

Grolier Academic Encyclopedia

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Grolier International

Published by Grolier International 1983.

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1980.

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Encyclopedia.

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Manufactured in the United States of America.

ISBN 0-7172-2002-8

Preface

The *Grolier Academic Encyclopedia*, first published in 1980, is an entirely new reference work, the only completely new general encyclopedia in more than a decade. More than 100 employees, 2,250 scholars and other authorities, plus another 150 consultants, advisors, contributing editors, cartographers, photographers, and illustrators worked for several years to create the 9 million words, 32,000 entries, and more than 16,000 illustrations that select, describe, organize, structure, and interpret a representative portion of the world's corpus of knowledge in a manner that is useful to our readers. For this, the fourth edition, all of the encyclopedia's contents have been thoroughly reviewed and updated as necessary to reflect the most recent developments.

GOALS

The fundamental goal of an encyclopedia is to make accessible to a particular audience definitive information on the broadest possible range of subjects. Depending upon the sophistication and academic preparation of that audience, an encyclopedia should furnish basic information, outline issues and controversies, report judgments, assess importance, and trace influences. Supplemented by creative illustrations and maps, such a work should also reinforce learning, enlarge understanding, and stimulate the imagination. These goals have guided the preparation of this encyclopedia.

PURPOSE

The *Grolier Academic Encyclopedia* has been created for students in junior high school, high school, or college and for the inquisitive adult. Research has determined that such an audience wants an encyclopedia to fulfill four clearly defined objectives:

- (1) Students and adults expect an encyclopedia to provide quick access to definitive factual information.
- (2) Both audiences also want to find a readily intelligible general overview of a subject that does not compel the reader to grasp intricate subtleties or wade through drawn-out historical analysis.
- (3) Among better students, and those who know how to approach a term paper, an encyclopedia is regarded as an excellent starting place for further research if it isolates key concepts, outlines the structure of the subject, and directs the reader to more specialized primary and secondary sources.
- (4) Readers at all levels expect a reference work to help them visualize or recognize people, places, objects, and processes by means of maps, photographs, and drawings, many of which should be in full color.

In addition to these objectives, the best reference works today are expected to be comprehensive, current, authoritative, objective, and easy to use.

COMPREHENSIVENESS

A comprehensive general encyclopedia must provide basic information for the nonspecialist reader, coverage of all significant aspects of a subject, and sufficient information placed in a historical or interpretative context.

A comprehensive encyclopedia will contain broad coverage of contemporary events, popular culture, international affairs, and current technology. There must be enough information to take the reader beyond what he or she already knows; dictionary-type definitions will normally be insufficient. Articles should include not only the most

interesting or controversial, but all relevant aspects of a topic. Thus the article **BRAINWASHING** cannot confine itself to that variety practiced in the 1950s by the Chinese Communists. No subject should be excluded on grounds of political or religious belief, social or legal disapproval, or moral prejudice. Unpopular—even notorious—figures and ideas are impartially and systematically discussed. While recognizing a need to be topical, our editors are aware that much contemporary interest is transient, and they have tried to achieve a balance between the timely and the timeless.

The content of the *Grolier Academic Encyclopedia* is not narrowly focused on the United States and its perspectives; articles on **ALCOHOL CONSUMPTION**, **AGRICULTURAL EDUCATION**, and **LANDSCAPE ARCHITECTURE**, for example, grant appropriate recognition to the diversity of practice throughout the world. A sympathetic awareness of non-Western cultures and alternative life-styles, however, need not interfere with an appreciation that a fuller explication of roots and traditions of our audience's dominant culture is appropriate.

The list of entries (and their lengths) reflects the curriculum of American schools and universities, which is to say that there will be few items in any school or college textbook not found as either a subject entry or an index entry in this encyclopedia. Thus science fiction and the literature of American minorities are included not simply because they are artifacts of the times, but because both are currently studied in secondary-school and university programs. This orientation to the curriculum has still left ample space for a myriad of topics of contemporary interest—**CLASS ACTION**, the history of the **MIDDLE EAST**, the **MX MISSILE**, **PUBLIC RELATIONS**, the **SHROUD OF TURIN**, and **WOMEN IN SOCIETY**.

The basic allocation of space among disciplines is as follows:

Humanities and the arts	36 percent
art, architecture, sculpture	
history	
literature and linguistics	
music, theater, dance	
religion and philosophy	
Science and technology	35 percent
astronomy	
chemistry	
earth science	
life science	
mathematics	
physics	
technology	
Social science	14 percent
anthropology and archaeology	
business and economics	
education	
government, politics, and law	
psychology	
sociology	
Geography	13 percent
Sports and contemporary life	2 percent

Thirty-five percent of the entries are biographical, although the percentage of words is much less. The encyclopedia was designed to be comprehensive but not exhaustive; the article **CHINA** is not book length but furnishes an overview of the physical geography, economy, government, peoples, and educational system. Separate articles are included on Chinese history, archaeology, art and architecture, language, literature, medicine, music, and universities. Readers can therefore seek specific information within the total coverage of Chinese history, peoples, and culture.

CURRENCY

A current encyclopedia must have more than up-to-date information on population, planetary probes, the newest Nobel laureates, and the latest speculations about the origins of the universe. It should also include biographies in the performing arts and popular culture, as well as in the more academic fields. Current biographies are often a highly congenial means of investigating social phenomena or scientific theory. The

general reader who inquires into contemporary theories of human behavior and anthropology may well begin by reading about B. F. Skinner and Claude Lévi-Strauss.

All population statistics in these volumes reflect the latest census figures (or an official estimate if there has been no recent census). The maps and city plans are the most up-to-date of any encyclopedia and reflect current urbanization, new highways and airports, and so on.

The *Grolier Academic Encyclopedia* is revised each year, using the latest computer technology. It will also be updated by means of a yearbook, issued annually, that will cover the events and developments of the preceding year.

AUTHORITY

The authority of a reference work is evident in the credentials of the people responsible for creating it and, within the articles themselves, in the carefully qualified judgments and an explanatory style that retains the subtlety of a subject while communicating its essence to the nonspecialist. More than 90 percent of the entries have been written by outside scholars and authorities, and 75 percent of the entries are signed. The 2,250 authorities, from all over the world, were selected to write for this encyclopedia on the basis of their specific knowledge and expertise in a particular subject.

The Advisory Board of Editors, consisting of senior scholars and academicians, was involved at virtually every stage, from preparation of the list of entries and the recruitment of other scholars to write for the encyclopedia, to the review of some of the basic or controversial articles.

Many of our editors have advanced degrees, and some are published scholars in their own right. Most have experience on one or more of the major general or technical encyclopedias published in the United States and Europe. A large team of research editors—all specialists in their field—verified every fact, inference, and conclusion against primary and other authoritative sources in several of the world's largest libraries (Princeton, Columbia, New York, and Rutgers universities, as well as the New York Public Library). After this quality-control effort, edited copy had to clear several layers of senior editorial review before it was returned to the author for approval. Every article in the *Grolier Academic Encyclopedia* has been subjected to multiple review to assure objectivity, balance, and accuracy.

OBJECTIVITY

If an encyclopedia is to be reliable, the facts and inferences must be accurate and reflect current scholarship. Scholars may differ among themselves even on questions that do not involve social policy. The aim of the *Grolier Academic Encyclopedia* is to reflect those differences and to consider alternative theories or interpretation as well as opposing points of view, for example, on ABORTION, CENSORSHIP, and INTELLIGENCE. Even though most articles carry the signature of a respected authority in the field, an article cannot represent only a personal point of view, and certainly, large-scale controversies on such things as PREHISTORIC HUMANS, SOCIOBIOLOGY, and STUDENT MOVEMENTS require a balanced treatment that, instead of avoiding all judgments, seeks to incorporate multiple perspectives and to tell who supports what position and why.

A concerted effort has been made to produce an encyclopedia free of sexist language and attitudes, although that task is especially difficult in certain articles in philosophy and religion, where writers before the 20th century commonly used "man" in both a generic and a literal sense.

EASE OF USE

Ease of use means two things: the reader can find what he or she is looking for quickly, and once found, the material can be understood. The *Grolier Academic Encyclopedia* has been designed, written, and edited with both objectives in mind.

The arrangement of entries is alphabetical rather than by topic, and cross-references abound, so if the entry is not where the reader looks first, there is generally a "see" reference that indicates where the subject is covered. The *Grolier Academic Encyclopedia* is a short-entry encyclopedia, with more than half the content in articles of fewer than 500 words in length. Many of the longer articles are further subdivided by smaller boldface topic headings ("history," "people," "economy").

The text of the articles has been carefully edited to be readable; foreign words, abbreviations, detailed etymology, and specialized jargon have been avoided. Technical terms generally are defined in the sentence in which they are used, and readers will be referred to other entries for additional information. Even in the most technical articles no special preparation in higher mathematics is necessary—where the use of some

algebra or geometry is of interest to advanced readers, the concepts contained in the article are explained in plain English as well.

Both metric and standard notational systems are used, with meters and kilograms preceding feet and pounds; as appropriate, Celsius and Fahrenheit temperatures, as well as Kelvin, may be used. Nomenclature in the life sciences includes both the Latin and common names, although most subjects are alphabetized by their common name.

The most commonly used information about countries, states and provinces, and U.S. presidents is included in fact boxes at the beginning of the article. The volumes are arranged in letter-units, with entire letters contained wholly within a single volume (except in the cases of A, C, and S, where the number of entries requires two volumes for each).

PHYSICAL ARRANGEMENT

Article headings are set in bold type, with a rule underneath, and ample space is provided between entries to make it easy to pick out any particular article on the page. The paper is specially selected, 60-lb nonglare-surface stock, which provides true color and sharp details. The contemporary typeface (Optima) was selected for its legibility and elegance.

The right-hand margin of each column of type is called "ragged"—that is, variation exists in the length of each line—a modern concept in book design that is more eye-pleasing and less formidable than the traditional solid column.

Guide words at the top of the page enable users to turn quickly to the appropriate page. Page numbers are also prominently displayed in the upper left and right corners of each page spread for rapid access.

ALPHABETICAL ARRANGEMENT

The encyclopedia is arranged alphabetically throughout. The "word-by-word" system is the same as that used in the phone book or in the library card catalog. Entries beginning with a short word appear before entries with the same short word forming the first letters of a longer word. Thus NEW YORK is placed before NEWBERRY LIBRARY, and RADIO GALAXIES before RADIOACTIVITY.

PRONUNCIATION AND ALTERNATE NAMES

Article headings that contain foreign words and other unfamiliar words are provided with pronunciation guides much like the ones used by *Time Magazine*—thus, Kirkcudbright [kur-koo'-bree]. For Chinese names and terms the new Chinese transliteration system, Pinyin, is provided in parentheses in the article title line—CHOU EN-LAI (Zhou Enlai). The traditional Wade-Giles system is otherwise used in the text because most people are more familiar with the form Peking, for example, than Beijing.

CROSS-REFERENCES

There are three kinds of cross-references in the *Grolier Academic Encyclopedia*. A reader who looks first for CIRCADIAN RHYTHM is told to "see BIOLOGICAL CLOCK." Thus, even if one does not know for certain where the information is to be found, the encyclopedia will guide the reader to the proper place with a minimum of hunting and guessing.

The second type of cross-reference is internal, within the text of an article, and appears in small capital letters. In the article GENESIS, BOOK OF, the phrase CREATION ACCOUNTS appears in small capitals, which means that there is a separate article by that title in which additional relevant information is to be found.

The third type of cross-reference appears at the end of many articles. The article ALLOSAURUS (which also contains eight internal cross-references to other dinosaurs) has a note, See also: FOSSIL RECORD; MESOZOIC ERA, after the bibliography. This tells the reader that additional information relevant to allosaurus can be found under those headings.

FACT BOXES, TABLES, AND GRAPHS

For those who are seeking quick answers to many common questions about countries, states, U.S. presidents, and sports records, or for detailed data about even more specific questions, such as the ten leading U.S. government aerospace contractors, the *Grolier Academic Encyclopedia* supplies hundreds of fact boxes, tables, graphs, and glossaries of technical terms throughout.

ILLUSTRATIONS AND MAPS

More than 16,000 photos, maps, and other illustrations, occupying about 33 percent of the available space, appear in the *Grolier Academic Encyclopedia*. A substantial amount

of the total information in this encyclopedia is found in these illustrations and their captions—information that supports, explains, and expands concepts and relationships mentioned in the text. For example, 76 illustrations accompany the BIRD article, detailing anatomy, physiology, the dynamics of wing action in flight, and the structure of different types of feathers. In addition, illustrations of more than 220 separate species appear, many of which show the plumage variations of male and female of the species. The illustrations are always immediately adjacent to the article to which they pertain. In many cases art work rather than photographs is used because of the greater detail and clarity possible in a drawing. Months of research went into some of the illustrations; for the cutaway drawing of the Soviet spaceship SALYUT, some of the key, previously unpublished information was supplied by Eastern European sources. Exploded views, cutaway drawings, and other sophisticated renderings provide a new look and help to explain processes in time and space.

The 1,100 maps, all newly created specially for this encyclopedia by the cartographic experts of Rand McNally, Donnelley Cartographic, and Lothar Roth Associates, are based on the latest research and cover all continents and countries of the world, all U.S. states and Canadian provinces, many historic regions, and cities (including 36 from other countries). In addition to the 235 political reference maps, there are 200 historical and thematic maps and hundreds of locator maps. The map accompanying the article on SLAVERY not only shows the origin and destination of African slaves, but also brings out little-known facts, such as the information that only 11 percent of the slaves taken in Africa were sent to North America. Most political reference maps use longitude and latitude, as well as color-coded isogonics and hypsographic lines to indicate elevation.

BIBLIOGRAPHY

Almost 13,000 entries (about 40 percent of the total) have accompanying bibliographies. The goal is to furnish a well-chosen list of standard and recently published works to which readers may turn for further information or additional development of particular points of view. Leading textbooks, paperbacks, and recordings are included, as well as occasional periodical references. We have not attempted, especially in science, to furnish the most definitive work in the field if, in our opinion, that work would be well beyond the comprehension of our intended reader. No works in foreign languages are cited, and every effort has been made to refer to books currently in print. Where possible, we have attempted to include unusually cogent interpretations or syntheses; thus John Keegan's book *The Face of Battle* is cited in the bibliography for AGINCOURT, BATTLE OF, and Alexander Bickel's *The Morality of Consent* in the article CIVIL DISOBEDIENCE.

INDEX

The 200,000-entry index, in Volume 21, provides quick, helpful, practical, unambiguous guidance to the information in the encyclopedia. The index entries distinguish among identical headings by providing additional information—for example, BACON, FRANCIS (author) and BACON, FRANCIS (painter). The entry supplies the volume, page, and article title in which illustrations and maps are found and also provides additional "See also" references for related information. Complete information on how to use the index is found in the front matter of Volume 21.

ACKNOWLEDGMENTS

A reference work of this scope and depth must acknowledge many debts—to other encyclopedias of this and former generations, to the hundreds of librarians and educators who participated in product and market research, and to the members of the Advisory Board of Editors, whose names are listed on the following page. The 2,250 scholars and authorities who contributed articles did so primarily because of their commitment to the diffusion of knowledge. The most important debt of all, of course, is owed to our staff, whose dedication and professionalism created this work.

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