

**Science and
Technology
Annual
Reference
Review 1991**

Science and Technology Annual Reference Review 1991

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藏书章

Edited by
H. Robert
Malinowsky



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The rare Arabian Oryx is believed to have inspired the myth of the unicorn. This desert antelope became virtually extinct in the early 1960s. At that time several groups of international conservationists arranged to have 9 animals sent to the Phoenix Zoo to be the nucleus of a captive breeding herd. Today the Oryx population is nearly 800, and over 400 have been returned to reserves in the Middle East.


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CONTENTS

INTRODUCTION vii

CONTRIBUTORS ix

★ **REVIEWS**

Agriculture 3

Astronomy 28

Biology 34

Chemistry 76

Computer Science 82

Earth Sciences 128

General Science 137

Mathematics 153

Medicine 154

Physics 215

Technology 218

★ **INDEXES**

Title Index 305

Name Index 315

Subject Index 322

Type of Library 331

LIST OF PUBLISHERS 352

INTRODUCTION

Science and Technology Annual Reference Review (STARR) reviews reference books and series in the fields of science, engineering, medicine, and agriculture published mainly in the United States and Canada, but it also includes foreign-published books distributed by United States distributors. Science and technology is an area that is not as well reviewed as other disciplines; *STARR* proposes to fill this need.

Collection development librarians continue to be faced with budget restrictions and seek as much help as possible in determining which purchase to make. Reference publications are often expensive, overlapping in coverage, and misleadingly titled. Accordingly, it is becoming more and more common for libraries to delay purchase of certain books until a review has been published; public and school libraries have long followed this policy and academic libraries are beginning to follow suit. *STARR* will be of special use to those collection development officers who seek a second opinion when considering the purchase of a reference book—especially a new, expensive title.

WHAT IS INCLUDED

The 1991 edition of *STARR* contains 804 entries and includes books published in 1989 and 1990, along with some important 1987 and 1988 imprints. Although *STARR* seeks to review the most important new titles when they are known, in most cases only books received from the publishers are included. New paperback editions of earlier hardback editions are also included.

"Reference" is defined broadly to include indexes, abstracts, bibliographies, manuals, guides to the literature, handbooks, dictionaries, encyclopedias, atlases, field books, directories, tables, yearbooks, annuals, almanacs, biographical sources, histories, treatises, glossaries, catalogs, thesauri, union lists, textbooks, how-to-do-it books, exam reviews, standards, guides, and reviews.

Although not strictly reference materials, textbooks, how-to-do-it books, and exam reviews are included on a selective basis. Textbooks reviewed are generally medical texts

that are comprehensive and cover a special aspect of the medical profession. How-to-do-it books are included if they are unique and would be of value to the consumer in personal or public libraries; these titles are often found in public library reference collections. Exam reviews are a source of much information on the topics covered and are a neglected reference source. Yearbooks, annuals, and almanacs are also selectively reviewed.

ARRANGEMENT

Each volume of *STARR* will contain descriptive and, in most cases, evaluative reviews of reference materials at all levels: school, public, college, university, research, and home.

Reviews are grouped into 11 chapters: agriculture, astronomy, biology, chemistry, computer science, earth science, general science, mathematics, medicine, physics, and technology. Some chapters are further subdivided; for example, the biology chapter has subsections for botany and zoology. Within each chapter or subchapter the books appear alphabetically by title under their respective type, e.g., abstracts, indexes, handbooks, encyclopedias, dictionaries, etc. Books for which more than one subject category applies have been listed under the category that was determined to be most appropriate.

ELEMENTS OF EACH ENTRY

Each entry contains some or all of the following elements:

- Consecutive entry number
- Title (including all subtitles)
- Edition
- Author(s)
- Editor(s)
- Compiler(s)
- Imprint, including, when appropriate, publisher, division, and distributor
- Publication year; indication of the number of pages or volumes; and descriptive in-

formation of illustrations, bibliographies, maps, and indexes

- Price
- Series title(s)
- ISBN
- ISSN
- Superintendent of Documents (SuDocs) number, for government publications
- Review
- Reviewer name(s)

THE REVIEWERS

The reviewers are librarians or subject specialists from all types of libraries: school, public, academic, and special/research. Many are employed at special libraries and many belong to the Special Libraries Association (SLA). They range from general reference librarians to specialists to retired professionals. Each has a strong background in the discipline that he or she reviews and each has his or her own style of writing, making each review unique.

Individual reviews include most, if not all, of the following elements: a description of the book and a comparison with similar titles; a detailing of its positive and negative points; and a recommendation or nonrecommendation for purchase. In most cases, comparisons with similar titles are made; however, it may not always be possible since the reviewer may not have other titles at hand for comparison.

SPECIAL FEATURES

Indexes

There are four indexes: (1) *Title*—including main titles, series titles, and former titles, as well as alternative or abbreviated titles; (2) *Name*—including authors, editors, compilers, original authors of earlier volumes; and corporate names; (3) *Subject*—including Library of Congress and Na-

tional Library of Medicine terms as well as commonly accepted terms; and (4) *Type of Library*—including college, public, school, special/research, university, and home.

Cross-references have not been used in the indexes. Instead, as many access points as possible have been included. Inverted phrases are not used (e.g., "mathematical notation" is used instead of "notation, mathematical"). Technical terms are used along with the more common terms (e.g., birds, ornithology, reptiles, snakes, etc.) All reference index numbers are to entry numbers and not page numbers.

Publisher List

A list of publishers whose books are reviewed, along with addresses, is included.

COMMENTS

The editor welcomes comments and suggestions from users and publishers. Publishers who are not represented are encouraged to contact the editor at the following address:

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I would like to thank all publishers who submitted books for review, as well as all reviewers who worked hard to give a fair review to the books that were received. Thanks also to Al Covert of Oryx Press in Phoenix, who received and mailed out the review copies; to Jan Krygier, Alice Thomson, Sean Tape, and editors at Oryx Press who advised me and edited the manuscript; and to all of the individuals behind the scenes who continue to help make *STARR* a useful publication.

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REVIEWS

AGRICULTURE



GENERAL SOURCES Bibliographies

1. Bibliography of Agriculture: Data Provided by National Agricultural Library, U.S. Department of Agriculture. Phoenix, AZ: Oryx Press, 1942-. v.1- , index. Monthly. \$595.00 per year. 0006-1530.

The *Bibliography of Agriculture* is a monthly index to the literature of agriculture and allied sciences. It is compiled from the records found in AGRICOLA (AGRICultural On-Line Access), a database distributed by the National Agricultural Library (NAL). Prior to 1984, it was basically an index to documents at the NAL, but it now includes documents that may not be at the NAL.

The main part of the bibliography includes all of the bibliographic records added to the AGRICOLA files during the preceding month, arranged by broad subjects. An identification number has been assigned to each entry to facilitate indexing. Original language other than English is indicated. Full bibliographic information is included for each entry, including an AGRICOLA citation number and NAL call number. Following this main part are five sub-sections: U.S. Department of Agriculture publications, State Agricultural Extension Services publications, FAO publications, State Agricultural Experiment Station publications, and translated publications. All of these publications also appear in the main part. Corporate, personal, and subject indexes are provided.

The *Bibliography of Agriculture* had its beginning as a publication of the NAL in 1942 and was continued by The Oryx Press beginning in 1975. Oryx Press improved the print and format so that it is now a very pleasing index to use. Academic and special libraries with any interest in agriculture and its associated disciplines will need this bibliography as will large public libraries. Even though all information can be accessed through AGRICOLA, the print format permits libraries to have the information when they do not have the hardware for the database. The only drawback in using the hard copy is that the issues are not annually cumulated, thus requiring one to search each monthly issue, but an annual index is available, which does cumulate index terms (*The Bibliography of Agriculture Annual Cumulative Index*). H. ROBERT MALINOWSKY

Handbooks

2. Handbook on Agricultural Education in Public Schools. 5th. Lloyd J. Phipps; Edward W. Osborne. Danville, IL: The Interstate Printers & Publishers, Inc., 1988. 593p., illus., tables, charts, index. \$22.95. 0-8134-2774-6.

Now in its fifth edition, the *Handbook on Agricultural Education in Public Schools* has once again caught up with the times. It has been eight years since the fourth edition was released and a number of changes have occurred in teaching since that time.

For the first time, Lloyd Phipps has a co-author, Edward Osborne, Assistant Professor of Agricultural Education, University of Illinois at Urbana-Champaign. As with the previous editions, the intended audience is "present and prospective teachers of agriculture, teacher educators, and supervisors. It should also be of value to administrators of programs of agricultural education and for policy makers for agricultural education programs."

The book is arranged in textbook fashion with each chapter building on the previous one. The chapters are divided into eight parts starting with Part 1, "Introducing Agricultural Education," followed by Part 2, "Developing Agricultural Education Programs." Part 3, "Teaching Procedures," includes new chapters on "Teaching Effectively" and "Using Microcomputers and Audio-Visual Aids." Part 4 is "Managing the Agricultural Education Program." "Supervised Occupational Experience" is discussed in Part 5. "Future Farmers of America" is covered in Part 6. Part 7 is "Providing Laboratory Instruction," and Part 8 is on "Conducting Postsecondary and Adult Education Programs." The appendix comprises the National Vocational Educational (Smith-Hughes) Act, the Vocational Education Act of 1963, and the Carl D. Perkins Vocational Education Act of 1984 reprints.

This edition is just a bit shorter than the 1980 edition. The sections on agricultural mechanics have been removed and can be found in Phipps's other book *Mechanics in Agriculture* (3rd ed., Interstate Printers & Publishers, Inc., 1983). A new and useful addition to the *Handbook on Agricultural Education in Public Schools* is the review and discussion questions found at the end of each part. This well-indexed textbook is rec-

ommended for college and university libraries supporting education programs in agriculture as well as teachers in secondary schools.

AMY L. PASTER



ANIMAL CULTURE Handbooks

3. Large Animal Neurology: A Handbook for Veterinary Clinicians.

I.G. Mayhew. Philadelphia, PA: Lea & Febiger, 1989. 380p., illus., bibliog., index. \$55.00. 0-8121-1183-4.

Down through the years veterinarians and others who observe animals afflicted with neurological diseases have experienced fear and anguish as early studies consisted mainly of morbid descriptions. Clinical disciplines of animal neuropathology were limited to small animals; it is only recently that the clinical specialty of large animal neurology has received emphasis in veterinarian degree programs, specialty graduate courses, applied research, and continuing education programs. In response to this trend, I.G. Mayhew has produced this volume, *Large Animal Neurology*.

A very specialized text, this book is slanted towards veterinary clinicians who must deal with neurology in large, domesticated animals. The contents are based on an instructional course developed by Mayhew and an associate at the University of Florida. Although Mayhew planned to cover diseases occurring in the western world, the text is based on experience gained only in Great Britain, Australia, and the United States.

The volume is divided into two parts. The first part includes information needed by the clinician to approach and diagnose cases of large animal neurology, with four chapters covering evaluation of the large, domestic animal neurologic patient. This section includes clinical neuroanatomy, neurologic evaluation, ancillary diagnostic aids, and pathologic responses of the animal's nervous system.

The book's second section, 13 chapters, covers problems encountered in treating various disorders. Each chapter covers a specific problem and concludes with comprehensive reference lists. Some of the chapters have several sub-parts. Chapter 5 covers disorders of behavior and personality. Chapter 6 is devoted to seizures, and Chapter 7 deals with visual dysfunction. The 8th chapter covers coma and altered states of consciousness, and Chapter 9 deals with cranial nerve dysfunction. Chapter 10 is devoted to head tilt, circling, nystagmus, and other signs of vestibular abnormalities. Deafness is the subject of the 11th chapter. Chapter 12 includes opisthotonus, tetanus, myoclonus, tetany, tremor and other localized muscle spasms, and movement disorders. Incoordination of the head and limbs and cerebellar diseases make up the contents of Chapter 13.

Chapter 14 deals with tetraparesis, paraparesis, and ataxia of the limb along with episodic weakness. Paresis or paralysis of one limb is covered in Chapter 15. In Chapter 16, urinary bladder distention, dilated anus, and atonic tail are covered, along with the Cauda Equina syndrome. The book's final chapter covers itching, self-mutilation; and head shaking, nodding, and rubbing. Rabies is given brief mention in this chapter with the fullest coverage in Chapters 5 and 15.

There is an appendix at the end of the book that includes a selection of familial and hereditary neuromuscular diseases of large animals. These are classified by species to include cattle, horses, sheep, goats, and swine.

This book is especially designed for veterinarians who deal with the neurological aspects of large domesticated animals, but it will be useful to students in veterinary medicine as this subject is getting increased attention in school programs. This book is clearly written and generously illustrated with photographs of afflicted animals. It is recommended for veterinarian libraries.

STAN W. CARLSON

Manuals

4. The Horse Care Manual. Chris May.

New York, NY: Barron's Educational Series, Inc, 1989. 160p., illus. (part in color), tables, charts, index. \$16.95. "A Quarto Book." 0-8120-5795-3.

While horses appear to be rugged animals, in actuality they are complex, delicate creatures. There is a great deal more to keeping a horse than giving it a barn, feed, and pasture. This complete, concise, and clearly written manual, compiled by a qualified veterinarian, will be especially useful to the ordinary horse owner as well as serving as an informational guide for experienced persons who keep horses or work with them. Every aspect of horse care is included, with clear illustrations supplementing the text. There are drawings, photographs, and tables to make this a thoroughly comprehensive guide.

Author Chris May begins his treatise with a brief history of the horse, its ancestry, and family tree, dating back to the ancestral forerunner, Eohippus. Various horse hide colors are shown. The anatomy of the horse follows with an illustrated points of identification chart of anatomical parts of the animal clearly delineated. May gives interesting information on the behavior of horses and touches on stable vices such as cribbing. The following section of the book covers the housing for horses, indoor quarters, pastures, stall construction, improving the pasture, poisonous weeds, and the like. Next follows a section on stable routine. This covers basic barn equipment, feeds and feeding, minerals, water, grooming, clipping, and exercising. There is an interesting and informative section on keeping the horse healthy. This includes preventive measures, teeth and their care, foot care, and shoeing.

For those who are interested in breeding their mares, a part of the book is devoted to breeding cycles, pregnancy care and problems, foaling, and rearing a foal. Tips on stallion selection are also included. Buying a horse can be a challenge, and this book gives detailed suggestions regarding this important aspect.

Section 2, the remainder of the book, deals with safeguarding the horse's health, beginning with emergency medical care. Included are signs of illness, skin problems, legs and bandaging, wounds and scratches, and first aid. General medical care completes the volume. Covered here are eye problems, skin problems, feeding problems, skin care, respiratory disorders, foot problems, and lameness. The concluding page of this book deals with the longevity of the horse, emphasizing that with advancing age, the horse will need extra care. There is a glossary of horse terms and an index.

This very attractive, readable book was first published in England in 1987. It is an excellent introduction to the personality of the horse and the very important essentials of keeping a horse happy and healthy. It is a good addition to veterinary literature and recommended for public, academic, and special libraries as well as libraries serving patrons who own horses.

STAN W. CARLSON

Reviews

5. Recent Advances in Aquaculture, v.

3. James F. Muir; Ronald J. Roberts, eds. London, Great Britain: Croom Helm, Timber Press, Portland, OR, 1988. 420p., illus., tables, charts, bibliog., index. \$79.95. 0-88192-122-X.

The cultivation of both freshwater and marine fish species is practiced worldwide and is an increasingly important source of the food supply. It varies from relatively simple methods to highly developed systems that require knowledge of the requirements of each species and management of their life cycles. Previous volumes of this review of current developments in the aquaculture industry were published in 1982 and 1985. The present volume comprises five articles varying in length from 62 to 117 pages on the subjects of fish chemotherapy, egg production in the rainbow trout, solar ultraviolet radiation and its effect on farmed finfish, the effects of acid rain on salmonid farming, and the reproductive biology and hatchery rearing of tilapia. Authors are research scientists affiliated with institutions in Great Britain, Scotland, Italy, and Sri Lanka. Each review is preceded by a table of contents and followed by an extensive bibliography ranging from 6 to 26 pages. Numerous photographs, tables, and charts accompany each review.

Although there are a number of journals devoted to the subject of aquaculture, this appears to be the only review publication in the field, and as such would be useful in specialized collections and universities serving fisheries, biologists, and aquaculture specialists.

JUDITH B. BARNETT

★ FOOD SCIENCE Bibliographies

6. **The Additives Guide.** Christopher C. Hughes. New York, NY: John Wiley & Sons, 1987. 146p., bibliog., index. \$10.00pbk. 0-471-91507-6pbk.

The Additives Guide covers the adverse effects of food additives, the regulation of food safety, and specific food additives from nitrites and antioxidants to aspartame and other artificial sweeteners. The organization of this bibliography goes from the most basic issues, those of the adverse effects of food additives and the regulation of food safety to specific topics such as nitrites and nitrates, antioxidants, sulfites, monosodium glutamate, and all of the artificial sweeteners. It closes with diet and behavioral disorders and artificial colors. Only one index—an author index—is included.

This bibliography is most useful for those who are involved in the field of nutrition and medical dietetics and those who wish to scan the general literature for recent advances, news, or research. It is also useful for those who are writing a general paper on one of the additives or their side effects, as it is effective in providing a basic introduction to the topic. The review located at the beginning of the monograph is very helpful.

However, several problems exist with this book. The first is that it contains no subject index. The subject index may not be needed since each section is on a very specific topic, but it would certainly be useful since people may wish to look up alternative names that exist for a food additive or may wish to look up a specific syndrome or specific effects caused by additives, such as migraines, numbness, etc. The second problem is the inclusion of articles from such general magazines as *Mademoiselle*, not highly regarded as research-oriented. Fortunately, these magazines are balanced by the inclusion of materials from the *Annals of Emergency Medicine* and government publications. Inclusion of such general materials is one reason why this bibliography is not recommended for a research or special library but rather for a college or a public library.

KIMBERLY J. LAIRD

Directories

7. **Italian Wines.** 3rd. Philip Dallas.

Boston, MA: Faber and Faber, 1989. 276p., maps, glossary, index. \$24.95pbk. 0-571-15179-5pbk.

This third edition of *Italian Wines*, first published in 1974, is a directory of all wines produced in Italy and their producers. It is divided into two parts. The first part contains eight chapters that give a history of the wine industry in