

Western Deer: A Status

Report

Mule and Black-Tailed Deer of North America. OLOF C. WALLMO, Ed. Illustrated by Dean Rocky Barrick. University of Nebraska Press, Lincoln, 1981. xviii, 606 pp. \$29.95. A Wildlife Management Institute Book.

Mule and black-tailed deer, races of *Odocoileus hemionus*, occur in western North America and have been hunted by humans for centuries. With European settlement, unrestricted hunting reduced deer populations, but recovery occurred as state conservation agencies began to license and regulate hunters. Wildlife conservation was also assisted by the sporting arms and ammunition industry, which created a foundation now called the Wildlife Management Institute. To encourage the wildlife research needed for conservation, the Institute, in the mid-1930's, helped promote a federal tax on sporting arms and ammunition, to provide the states with necessary funds.

The results of two decades of study of deer were published in 1956 in *The Deer of North America* (W. P. Taylor, Ed.) under the sponsorship of the Wildlife Management Institute. That volume provided support for the view that deer populations, in the prevailing absence of much natural predation, would increase, overuse their plant food, and decline. Subsequently, most state deer management programs sought a maximum annual sustained yield of deer, through controlled recreational hunting. At the same time, research focused more closely on deer nutrition and the prospects for im-

provement of deer diet through vegetation management.

The present volume, then, draws on two decades of work on nutrition and population biology, ecology and habitat management, and conflicts between deer conservation and competing land uses. The 16 well-qualified authors have been active in deer research, either in western universities or in state or federal agencies.

The results reflect the strengths and weaknesses of wildlife investigation and conservation in the United States. On the strong side, financial support has been sustained, and long-term studies of captive, tamed, individually marked deer have produced much well-organized information on deer distribution, morphology, physiology, nutrition, metabolism, disease, behavior, and population dynamics and on food habits and other ecological relations in the major types of habitat.

On the weak side, fewer than half the references cited are in refereed journals; the gray portion of the wildlife literature is substantial. A second weakness is that on the scale at which management is conducted there are no satisfactory methods for routinely monitoring major deer population variables, such as structure, density, physical condition, or reproduction. Consequently, deer management decisions must be made in the virtual absence of reliable biological information, and major deer population changes may occur without timely managerial response.

A widespread mule deer decline seems to have occurred from the early 1960's to the mid-1970's. The present volume doc-

uments this but cannot explain it. The decline has been followed by a recovery equally mysterious. The understanding of such large-scale deer population phenomena, perhaps, will constitute a strong theme in the next big deer book, two decades hence.

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Books Received

Acceptable Risk. Baruch Fischhoff, Sarah Lichtenstein, Paul Slovic, Stephen L. Derby, and Ralph L. Keeney. Cambridge University Press, New York, 1981. xvi, 186 pp., illus. \$19.95.

Acceptance Sampling in Quality Control. Edward G. Schilling. Dekker, New York, 1982. xx, 776 pp., illus. \$65. Statistics, vol. 42.

Advanced Computer Concepts. Papers from a workshop, La Jolla, Calif., 1981. James Clark Solinsky, Ed. La Jolla Institute, La Jolla, Calif., 1981. xiv, 154 pp., illus. \$24.95. LJ1 Conference Proceedings.

Advances in Botanical Research. Vol. 9. H. W. Woolhouse, Ed. Academic Press, New York, 1981. xii, 280 pp., illus. \$49.50.

Advances in Fracture Research (Fracture 81). Proceedings of a conference, Cannes, Mar. 1981. D. Francois and 13 others, Eds. Pergamon, New York, 1982. Six volumes, illus. Vol. 1, xi + pp. 1-514. Vol. 2, xi + pp. 515-1142. Vol. 3, xi + pp. 1143-1418. Vol. 4, xi + pp. 1419-2058. Vol. 5, xi + pp. 2059-2634. Vol. 6, xi + pp. 2635-2786. The set, \$450. International Series on the Strength and Fracture of Materials and Structures.

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Brain Neurotransmitters and Hormones. Papers from a congress, Montreal, May 1981. Robert Collu, Jacques R. Ducharme, André Barbeau, and George Tolis, Eds. Raven, New York, 1982. xviii, 410 pp., illus. \$46.

Calculus for the Practical Worker. J. E. Thompson. Van Nostrand Reinhold, New York, ed. 4, 1982. xvi, 280 pp., illus. Paper, \$6.95. Mathematics Library for Practical Workers.

Enzyme Diagnosis in Diseases of the Heart, Liver, and Pancreas. L. Adolph and R. Lorenz. Karger, Basel, 1982. 124 pp., illus. Paper, \$20.50.

Exercise and Sport Sciences Reviews. Vol. 9, 1981. Doris I. Miller, Ed. Franklin Institute Press, Philadelphia, 1981. viii, 390 pp., illus. \$25. American College of Sports Medicine Series.

Helping Children Cope with Death. Guidelines and Resources. Hannelore Wass and Charles A. Corr, Eds. Hemisphere, Washington, D.C., 1982. xii, 194 pp. \$24.95. Series in Death Education, Aging, and Health Care.

Hermes. Literature, Science, Philosophy. Michel Serres. Translated from the French. Josué V. Harari and David F. Bell, Eds. Johns Hopkins University Press, Baltimore, 1982. xi, 168 pp. \$14.

A Higher Form of Killing. The Secret Story of Chemical and Biological Warfare. Robert Harris and Jeremy Paxman. Hill and Wang (Farrar, Straus and Giroux), New York, 1982. xiv, 274 pp. + plates. \$14.95.

Histological Typing of Lung Tumours. World Health Organization, Geneva, ed. 2, 1981 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). 36 pp. + plates. \$11. International Histological Classification of Tumours, no. 1.

The History of Modern Whaling. J. N. Tønnessen and A. O. Johnsen. Translated from the Norwegian by R. I. Christophersen. University of California Press, Berkeley, 1982. xx, 798 pp., illus. \$45.

HLA 1982. Complexe Majeur d'Histocompatibilité de l'Homme. Jean Dausset, Ed. Flammarion, Paris, 1982. viii, 414 pp., illus. Paper, 150 F.

The HMG Chromosomal Proteins. E. W. Johns, Ed. Academic Press, New York, 1982. x, 252 pp., illus. \$39.50.

Hormonal Factors in Fertility, Infertility and Contraception. Proceedings of a meeting, Rome, Dec. 1981. H. J. Van der Molen, A. Klopfer, B. Lunenfeld, M. Neves e Castro, F. Sciarra, and A. Vermeu-
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A mule deer bounding. "In many habitats, bounding is a faster means of locomotion than galloping. In open areas it is an important behavior for eluding pursuing predators." [Photograph by Dave Daughtry, courtesy of the Arizona Game and Fish Department; from *Mule and Black-Tailed Deer of North America*]