ecology of Pollen. David L. Mulcahy, Gabriella Bergamini Mulcahy, and Ercole Ottaviano, Eds. Springer-Verlag, New York, 1986. xxiv, 528 pp., illus. \$46. From a conference, Amherst, MA, July 1985.

Brain Edema. Y. Inaba, I. Klatzo, and M. Spatz, Eds. Springer-Verlag, New York, 1986. xx, 682 pp., illus. \$110. From a symposium, Tokyo, Nov. 1984.

The Breadth and Depth of Continuum Mechanics. A Collection of Papers Dedicated to J. L. Ericksen on His Sixtieth Birthday. Invited by C. M. Dafermos, D. D. Joseph, and F. M. Leslie. Springer-Verlag, New York, 1986. xii, 778 pp., illus. Paper, \$63. Reprinted from *Archive for Rational Mechanics and Analysis*, vols. 82-90 (1983-1985).

Building Models for Conservation and Wildlife Management. A. M. Starfield and A. L. Bleloch. Macmillan, New York, and Collier Macmillan, London, 1986. xiv, 253 pp., illus. \$34.95. Biological Resource Management.

The Cactus Primer. Arthur C. Gibson and Park S. Nobel. Harvard University Press, Cambridge, MA, 1986. x, 286 pp., illus. \$39.95.

Chemical Waste. Handling and Treatment. K. R. Müller et al., Eds. Springer-Verlag, New York, 1986. xii, 360 pp., illus. \$76.

The Coccidian Parasites (Protozoa, Apicomplexa) of Artiodactyla. Norman D. Levine and Virginia Ivens. University of Illinois Press, Urbana, 1986. vi, 266 pp., illus. Paper, \$19.95. Illinois Biological Monographs, 55.

Complications of Viral and Mycoplasmal Infections in Rodents to Toxicology Research and Testing. Thomas E. Hamm, Jr., Ed. Hemisphere, New York, 1986. xvi, 191 pp., illus. \$49.95. Chemical Industry Institute of Toxicology Series. From a conference, Raleigh, NC, Feb. 1983.

Computer Graphics and Molecular Modeling. Robert Fletterick and Mark Zoller, Eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1986. x, 145 pp., illus. Paper, \$29. Current Communications in Molecular Biology. From a meeting, Cold Spring Harbor, NY, Dec. 1985.

Concurrent Programming in Ada. Alan Burns. Cambridge University Press, New York, 1985. xiv, 241 pp., illus. \$27.95. The Ada Companion Series.

Contemporary Classics in the Life Sciences. James T. Barrett, Ed. ISI Press, Philadelphia, 1986. 2 vols. Vol. 1, Cell Biology. xviii, 368 pp. \$39.95. Vol. 2, The Molecules of Life. xviii, 282 pp. \$39.95. Contemporary Classics in Science.

Contrast Analysis. Focused Comparisons in the Analysis of Variance. Robert Rosenthal and Ralph L. Rosnow. Cambridge University Press, New York, 1985. x, 107 pp., illus. \$29.95; paper, \$10.95.

Contribution of Clusters Physics to Materials Science and Technology. From Isolated Clusters to Aggregated Materials. J. Davenas and P. M. Rabette, Eds. Nijhoff, Dordrecht, 1986 (U.S. distributor, Kluwer, Hingham, MA). xvi, 646 pp., illus. \$100. NATO Advanced Science Institutes Series E, no. 104. From an institute, Cap d'Agde, France, June 1982.

Creativity. Genius and Other Myths. Robert Weisberg. Freeman, New York, 1986. xii, 169 pp., illus. \$21.95; paper, \$9.95. A Series of Books in Psychology.

Crops I. Y. P. S. Bajaj, Ed. Springer-Verlag, New York, 1986. xviii, 608 pp., illus. \$125. Biotechnology in Agriculture and Forestry, vol. 2.

Crystal Growth Processes. J. C. Brice. Blackie, Glasgow, and Halsted (Wiley), New York, 1986. x, 298 pp., illus. \$61.95.

Dynamics of Extinction. David K. Elliott, Ed. Wiley-Interscience, New York, 1986. x, 294 pp., illus. \$49.95. From a conference, Flagstaff, AZ, Aug. 1983.

Earth and the Human Future. Essays in Honor of Harrison Brown. Kirk R. Smith, Feriudun Fesharaki, and John P. Holdren, Eds. Westview, Boulder, CO, 1986. xii, 258 pp., illus. \$17.85.

East-West Tensions in the Third World. Marshall D. Shulman, Ed. Norton, New York, 1986. x, 243 pp., illus. Paper, \$6.95.

The Ecological Implications of Body Size. Robert Henry Peters. Cambridge University Press, New York, 1986. xii, 329 pp., illus. Paper, \$16.95. Cambridge Studies in Ecology. Reprint, 1983 edition.

Electromagnetism for Engineers. An Introductory Course. P. Hammond. 3rd ed. Pergamon, New York, 1986. xii, 187 pp., illus. \$35; paper, \$10.75. Applied Electricity and Electronics Series.

Embryogenesis in Angiosperms. A Developmental and Experimental Study. V. Raghavan. Cambridge University Press, New York, 1986. xiv, 303 pp., illus. \$39.50. Developmental and Cell Biology Series.

Energy and Resource Quality. The Ecology of the Economic Process. Charles A. S. Hall, Cutler J. Cleveland, and Robert Kaufman. Wiley-Interscience, New York, 1986. xxiv, 577 pp., illus. \$47.50. Environmental Science and Technology.

Energy Use in Rural Kenya. Household Demand and Rural Transformation. Richard Hosier. Beijer Institute, Stockholm, and Scandinavian Institute of African Studies, Uppsala, Sweden, 1985. xii, 177 pp., illus. SKr 75. Energy, Environment and Development in Africa, 7.

Fertilizer Technology and Use. O. P. Engelstad, Ed. 3rd ed. Soil Science Society of America, Madison, WI, 1985. xx, 633 pp., illus. \$40; members' first copy, \$32.

Fieser and Fieser's Reagents for Organic Synthesis. Vol. 12. Mary Fieser. Wiley-Interscience, New York, 1986. x, 643 pp., illus. \$47.50.

Filters Against Folly. How to Survive Despite Economists, Ecologists, and the Merely Eloquent. Garrett Hardin. Penguin, New York, 1986. x, 240 pp. Paper, \$6.95. Reprint, 1985 edition.

For-Profit Enterprise in Health Care. Committee on Implications of For-Profit Enterprise in Health Care, Institute of Medicine. Bradford H. Gray, Ed. National Academy Press, Washington, DC, 1986. xxiv, 556 pp., illus. \$39.50.

Forensic Science Progress. Vol. 1. H. Mukoyama et al. Springer-Verlag, New York, 1986. x, 172 pp., illus. \$53.

Fossil Arthropods as Living Animals. The Royal Society of Edinburgh, Edinburgh, 1985. ii pp. + 101-399, illus. Paper. \$50. Transactions of the Royal Society of Edinburgh: Earth Sciences, vol. 76, parts 2 and 3. From a symposium, Edinburgh, Oct. 1984.

Foundations for a National Biological Survey. Ke Chung Kim and Lloyd Knutson, Eds. Published in cooperation with Holcomb Research Institute and Illinois Natural History Survey by the Association of Systematics Collections, c/o Museum of Natural History, University of Kansas, Lawrence, 1986. xii, 215 pp., illus. Paper, \$18. Based on a symposium, 1985.

Frontiers in Bioinorganic Chemistry. Antonio V. Xavier, Ed. VCH, Deerfield Beach, FL, 1986. xiv, 736 pp., illus. \$92.50. From a conference, Algarve, Portugal, April 1985.

Fundamentals and Applications of Chemical Sensors. Dennis Schuetzle and Robert Hammerle, Eds. American Chemical Society, Washington, DC, 1986. x, 394 pp., illus. \$74.95. ACS Symposium Series, 309. Based on two symposiums, 1983 and 1984.

Fundamentals of Hot Wire Anemometry. Charles G. Lomas. Cambridge University Press, New York, 1986. xii, 211 pp., illus. \$52.50.

A Genetic Switch. Gene Control and Phage λ. Mark Ptashne. Cell Press, Cambridge, MA, and Blackwell, Palo Alto, CA, 1986. x, 128 pp., illus. Paper, \$16.95.

Ghostwriting and Other Essays. Eugene Garfield. ISI Press, Philadelphia, 1986. xx, 540 pp., illus. \$35. Essays of an Information Scientist, vol. 8: 1985.

Global Resources and International Conflict. Environmental Factors in Strategic Policy and Action. Arthur H. Westing, Ed. Oxford University Press, New York, 1986. xii, 280 pp., \$29.95. Based on a symposium, Stockholm, Oct. 1985.

Group Structure of Gauge Theories. L. O'Raifeartaigh. Cambridge University Press, New York, 1986. x, 172 pp., illus. \$34.50. Cambridge Monographs on Mathematical Physics.

Image and Mind. Stephen Michael Kosslyn. Harvard University Press, Cambridge, MA, 1986. xviii, 500 pp., illus. Paper, \$10.95. Reprint, 1980 edition.

Laser Optoacoustic Spectroscopy. V. P. Zharov and V. S. Letokhov. Springer-Verlag, New York, 1986.

(Continued on page 1336)