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WEBSTER'S NEW INTERNATIONAL DICTIONARY

OF THE
ENGLISH LANGUAGE

Second Edition
UNABRIDGED

UTILIZING ALL THE EXPERIENCE AND RESOURCES OF MORE THAN
ONE HUNDRED YEARS OF GENUINE WEBSTER DICTIONARIES

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PUBLISHERS' STATEMENT

WITH the publication of WEBSTER'S NEW INTERNATIONAL DICTIONARY, SECOND EDITION, at a cost of one and one-third million dollars, G. & C. Merriam Company continue their policy of meeting the requirements of the English-speaking world for a one-volume general dictionary that adequately interprets both past and contemporary civilization.

In all, to date there have been ten Webster and Merriam-Webster Dictionaries: *An American Dictionary of the English Language*, edited by Noah Webster, in 1828; *The Revised Edition*, in 1840; a *New and Revised Edition*, edited by Chauncey A. Goodrich, in 1847; a *Revised and Enlarged Edition with Pictorial Illustrations and a Table of Synonyms*, edited by Chauncey A. Goodrich, in 1859; the *Unabridged*, with vocabulary three times the size of the 1828 Dictionary, and with etymologies revised, with Noah Porter as editor in chief, in 1864; the *Unabridged*, with a *Pronouncing Biographical Dictionary*, in 1879, and with a *Pronouncing Gazetteer* in 1884; the *International*, with Noah Porter as editor in chief and Loomis J. Campbell as general editor, in 1890; the *International*, with *Supplement*, in 1900; and the *New International*, having more than 400,000 entries, with W. T. Harris as editor in chief and F. Sturges Allen as general editor, in 1909.

The increase in size and complexity of the task of editing has resulted, in successive editions, in a corresponding increase in the editorial organization. The printer's copy for the edition of 1828 was written entirely in the hand of Noah Webster; it was truly a "one-man" dictionary. The printer's copy (still preserved) for the 1864 *Unabridged* shows many hands; the editorial staff, with contributing editors and special editors, numbered more than thirty. The editing of the *New International* of 1909 was done by nearly thirty office editors, including eleven special editors, and more than thirty special editors outside the office staff. More than two hundred and fifty editors and editorial workers have been employed in the preparation of this SECOND EDITION of the NEW INTERNATIONAL. It is hardly necessary to observe that, with so many laborers, the production of a book of uniform merit and of high technical excellence in every detail called for extraordinary preparation and organization. In earlier editions, it was still possible for one Editor in Chief or one General Editor, by exerting superhuman efforts, to determine and apply policies, to read and criticize every line, and to harmonize all the diverse and disparate subject matter.

When the publishers and the permanent editorial staff confronted the almost staggering problem of producing a new Dictionary that would treat adequately all aspects of historical and contemporary science, technology, language, literature, and society, it became clear that the day of the "one-man" dictionary had passed, and that new methods must be devised.

Of primary importance to the successful determination and guidance of editorial policy was the formation of an Editorial Board, consisting of the Editor in Chief, the President of G. & C. Merriam Company, the General Editor, and the Managing Editor.

William Allan Neilson, President of Smith College, brought to the position of Editor in Chief wide experience in the schools, colleges, and universities of Scotland, Canada, and the United States; he had edited the work of Shakespeare and other dramatists and writers; he had been associate editor (with Charles W. Eliot) of the *Harvard Classics*, the famous "Five-Foot Shelf of Books," in the selection and editing of whose contents he had shown the catholicity of his interests and the encyclopedic character of his mind. Both editors and publishers have learned to value and trust his fine judgment of men and measures.

A. G. Baker, President of G. & C. Merriam Company, contributed a many-sided judgment gained through his invaluable editorial experiences on the *International* and the *New International Dictionaries*. The successful correlation between editorial and business policies, upon which has depended the accomplishing of this huge task, has been largely a result of his wisdom.

Thomas A. Knott, the General Editor, former Professor of English at the University of Iowa, is distinguished as a scholar in language and literature, as a successful teacher, and as an experienced executive and administrator in the university world, as well as in the Military Intelligence Division of the United States Army.

Paul W. Carhart, the Managing Editor, brought large lexicographical experience, having been on the Merriam staff since his work on the Supplement of 1900. Upon him early fell the responsible work of conducting the business arrangements with the special editors and of carrying on with them the necessarily enormous correspondence. Mr. Carhart has also been the Pronunciation Editor of the new edition.

The policies determined by the Board have, under the supervision of the General Editor, been carried out by a three-fold corps of editors: one group of Special Editors, working outside the office, to edit the scientific and technical materials; a second group, members of the office staff, to review and bring into uniformity the work of the Special Editors; and a third, also members of the office staff, to edit the literary and nontechnical materials. The analysis of material, the devising of practical methods of work, the teaching and training of the various Special and Office Editors, and the correlation of their work have largely been the responsibility of the General Editor.

Without the co-operation of the scholarly, scientific, and technical world, of the Editorial Board, of the Permanent Staff, of the Special Editors, and of The Riverside Press, the publishers could not have brought the work on this great DICTIONARY to its successful culmination. It stands as the organized, co-ordinated accomplishment of a large corps, so trained that the skill of the leader is the skill of the corps.

G. & C. MERRIAM COMPANY
Publishers

July 2, 1934.

PREFACE

The first edition of Noah Webster's American Dictionary of the English Language was published in New York in 1828. It was the work of a patriotic scholar who had given much thought to the needs of his country, and who saw the importance, even while the foundations of the republic were being laid, of providing against the danger of illiteracy in a generation much occupied with political and economic reconstruction. As early as 1783 he had published his famous American Spelling Book, and the extraordinary vogue of this primer, which sold by the million down through the third quarter of the nineteenth century, showed how wisely he had judged the necessity for such a means of self-education. Incidentally, its profits enabled him to devote some twenty years to the preparation of a dictionary which would serve as a key to all the stores of knowledge in the English tongue. Webster's great predecessor was, of course, Doctor Johnson, but two generations had elapsed since the publication of his dictionary, and in the meantime a new English-speaking nation had been born. Already an American contribution was being made to the English vocabulary and idiom, and it was necessary for Webster to conceive his task in terms of the new situation and its needs.

The book appeared in two quarto volumes, twenty-five hundred copies being printed for the United States and three thousand for Great Britain. Its vocabulary contained 70,000 words, an increase of 12,000 over Todd's Johnson, and it received recognition at once for the fullness, clearness, and accuracy of its definitions—a distinction which all subsequent editors have jealously striven to maintain. Webster issued an enlarged edition in 1840. On his death in 1843 the unsold copies and publishing rights were acquired by G. & C. Merriam, who in 1847 brought out an edition in one volume under the editorship of Webster's son-in-law, Professor Chauncey A. Goodrich, of Yale College. In 1859 this was reissued with the addition of synonyms and the important innovation of pictorial illustrations.

The edition popularly known as the Unabridged was published in 1864, the result of a general revision. The Editor in Chief was Dr. Noah Porter, later President of Yale College, and the etymologies were modernized by Dr. C. A. F. Mahn, of Berlin. The vocabulary was increased to 114,000 words, and distinction and authority were gained by the collaboration of such scholars as William D. Whitney and Daniel C. Gilman. A supplement to the Unabridged appeared in 1879.

A still more thoroughgoing revision was achieved in Webster's International Dictionary of 1890. The new title had reference both to the extension of the vogue and authority of the work throughout the English-speaking world, and to the inclusion of foreign scholars among its contributors. President Porter was again Editor in Chief. The vocabulary had now reached 175,000 words, a number which was increased by 25,000 in the International with Supplement of 1900.

The New International Dictionary appeared in 1909, represented the most radical of all changes thus far. The materials of the supplement and many of the appendices were embodied in the main vocabulary, all the latter was thoroughly sifted, and every department of the book was revised and improved. The vocabulary now contained 400,000 words. The Editor in Chief was Dr. W. T. Harris, United States Commissioner of Education, and the General Editor, Mr. F. Sturges Allen, both of whom had worked on the Supplement of 1900; the etymologies were cared for by Professor E. S. Sheldon, of Harvard, assisted by Professor Leo Wiener, and the pronunciation by Mr. Paul W.

Carhart. The staff of specialists was greatly enlarged, and the authority of the definitions correspondingly heightened.

The present work, WEBSTER'S NEW INTERNATIONAL DICTIONARY, SECOND EDITION, is the result of a complete and detailed scrutiny of every feature: choice of vocabulary, etymologies, pronunciations, definitions, typography, pictorial illustrations, and arrangement. Apart from the normal advance of knowledge which has had to be assimilated in each successive edition, the present editors have had to reckon with the increased pace in scientific progress in the last generation, the extraordinary number and importance of new inventions, the revolutionary changes in art, and, above all, the far-reaching effects of the World War, not only on military science, politics, economics, and geography, but on practically every field of thought and action. Space has had to be found for thousands of new terms and new uses of old terms, and this demand has made necessary a fresh judgment on the claims of many parts of the old vocabulary. Once more the editors have had to make a new book. Traditional features that have stood the test have been retained, so that the book is still a Webster, but more important than the retaining of time-honored methods or conventions has been the task of making the dictionary serve as an interpreter of the culture and civilization of today, as Noah Webster made the first edition serve for the America of 1828.

Within recent years there has been a new emphasis on adult education. In spite of the multiplication of schools and the great increase in numbers of students in colleges and universities, it is more and more recognized that education does not and cannot end with attendance at institutions of learning. It is a lifelong process, in which the school or college is chiefly important in supplying tools and teaching how to use them. For the conception of the educated man as a finished product is being substituted that of the intellectually curious person, aware of the vastness of human ignorance but challenged by the light that is continually being thrown, through scientific research and other activities of the human mind, upon all aspects of the universe. To avail oneself of these results for the understanding of our environment and for the practical adjustments to it that modern living demands, the intelligent person of today has to read constantly. Our books, periodicals, and newspapers teem with new terms coined or revived to express new conceptions, and the dictionary more than ever is the indispensable instrument of understanding and progress.

It is in the light of these necessities that the present revision has been planned and carried out. Such a revision is far from being a mere supplementing by addition. The constituting of the vocabulary of the present volume has been a highly selective process in which the problem of discarding was second only to that of adding. Space has had to be found for so much that is new that the pages have had to be disencumbered of much that has become comparatively useless or obsolete. Yet, since the older literature will still be read, mere obsolescence is no criterion. Many discontinued scientific terms may fairly be regarded as dead and may safely be omitted, but obsolete words in literature call for explanation as much as ever. In the decisions which have had to be made on such questions, no simple rule of thumb like the fixing of a date after which a word ceases to appear will suffice; much depends on who among older writers has used it. In general, words which had become obsolete before 1500 have been omitted, but the whole vocabulary of Chaucer has been retained. Occasional disappointment is inevitable,

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but when it came to a choice between a word used last by an obscure writer of the sixteenth century and an essential term in aviation, it seemed clear that the greater usefulness was to be obtained by explaining the latter. It is obvious that such judgments cannot be absolute; the editors have sought by consultation and accumulation of instances to reduce to a minimum the personal and capricious.

In the actual definition of words and senses, as well as in the selection of the vocabulary, the editors have had available as a most important source of information a storehouse of citations specially gathered for this revision. These citations number 1,665,000. They have been collected from a vast number of sources, contemporary authors particularly having been widely read for new words and for new meanings of older words. Not all of these citations, of course, appear in the Dictionary, but, wherever it has been possible or desirable, the definitions have been clarified by the use of quotations or of illustrative phrases specially chosen to show precise and idiomatic usage.

In the more technical fields, resort has been had to specialists, no fewer than two hundred and seven scholars, scientists, and experts having been charged with collecting, choosing, and defining terms in their respective fields.

In the field of etymology, the revision of the work of Professors Sheldon and Wiener has been thoroughly carried out by Professor Harold H. Bender, of Princeton University. Special attention has been given to linguistic terms, and the results of modern scholarship in philology, grammar, and phonetics. Mr. Paul W. Carhart has again been in charge of the pronunciation, and has had the collaboration of Professor John S. Kenyon, of Hiram College. The admirable work on synonyms in the NEW INTERNATIONAL by Professor John Livingston Lowes, advised by Professor G. L. Kittredge, both of Harvard University, has been retained and the number of words for which synonyms are given has been increased and antonyms have been added.

Professor Kittredge has again revised the section on the "History of the English Language." The *Gazetteer* and the *Biographical Dictionary* have been thoroughly revised and brought up to date. The sections devoted to an explanation of "Signs and Symbols" have been revised and expanded. And for convenience of consultation, a full Table of Abbreviations has been incorporated in the end matter of the Dictionary.

The vocabulary here presented as a result of these processes of collection and selection amounts to over 550,000 entries, the largest number ever included in a dictionary of any language. To this total should be added 36,000 names in the *Gazetteer*, 13,000 in the *Biographical Dictionary*, and 5,000 entries in the Table of Abbreviations, making a total of over 600,000. More than 12,000 terms are graphically illustrated in the Pictorial Illustrations.

Immediately upon the beginning of active work on the new edition, it became clear that the best method for deciding the hundreds of vital questions of policy which confronted the editors was to refer them to an Editorial Board, which should have full power of decision. All important problems of policy and administration have been in the jurisdiction of this Board. In the choice and appointment of the Special Editors, the methods of collecting citations, and the typographic management of the Dictionary. The Memoranda considered by the Editorial Board and the Minutes of its discussions and decisions occupy approximately two thousand typewritten pages.

The value of the judgment of the Editorial Board has been greatly enhanced by the character of its membership. Mr. A. G. Baker, President of G. & C. Merriam Company and in general charge of editorial work, had been employed as an Assistant Editor on the International Dictionary in 1890, and as Managing Editor of the New International Dictionary in 1909. His peculiarly intimate knowledge of both the business and the professional sides of dictionary editing has been of the utmost value.

Dr. Thomas A. Knott, formerly a teacher of English with experience in every stage of American education from the public school to the university, a profound student of language and literature, has been the General Editor of the new edition, and has had the supervision of the work of office editors and special editors.

Mr. Paul W. Carhart, Pronunciation Editor of the new edition, as he had been of the Supplement in 1900 and of the New International Dictionary in 1909, former student of Sweet and Viëtor, and editor of a number of Webster abridgments, has acted also as Managing Editor.

Dr. John P. Bethel, Assistant Editor of the New Edition, was a member of the Board in the later stages of its work.

Mr. Robert C. Munroe, of the Executive Committee of G. & C. Merriam Company, served as a member of the Board in the absence of Mr. Baker, and has been freely consulted at other times.

To these gentlemen, with whom he has had the privilege of sitting on the Editorial Board for many years, the Editor in Chief wishes to express his grateful admiration not only for the wide and deep scholarship to which the following pages bear testimony, but for the infinite painstaking, the open-mindedness, and the power of mutual forbearance which were essential to the successful accomplishment of a task demanding character no less than judgment and learning.

WILLIAM A. NEILSON
Editor in Chief

NORTHAMPTON, MASS.
July 2, 1934

INTRODUCTION

WEBSTER'S NEW INTERNATIONAL DICTIONARY, SECOND EDITION, now presented to the English-speaking world after more than ten years of active preparation, is, like each of its unabridged predecessors in the Merriam-Webster series, an entirely new book. Not only has every entry and every definition in the preceding edition been thoroughly scrutinized in the light of all available new information, a process which has resulted in the rewriting or revising of perhaps two thirds of its contents, but the total number of vocabulary entries has been increased to six hundred thousand, thus providing an unsurpassed richness of resources for the general reader, the student, the businessman, and the professional man. Similarly, every pronunciation, every etymology, every pictorial illustration in the preceding edition has been re-examined and, if no longer adequate, has been replaced; while the pronunciation and etymology of each of the new words have been determined, and every new word requiring it has been provided with a pictorial illustration.

In continuing the Merriam-Webster editorial policy of making modern culture and science accessible to the general reader, the editors of the new edition have held steadfastly to the three cardinal virtues of dictionary making: *accuracy, clearness, and comprehensiveness*.

It is obvious that a Dictionary so universally appealed to as a final authority must make *accuracy* its first objective. Every definition in this book has been written not only with the skill in analysis developed by long experience, but with the utilization of every resource that will secure correctness.

In the editorial striving for *clearness*, the general reader has been kept first in mind. Medical terms have been defined so that the definitions can be understood by a lawyer or a merchant; legal terms, so that they can be understood by any layman who meets them in his general reading. At the same time, it must be realized that certain sciences have levels in which are used terms that cannot be adequately explained except to persons who have passed through preliminary stages of initiation. For example, some of the terms used in trigonometry or analytic geometry cannot be made intelligible except to those who have studied algebra. Such kinds of rock as granite, slate, and sandstone can be defined simply and at the same time fully and exactly; but many kinds of rarer rocks, recognizable only by the advanced scientist by means of minor characteristics, must necessarily be defined in more technical language. On the other hand, technical terms of a general character, such as names of parts of a flower or of certain shapes of a leaf, have been so treated as to be understood by the nonscientific reader. And many vernacular terms for well-known things that have a scientific aspect, such as the names of common animals or vegetables, or the names of common colors, have been given first a nontechnical and then a technical definition, so that the needs of both general and scientific readers are met.

The *comprehensiveness* of the new edition has two aspects — the size of the vocabulary and the fullness of treatment. No other dictionary has approached the new Merriam-Webster in the number of entries; and yet the entries comprise only a selection from a much larger collection of terms. Space has not been wasted on words and phrases which are technical, too rare, too ephemeral, or too local, or which are already in the dictionary. On the other hand, encyclopedic treatment has been given to hundreds of important terms that lend themselves naturally to this method of treatment (see, in the Dictionary, ANIMAL, ELECTRICITY, ELEMENT, ELEPHANT, ANGLO-SAXON, MUSIC). Systematic definition, in which a number of related terms are defined more adequately by being all treated in a single paragraph, has been followed in hundreds of cases (see BIBLE, LATHE, LATIN, PSYCHOLOGY). Systematic treatment has also been utilized in Tables, in Pictorial Illustrations, and in Plates (for Tables, see BATTLE, FERN, OIL, INDO-EUROPEAN LANGUAGES; for Pictorial Illustrations, see AIRPLANE, AIRSHIP, BRIDGE,

LEAF, SHIP, SAIL; for Plates, see AUTOMOBILE, COIN, GEM, WILD FLOWERS).

In conformity with the traditional principle of the Merriam-Webster Dictionaries that definitions, to be adequate, must be written only after an analysis of citations, the definitions in this new edition are based on citations, chiefly those collected by the Editorial Department. Immediately upon the publication of the first edition of the *New International Dictionary*, the collection of additional material began. Since 1924 the editors have systematically reviewed chosen cross sections of contemporary printed materials, including many thousands of books, pamphlets, magazines, newspapers, catalogues, and learned, technical, and scientific periodicals. From these sources have been collected about 1,665,000 citations. Besides these, the editors have also examined about 2,000,000 citations in other dictionaries, and have utilized, as required, selections from the millions of citations contained in concordances to the English Bible, and to the works of Shakespeare, Milton, Browning, Tennyson, Chaucer, Spenser, Pope, Gray, Shelley, and other English writers. It cannot be emphasized too strongly that the reason for the fundamental and thorough soundness of the Merriam-Webster Dictionary is that it is a "Citation Dictionary."

In the technical and scientific fields, the problems being of a somewhat different kind, terms have been also collected extensively from indexes and lists.

One third of the total number of citations and former definitions consisted of literary or nontechnical material. This has been analyzed, selected, and defined by the General Editor and some of the Assistant Editors of the Dictionary Staff, among whom were Dr. Percy W. Long, Dr. John P. Bethel, Miss Rose F. Egan, Mr. Edward F. Oakes, and Dr. Lucius H. Holt.

In the technical and scientific fields, the material has been edited by more than two hundred Special Editors, widely distributed throughout the English-speaking world. All special subjects, and the editors by whom they were treated, are listed on pages xviii-xxi. The growth of recorded and available knowledge in all these subjects has rendered extremely difficult the task of choosing terms to be entered, and of condensing the wealth of material to manageable proportions.

While dictionaries, glossaries, indexes, and checklists of special subjects have been examined, no word has been entered in the New Webster merely on the authority of any other dictionary, special or general, and no definition in this Dictionary has been derived from any other dictionary. Every definition in a special subject has been written by the editor of that subject on the basis of completely independent sources of information. In other words, departmental dictionaries have been utilized only to verify the existence of words, and not as authorities for information about their meanings.

In many departments of knowledge there have been movements by important organizations to collect, to define, and to standardize the growing and changing terminology. Among these, the most important have been Aeronautics, Engineering, Colorimetry, Botany, Chemistry, Zoology, and Bacteriology.

In Aeronautics, the definitions in the *Report of the National Advisory Committee* have been compared with the recommendations of a similar British Committee, and have served as the basis for the definition of these terms by the Chairman of the Committee, Dr. J. S. Ames, who is Special Editor for Physics as well as for Aeronautics.

In Engineering, the reports of the technical committees of the American Institute of Electrical Engineers, American Society of Mechanical Engineers, American Society of Civil Engineers, American Society for Testing Materials, American Engineering Standards Committee, and the

American Standards Association, and the reports of the corresponding British associations have been fully consulted and utilized by our Special Editors in the departments of Electrical, Mechanical, Civil, Structural, and other branches of Engineering.

The labors of committees of the national Inter-Society Color Council and of the Colorimetry Committee of the Optical Society of America, and a number of private agencies, to collect and standardize thousands of names of colors have been utilized in the preparation of definitions of color terms by Dr. I. H. Godlove, who is chairman of the Committee on Measurement and Specification of the Inter-Society Color Council, and a member of the Colorimetry Committee of the Optical Society, and who has been intimately identified with others of these enterprises.

In the field of Zoology the nomenclature and classification are those approved by the International Zoological Commission on Nomenclature. Among general works of value have been *The Cambridge Natural History* and Lankester's *Treatise on Zoology*. Among works of value in various subdivisions have been: Wheeler's *Social Life Among the Insects*; Dittmars's *Reptiles of the World*; Jordan, Evermann, and Clark's *Check List of North American Fishes*; Jordan and Evermann's *Fishes of North and Middle America*; Mortensen's *Echinoderms of the British Isles*; Tryon and Pilsbry's *Manual of Conchology*; Wenyon's *Protozoology*; Calkins's *Biology of the Protozoa*; the American Ornithologists' Union's *Check List of North American Birds*, edition 4; Stuart Baker's *Birds of India*; Miller's *Check List of North American Mammals*; Miller's *Mammals of Western Europe*; Witherby's *Practical Handbook of British Birds*; and Sharpe's *Hand List of Birds*.

The classification and nomenclature of Bacteriology have been based on the recommendations and decisions of the Society of American Bacteriologists. The list of Radio terms in the New Dictionary is now as nearly complete as it has been possible to make it. The new terms have been drawn from various journals, magazines, books, and technical reports, but to a very great extent the vocabulary has been augmented by Dr. J. H. Dellinger, Special Editor of Radio terms, as a result of his close familiarity with the whole field of radio research and activity throughout its development from 1910 to the present time.

The vocabulary of Photography has undergone a number of changes and has received many additions, especially through the development of color photography, amateur cinematography, and the sound motion picture. Many additional terms dealing with Motion Pictures were secured from the *Transactions* and the *Journal* of the Society of Motion Picture Engineers. The vernacular of the motion-picture studios was compiled by a professional cameraman.

The collection of terms used in Chemistry has been greatly facilitated by the use of the material and indexes contained in *Chemical Abstracts*, the publication of the American Chemical Society, which periodically reviews all current work in its field. A systematic examination was also made of Mellor's *Comprehensive Treatise on Inorganic and Theoretical Chemistry*; Thorpe's *Dictionary of Applied Chemistry*; Allen's *Commercial Organic Analysis*; and various other works. The Special Editor for Chemistry, Dr. Austin M. Patterson, was for several years the editor of *Chemical Abstracts*, and is a member of the International Committee on Organic Chemical Nomenclature.

In Physics, Astronomy, and Astrophysics radically new conceptions of the nature of energy and the structure of matter have resulted from the work of Rutherford, Planck, Bohr, de Sitter, Eddington, Jeans, Lemaitre, and others, while new theories of the fundamental laws of the universe itself have followed from Einstein's postulation of the theory of relativity. The editing of the material in Physics, an especially difficult task, has been undertaken and carried through by President Ames of Johns Hopkins University.

The vocabulary of Mathematics has been augmented from recent mathematical works and the publications of learned societies. It is now as complete as it can be made in a non-technical reference book. The subject of tensor analysis is now adequately treated for the first time in a dictionary. Recent works of special value have been L. E. Dickson's *Modern Algebraic Theories*, and L. P. Eisenhart's *Riemannian Geometry*.

In the field of Medicine new terms have been collected especially from the *Journal of the American Medical Association*. In many cases the rulings of such organizations as the American Society of Bacteriologists or the American Chemical Society have been accepted as representing the best current usage. Certain of the newer fields, such as Vitamins, Nutrition, and Endocrinology, and recent aspects of Immunology, have required special attention. Osler's *Principles and Practice of Medicine*, Howell's *Textbook of Physiology*, and MacCallum's *Textbook of Pathology* have been of special use in writing the definitions.

The newer terms in Pharmacy have been collected by reading treatises not only on pharmacy, but pharmacology, pharmacognosy, pharmaceutical chemistry, chemotherapy, materia medica, and cosmetics, as well as the lay press and the pharmaceutical and medical journals. The nomenclature followed is that of the *United States Pharmacopoeia*, the *National Formulary*, and the American Chemical Society.

Research and education in Dentistry, and the extension of public interest, have required a considerable increase in vocabulary entries in that subject. Dental periodicals, textbooks, and dictionaries have been examined. Especially useful have been the *Journal of the American Dental Association* and Anthony's *Dental Cosmos*. Nomenclature follows the official international Latin terminology adopted by the Anatomical Society at Basel in 1895, so far as that code applies, supplemented by various reports of the Committee on Nomenclature of the American Dental Association.

In the field of Veterinary Science, the publications of the U. S. Department of Agriculture are used as a general basis. Many of the terms used are based on the *Style Manual* of the U. S. Government Printing Office. In the use and spelling of terms that do not occur in this manual, reliance is placed on the usage of the American Veterinary Medical Association and the United States Livestock Sanitary Association. Both of these organizations represent advanced thought in the scientific and regulatory phases of veterinary work. For terms in the related field of livestock breeding, feeding, and management, a study has been made of recommendations of the terminology committee of the American Society of Animal Production. In the case of new terms not yet in general use by scientific organizations, the Department of Agriculture has found it necessary, in some cases, to establish its own terminology largely for regulatory purposes. These terms likewise have been accepted in cases where the words give promise of coming into regular use.

In Botany, all former definitions and all new ones have been made to conform to the latest discoveries in the science, to the most recent and authoritative revisions of plant families, and to the greatly increased knowledge of tropical American economic and garden plants. The number of common and vernacular names of plants has been greatly increased, and little-known names are cross-referred to the best known and fully defined names. The plant families of the world are now more fully covered than in any other one book, whether dictionary, encyclopedia, or botanical publication. The most important ferns of the world are included in the *Fern Table*. All grass terms and the *Grass Table* have been revised. All important genera and terms relating to fossil plants are included. All important terms for plant diseases, fungi, and lichens, all important terms for mosses, liverworts, and algae, and all forestry, logging, and lumbering terms have been defined. The names of economic plants, especially those producing drugs, foods, fibers, and timbers, and various useful plants of Tropical America, Australia and New Zealand, India, the East Indies, the Philippine Islands, and the Pacific Islands, are included. The New Edition contains a larger number of definitions of important genera than any other one book of our world-wide coverage of genera of floristic, systematic, economic, garden, or general interest. It is practically complete in 19th-century, dialectal, and colonial vernacular plant names, and is referenced to their modern equivalents. Among the more recent important works consulted have been: Bailey's *Manual of Cultivated Plants* and *Hortus*, Britton and Brown's *Illustrated Flora of the Northern States and Canada*, Gray's *Manual*, 7th edition, Clute's *Dictionary of American Plant Names*, Index Kewensis, Supplements 3-7, Jepson's *Manual of the Flowering Plants of California*, Popenoe's *Manual of Tropical and Subtropical Fruits*, Record and Mell's *Timbers of Tropical America*, Britton and Rose's *Cactaceae*, *Standardized Plant Names*, Sud-

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worth's *Checklist of Forest Trees of the United States*, Standley's *Trees and Shrubs of Mexico*, and *Flora of the Canal Zone*, Van Wijk's *Dictionary of Plant Names*, Willis's *Dictionary of Flowering Plants and Ferns*, Rehder's *Manual of Cultivated Trees and Shrubs*, and Zon and Sparhawk's *Forest Resources of the World*. The Latin names of plants, wherever possible, conform to the INTERNATIONAL CODE OF BOTANICAL NOMENCLATURE adopted at Cambridge, England, in 1930. In a dictionary of world-wide scope it is not always possible to follow this code, because many monographs and floras that have not yet been revised in accordance with it contain the only authoritative Latin names of many plants. It was the judgment of the editors that such names be used here rather than to make the dictionary the place of publication of many "new combinations," in the technical sense of that term.

In the field of Agriculture, special cognizance has been taken of the publications of the United States Department of Agriculture, the agricultural experiment stations and extension services of the various States, and publications of similar official agencies in other English-speaking countries. The immediate avenue of approach to many of these publications has been through the thousands of abstracts of current investigations as printed in *Experiment Station Record*, of which our Special Editor for Agriculture, Mr. H. L. Knight, has been editor since 1923, and with which the Specialists in Agronomy, Horticulture, Agricultural Engineering, Animal Production and Dairying, and Agricultural Botany have been associated for many years. Standard manuals, textbooks, and other works of reference in the various subject-matter subdivisions have been freely consulted as to prevailing usages, but in addition much scrutiny has been made of original sources of information available through the United States Department of Agriculture Library, containing nearly 250,000 volumes. Much weight has also been given to definitions and terms formulated and accepted by national societies representing the various fields. Thus, the Special Editor in Agricultural Engineering, Mr. R. W. Trullinger, has been for several years chairman of the nomenclature committee of the American Society of Agricultural Engineers. This committee has given much consideration to questions of terminology, and through this channel a large number of new terms have been added and defined in the New Edition, obsolescent material has been eliminated, and a thoroughgoing revision has been effected, resulting in by far the most adequate treatment of this relatively new subject available in dictionary form. Due consideration has likewise been given to the findings of terminology committees of the American Society of Agronomy, the Society of Animal Production, and other organizations. While the aim has been to avoid extremes and theories representative of individual idiosyncrasies rather than generally accepted usage, it has been the endeavor to go into these matters thoroughly and to recognize such conclusions as have gained mature and authoritative approval.

In the field of Psychology, there is great popular interest in the results of workers in Psychoanalysis, Psychiatry, Behaviorism, and Gestalt Psychology. A wide range of literature dealing with all these new fields has been thoroughly examined.

In the fields of Religion and Theology, terms and meanings have not increased or changed so much as in other fields, but modern scholarship has verified, corrected, and augmented previous information. The religions of southern and western Asia have been covered with greater thoroughness and exactness. The Jewish Religion and Jewish Institutions have been treated from the standpoint of modern scholarship. The terminology of the Anglican Church and of the Protestant Episcopal Church has been re-examined, and, whenever necessary, supplemented and defined. Both the theological and the institutional sides of the great denominations have been handled by various authorities. The terms used in Mormonism have been defined by an editor occupying an official position in that church. Terms used in Christian Science have been defined exactly as authorized by official sources. The Orthodox, or Eastern, Churches, have been given more extensive treatment than in any other general dictionary.

The vocabulary, in the New Edition, of terms referring to topics distinctively Roman Catholic has been completely checked with the Catholic Encyclopedias and Dictionaries, and the new definitions have been based on the researches of modern scholars in the fields of Theology, Church History, Canon

Law, Liturgy, and Archaeology. The traditional theological terminology, often used in the nineteenth century in wholly new and different senses, has been critically examined, and the various meanings have been differentiated. The introduction of many new liturgical terms into the language, and the development of liturgical science, called for new and more extended treatment. The publication of the revised *Code of Canon Law* in 1917 has made it necessary to redefine both the historical and the modern significance of many terms. The language of monasticism, both technical and popular, has been critically examined and, where necessary, redefined. The names of all the principal Orders and Congregations have been included, with full descriptive treatment. The revision of all these Catholic terms, and the defining of new terms, has been done by an authoritative scholar of the Catholic Church.

In Philosophy, entries covering the great schools and leading authors have been rewritten by a new method, designed to bring out for the general reader their leading tenets, and especially those doctrines which represent their most important influence upon current thought. The philosophic definitions of those terms which have manifested the increasing influence of new conceptions in physics, biology, and the other sciences, have also been revised. Readers of such authors as Whitehead, S. Alexander, and Bertrand Russell will find that terms and meanings original with these writers and tending to become current in philosophic literature have been included. Not only the traditional logic but the subject as conceived by the newer schools is adequately covered (see LOGIC in the *Vocabulary*).

The terms in Petrology and Petrography in the New Edition have been largely drawn from the collections in the literature of the subject made during the past quarter of a century by the Special Editor, Professor Johannsen. The classification of rocks is based on their constituent minerals, a system now followed almost universally by petrologists.

Practically all geological terms now in use by geologists are included in the vocabulary. The nomenclature is based on the decisions or the usage of the International Geological Congress, the Geological Society of America, the United States Geological Survey, and on a general survey of geological publications. Geikie's *Textbook of Geology*, Chamberlin and Salisbury's *Geology*, and Pirsson and Schuchert's *Textbook of Geology* have been valuable sources of information.

New material in Mineralogy has been drawn principally from *Mineral Abstracts*, an exhaustive summary of current mineralogical literature, issued by the Mineralogical Society of Great Britain, and "New Minerals," a section of the *American Mineralogist*. Dana's *Textbook of Mineralogy* (Fourth Edition, edited by W. E. Ford) has also been an authority of weight.

Archaeological research, not only in Egyptian, Semitic, and the seemingly inexhaustible cuneiform sources, but also throughout the Aegean area, in central and western Europe, in Persia and northwestern India, in northern Africa, and in Central America, has produced noteworthy results during the past two decades. Many of the important results have been published in such general works as *The Cambridge Ancient History*, Breasted's *Ancient Times*, Olmstead's *History of Palestine and Assyria*, Albright's *Archaeology and the Bible*, and Speiser's *Mesopotamian Origins*; many others have been as yet recorded only in the learned journals and in monographs; still others are available only in publications of untranslated texts or in the original uncopied inscriptions scattered through the principal museums of the world. All these sources have been searched for new terms and new information as a preliminary to the selection of entries and the composition or revision of definitions.

Recent exploration and the opening up of new areas to commerce have made possible far more extensive and thorough studies in Anthropology. Many ethnographic lists, some of them not yet published, and the indexes of periodical literature in this field, have been thoroughly searched. The number of names of primitive tribes, although not complete, has been very greatly increased.

The background of the military vocabulary remains unchanged by the wars of recent years. From the classic writers are taken the terms which have been long used in discussing the art of war. For the terms originating more recently, the military journals of the United States,

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Introduction

France, Germany, and Great Britain, and the records in the Historical Section of the Army War College have been freely consulted. Of special value is a glossary published for the use of the Infantry School at Fort Benning. Many words of modern coinage have been defined only after consultation with individual authorities actively working in a particular field of the military art.

Increase in the number of nautical and naval terms included has resulted from the consultation of additional sources available since the last edition. The following works have been of special value in the checking and revision of the definitions throughout this New Edition of the Dictionary: Biddlecombe's *The Art of Rigging*, Stephen B. Luce's *Seamanship*, Austin M. Knight's *Modern Seamanship*, E. Keble Chatterton's *Sailing Ships and Their Story*. In addition, official publications of the Navy Department were available and were freely consulted. For some of the archaic or obsolete terms and meanings, the facilities of the fine public libraries in Philadelphia, Penn., and in Camden, N. J., were used. By these various checks the authority of the definitions has been assured.

The terms in this field have been edited by Dr. Bender, editor also of Etymology. Names of hundreds of dialects and languages

Philology and Linguistics are now defined for the first time in any dictionary. Such important recently discovered languages as Hittite and Tocharian are encyclopedically treated. The language families of the world have been reclassified, the more important groups being presented in formal tables. Special attention has been given, in the light of recent research, to the description and classification of the more remote and obscure tongues, such as those of Africa. The definitions of the names of the American Indian languages were written or revised by Joseph Coy Green, A.M., formerly of Princeton University, who made for these and for etymological purposes a comprehensive and intensive survey of available Amerind material, both printed and unprinted. In linguistics, as in philology, many new terms have been added, the result mainly of the recent advances in that science. There is less dependence upon the classical tradition, and a broader and more accurate reflection of the modern scientific approach to the study of language.

Phonetic terms have been reviewed and defined by Dr. Kenyon, also Consulting Editor in Pronunciation. During the past twenty-five years an increasing interest in phonetics has been manifested, not only among linguistic scientists, but by college teachers of English-language courses and their growing classes, by teachers of the Modern Languages, and by teachers of Speech. The New Edition endeavors to meet this wider interest not only by the inclusion of all terms, old and new, that have gained general acceptance, but by reducing to the minimum consistent with accuracy the purely technical elements in the definitions.

Both the long recognized and the more recently emphasized aspects of language brought out by the study of Grammar are fully covered. The definitions form a consistent descriptive scheme reflecting the best current thought on the functions of words in sentences. Terms which are obviously the suggested innovations of individuals, and which have not received general recognition, are not entered. Important sources of terms and information have been Jespersen's *Philosophy of Grammar* and *Modern English Grammar* and Sapir's *Language*.

The New Edition covers, more completely than any other general dictionary in any language, the tribal names of American Indians in North, Central, and South America, as well as the American Indian gods, heroes, mythological beings, and terms relating to ethnology, archaeology, religion, folklore, and mythology. For tribes of the United States and Canada, the spelling used in official publications of the United States Government has usually been followed. For tribes of Mexico and Central America, Thomas and Swanton's *Indian Languages of Mexico and Central America* and their *Geographical Distribution*, and for South America, Chamberlain's *Linguistic Stocks of South American Indians* and Brinton's *The American Race* have been used as guides in attempting to reach a standard of spelling. In the case of all except the least important tribes, the linguistic affiliation and the territory occupied are named. Definitions of names of the more important tribes contain information in regard to the physical characteristics, culture, history, and present condition. The New Webster is the first dictionary ever published

in which words of American Indian origin (exclusive of tribal, geographical, and other proper names) are etymologized with the same care and thoroughness as words of Indo-European and Semitic origin. Hundreds of these words are comparatively rare names of plants and animals, but others (as *canoe*, *hurricane*, *patato*, *toba to*, *woodchuck*) are common English words, the American Indian origin of some of which has now been ascertained for the first time.

The newer, and especially the postwar, terminology of government and politics has been collected from many sources, and has been checked from yearbooks and from the annual *Indexes of The New York Times*.

Government The redefining of many older terms and the defining of numerous newer terms in sociology have been necessitated by the development, during the past twenty years, of a new and more precise terminology, especially in the fields of social interaction, social psychology, and social anthropology.

The recently enhanced interest in the political situation in India, and the growing knowledge of Indian thought and art, have necessitated the inclusion of new words and a redefinition of others.

India Changes in the political, economic, and linguistic status of Ireland, and an enhanced interest in its native literature and its cultural history and relations, now the most important field of Celtic studies, are reflected in the treatment of this part of the vocabulary.

Ireland Political, economic, and social ferment in China, largely the result of the impact of Western civilization, has caused the production of a new literature of interpretation of Chinese civilization. In this literature appear many terms, both English and Chinese, for various aspects of Chinese culture, which have required informative treatment for the English-speaking reader. The New Edition is especially rich in its fresh interpretation of Chinese life and institutions. The principal sources of information, in addition to the special author's intimate knowledge, and the extensive libraries available to him, have been Samuel Couling's *Encyclopaedia Sinica* and Herbert A. Giles's *Chinese-English Dictionary*.

China Business, Finance, and Economics have also been covered extensively, and many terms dealing with recent economic tendencies and with the newer forms of business have been defined for the first time.

Business The admirable labors of Mr. F. S. Allen in treating the inherited vocabulary of law have been supplemented in this edition by the work of the Dean of the Law School of Harvard University, Dr. Roscoe Pound. Dean Pound has presented the modern concepts as exhibited in recent statute law, as well as the new terms and new meanings of older terms used in international law. Recent volumes of *Research in International Law* have been exhaustively consulted.

Law The special editor in Music has for many years been interested specifically in the profession of music teaching in schools and colleges, but he is also well known as a musicologist, especially in the fields of theory and terminology.

Music The vocabulary of this edition has added the newer terms, such as *atonality* and *polytonality*, has included various additional older terms not previously entered; and has clarified and simplified a very large number of the former definitions with a view to making them more quickly intelligible to the dictionary user.

Few institutions in English-speaking countries during recent decades have equaled Libraries in their remarkable growth and development. As our public and institutional libraries have broadened their service and been brought into contact with more individuals and different classes of people, the terminology of the professional librarian has become better known and more common.

Libraries The treatment of library terms in the New Edition is in the charge of H. C. Wellman, Librarian of the Springfield, Mass., Public Library, who has been in intimate and practical touch with the affairs of the American Library Association. Important sources of information were Cutter's *Rules for a Dictionary Catalog* and Bostwick's *American Public Library*.

Names of weights and measures are given in *Tables* with their equivalents in the metric system and in the common units of the United States and Great Britain, together with other useful information (see *WEIGHT, Table; MEASURE, Table*, in the *Vocabulary*). Units of weight and measure of ancient and modern times, including units

which were in use in many countries prior to the adoption of the metric system, are covered. To secure accuracy in definition the terms have been checked by various specialists in the employ of the Federal Government and in some of the State Governments. As original sources, various reports and special treatises prepared by U. S. consular officers, and also official pamphlets, reports, and statistics from foreign governments on their native weights and measures, have been freely used. Numerous authoritative general and special works on the subject, published in many countries and languages, have been consulted, which could not be mentioned in the space limited to this introduction.

The rapid advance in mechanical technology during the last quarter century has made it imperative to use the most recent publications in this field as sources. Books were practically out of the question, excepting such standard works as Colvin and Stanley's *Machine Shop Primer*, Colvin's *American Machinists' Handbook*, Kent's *Mechanical Engineers' Handbook*, and Marks's handbook of the same title. For most of this field, current periodicals were used, such as the *American Machinist* and *Mechanical Engineering*. Terms involving standardization features were checked with the publications of the American Standards Association and the United States Bureau of Standards. In the majority of instances, recourse was had directly to manufacturers' catalogues, for which purpose the collection in Whipple's *Catalog Studies*, brought up to date annually, was found most valuable.

The more recent mechanical developments of printing, engraving, and allied industries have been fully treated, while the terms of the older craft, always of great historical interest, and most of them still in use, have also of course been retained, many definitions having been expanded or rewritten. The names of scores of type faces, including newer faces that have come into wide use, have been entered and exemplified with a sample of the type they name.

Card Games have been thoroughly treated, both from the historical and from the modern aspects, by a lifelong authority and writer on the subject, R. F. Foster. Terms and information have been chiefly drawn from his private library of 300 volumes on this subject.

The many new monetary units and the changed denominations and values of coins resulting from monetary systems created or modified since the World War are given in the comprehensive tables of modern coins (see COIN, *Table*, in the *Vocabulary*). The names and equivalents of obsolete coins, which command interest because of their historical and literary uses, have been thoroughly treated in the light of modern research, usually in their places in the *Vocabulary*. For the information as to those coins that are chiefly of numismatic interest, such works as Frey's *Dictionary of Numismatic Names*, and Head's *Historia Numorum* have been relied upon; for information regarding recent coins, the sources have been publications of the United States Mint and of the Treasury Department.

Terms in Philately have been selected and defined after a complete survey of modern philatelic literature, including especially the *Scott Standard Postage Stamp Catalogues*, the annual issues of which have been the principal philatelic reference books in the United States for more than 70 years. In addition to this authority, periodical literature and the reference works of Fred J. Melville of England and of B. W. H. Poole, Willard O. Wylie, and Kent B. Stiles of the United States have been consulted.

Recent developments in the Orient have again increased popular interest in the Philippine Islands, where many thousands of Americans have lived during the past quarter of a century. Slang and colloquial terms dealing with Philippine life and institutions have been fully covered, even though the language is only partly Anglicized. All botanical and zoological words of economic importance are defined. In recent years new studies have been made of the Malayan and Indonesian peoples of the Islands, and many of the earlier tribal names have been replaced as a result of fuller knowledge. Kroeber's *People of the Philippines*, issued by the American Museum of Natural History, has been the chief source of information for this last class of terms.

The entry, definition, and proper classification of selected non-standard and substandard English words have been greatly ex-

tended in the New Edition. Both Samuel Johnson and Noah Webster conceived it to be a duty of the dictionary editor to maintain the purity of the standard language. However, with the growth in literacy of the past century, and the increase, in fiction and drama, in radio and motion picture, of the use of dialect, slang, and colloquial speech, it has become necessary for a general dictionary to record and interpret the vocabularies of geographical and occupational dialects, and of the livelier levels of the speech of the educated. The shifting status of many expressions in slang and colloquial speech has made it necessary to review and rejudge the status and validity of all such terms, whether newly collected or contained in former editions of this Dictionary. Slang terms and slang meanings of standard words have been entered only when there is evidence that the slang term has been in use for a considerable length of time, and when it has been used in a printed work which is likely to continue being read. The carefully checked judgment of the editorial staff concerning such terms is expressed in the italic labels *Colloq.*, *Dial.*, *Slang*, etc., appended to the definitions. The Dialect collections of the New Edition have in large part been edited by Dr. Percy W. Long.

The use of Lowland Scottish not only as a living speech in a large part of Scotland and in many parts of the world where Scotsmen have settled, but in the works of such distinguished writers as Burns, Scott, Stevenson, and Barrie, has made necessary a fuller treatment than was required by mere local dialects. The editors have aimed at including all Scottish terms occurring in significant literary work, and these have been edited for the New Edition by Miss Margaret Wattie, under the supervision of Dr. William A. Neilson. This edition follows the policy of earlier editions in covering all the literary and most of the technical and scientific words and meanings in the period of Modern English, beginning with the year 1500. The only earlier author completely covered is Chaucer. Obsolete meanings of living words are, of course, included. But obsolete spelling variants for the period before the year 1600 are not entered exhaustively, except for such outstanding writers as Chaucer and Spenser, who are still reprinted in their original spellings.

In a civilization functioning largely through manufacturing and commerce, trade-marks have made a distinct contribution to the common vocabulary. The public has expressed its curiosity about the pronunciation, the derivation, and the exact meaning of large numbers of words originally coined for use as trade-marks. All entered words that have been suspected of being trade-marks have been investigated in the files of the United States Patent Office at Washington, D.C., and those shown to have been originally used as trade-marks have been defined as such. The inclusion of a word in this Dictionary is not, however, to be considered an expression of the publishers' opinion as to whether or not it is subject to proprietary rights, but only as an expression of their belief that such a word is of sufficiently general use and interest to warrant its inclusion in a serious work of this kind. No definition in this Dictionary is to be regarded as affecting the validity of any trade-mark.

There has been so general an expression of support for simplified spelling by scholars and linguistic scientists that in this edition of the *New International Dictionary* there have been included most of the simplified spellings recommended by the American Philological Association and by the Simplified Spelling Board.

The number of titles of important literary works, paintings, works of sculpture, operas, etc., has been greatly increased in the New Edition. The date of composition or publication, or both, and the name of the author, painter, sculptor, or composer, of thousands of important works, are given. The names of important characters in fiction, drama, opera, and the like, frequently with a summary statement of the role played by them, are entered with pronunciation and the place of occurrence.

All Scripture proper names, whether in the Authorized Version, the Revised Version, or the Douay Version of the Bible, or in the Apocrypha, have been entered and the pronunciation given, either in the *Vocabulary* or in the *Gazetteer* or *Pronouncing Biographical Dictionary*.

All the more important names have also been defined, usually with

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The entry, definition, and proper classification of selected non-standard and substandard English words have been greatly ex-

a reference to the place of their occurrence. Less important names are entered, with the pronunciation, in the lower section of the page. Important Biblical place names, or names of peoples occurring in the rich materials of archaeological research, especially during the past twenty-five years, have been treated in the light of such results.

Quotations and proverbs from classical and other foreign languages have been entered and translated, if they occur in such English writings as are commonly read. In all such entries, the pronunciation and the language of origin are always indicated.

The indication of the accent or accents of a word, which was the only clue to pronunciation offered in the earlier English dictionaries, is no longer sufficient. Constantly increasing interest in the pronunciation of words demands

Pronunciation of modern dictionaries a full phonetic respelling of vocabulary words and names. In this Dictionary, as in all editions since 1890, such respelling is given within parentheses immediately following the vocabulary entry. Such full and exact recording of pronunciation as is thus given requires not only a degree of aptitude obtained only through special training and long experience, but a breadth of view that can comprehend the problem of pronunciation as a whole, with special attention to its development in the present as well as in the past.

The first necessity confronting the pronunciation editor is the adoption of a standard in general accord with which the pronunciations of the thousands of individual entries must be uniformly indicated. In this edition, as in preceding Webster Dictionaries, the standard adopted is based upon the cultivated usage of all parts of the English-speaking world. It must, however, be clearly understood that, in the application of such a standard—or, indeed, of any standard—to individual cases, certain definite limitations are fixed by the very nature of a work of general reference such as this. Of these limitations two stand out especially.

To begin with, each word must be isolated and considered as an unrelated entity and its pronunciation indicated from this point of view. Though the necessity for it may seem obvious, this practice of the dictionary is so often lost sight of by consultants that it seems well to call attention to it here. It would be impossible, even were it desirable, to attempt to record the pronunciation of "running speech," that is, of words as elements in connected spoken discourse, to attempt to indicate rising or falling pitch, syllabic emphasis or lack of emphasis, contraction or prolongation of sounds—in short, the countless minor variations to which the pronunciation of a word is susceptible under the influence of other words with which it is temporarily associated.

The second limitation imposed upon the pronunciation editor consists in the necessity for making a choice among the different styles of speech suitable for different occasions. In this edition, the style adopted for representation is that of formal platform speech—and this must be clearly remembered by consultants of the pronunciations here given. The omission of less precise pronunciations of familiar words does not, of course, indicate either that those pronunciations do not exist or that the editors of the dictionary refuse to recognize them. They do exist, and very naturally so when the occasion suits. In familiar casual conversation consonants are often dropped or slurred, vowels of unaccented syllables become indistinct, syllables are often dropped out of the pronunciation of words. The recording of all such colloquial pronunciations of every separate word is not, however, possible in such a Dictionary as the NEW INTERNATIONAL.

A fuller discussion may be found in the *Introduction: Pronunciation*, §§ 4-9; §§ 70-72.

The pronunciations contained in this Dictionary are not theoretical. They represent actual speech—the speech of cultivated users of English, speaking formally with a view to being completely understood by their hearers.

There are, of course, a host of other problems before the editor of pronunciation. Geographical variations must be noted and recorded. A marked difference between American speech and British (as in *schedule, laboratory*) is the most obvious of such variations. For fuller discussion, see *Introduction: Pronunciation*, § 4; § 68. Less easy to evaluate are narrower regional differences. In many words of chiefly dialectal or regional use the prevailing pronunciations of the chief area of usage must be determined, often by direct inquiry from persons native to the region; and in many such in-

stances, where a word crops up in widely separated parts of the English-speaking world, more than one such pronunciation must be recorded. In indicating these variations of pronunciation, British preferences are indicated by the label *British* (abbreviated to *Brit.*) prefixed to the phonetic respelling to which it applies, Scottish pronunciation by the label *Scottish* (*Scot.*), and dialectal forms by the label *Dialectal* (*Dial.*). In many instances the supplying of two or more pronunciations, even with necessary identifying labels, is insufficient to explain fully the geographical distribution; for such words an explanation is provided either within the pronunciation parentheses or, as a note, at the end of the entry, a cross-reference to the note being given within the pronunciation parentheses.

Nautical words, too, present much the same sort of problem, and wherever the nautical pronunciation differs from the best accepted landsman's usage, both pronunciations are given, the nautical being preceded by its identifying label (*Naut.*).

Besides variations of these kinds, there are the important and often perplexing changes of pronunciation brought about by the passage of time. Where such a change is perfectly obvious and the new, or newest, pronunciation definitely established (as in the word *apron*, *ā'prŭn*, also pronounced *ā'pĕrn*), the pronunciation editor's task is merely one of recording. In most of the instances, however, the matter is not so simple. For there are today hundreds of words pronounced in two or more ways by the persons on whose speech the standard pronunciation of the Dictionary is based. The editor's problem in the case of such words is many-sided. He must decide first how many of these pronunciations are widely enough used to demand record in the Dictionary, and then the order in which they are to be arranged so as to indicate the usage or usages with widest currency. In making the decision he must duly consider the kinds of persons who use the new or newer pronunciation, and must weigh this evidence against the printed evidence of dictionaries and similar reference books and determine, as far as it is possible to do so, not merely the present status but the tendency of pronunciation of such words—what might be called the "drift of pronunciation."

In preparing the pronunciations for this edition, then, every word contained in the previous edition has been scrupulously compared with the most recent data. Painstaking effort has again been made to ascertain the best present usage, American and British, all important modern dictionaries and all available lists of recent phoneticians and orthoepists have been carefully consulted and compared, and the information thus secured has been supplemented by personal observation. Inquiries regarding thousands of individual words have been addressed to leading scholars and, in the case of technical words, to specialists and experts; and lists of words, both general and technical, of doubtful pronunciation have been referred to cultivated speakers in various parts of the English-speaking world, in order that they might indicate the pronunciations preferred in the cultivated speech of their locality.

The Webster Phonetic Alphabet, as modified for use in the first edition of the *New International Dictionary*, has been retained with but three minor alterations (§ 4, ng; see *Pron.*, §§ 116, 154-155, 177), since it was deemed unwise to change essentially a system which has met with such wide acceptance and which has become so well known, not only from its use in Webster's Dictionaries, but also from its general adoption by textbooks and works of reference. A comparison of the Webster Alphabet with the International Phonetic Alphabet will be found in the *Introduction: Pronunciation*, on page xxii.

The Pronunciation Editor of this edition has been Mr. Paul W. Carhart. Dr. John S. Kenyon, the Consulting Editor, has been a constant adviser on all matters of policy and on their application in detail. Office Assistants have been Miss Elsie Mag and Mr. Edward Artin.

Much important material has been added in the article on *Pronunciation*, pages xxii-lix, of the *Introduction*. This has been thoroughly revised and rewritten by Dr. John S. Kenyon. Thousands of individual entries in the Vocabulary are referred to numbered sections of this article, in which far fuller and more systematic information is given than can be included in any single entry. For many words, also, the reader is referred to § 277 of *Pronunciation*, in which will be found a *Table* of the pronunciations of over 1100 words that are differently pronounced by different authorities.

Each word has two aspects, form and meaning. In both respects the word is the product of a history, often long and complicated,

sometimes obscure. The Dictionary gives the current forms and meanings of words, and also those that are preserved in English literature or survive in dialect or have only recently disappeared from the spoken language. But back of that is a record of origin and development that is of value and interest for its own sake as well as necessary to a full understanding of the word itself. This record, so far as it is known or surmised, is inserted within square brackets between the word and its definition. This is the Etymology — the history of the form and meaning of the word.

For each word of sufficient importance, the etymology thus presented attempts to show the development of form and meaning within the language, the source whence it came into English, and its ultimate derivation and relationship. But words from the Chinese, for example, or from Bantu, or American Indian languages, often cannot, and for our purpose need not, be traced farther than to their origin in those languages, although occasionally reference can be made to other words from the same or related elements. The future holds much promise for historical and comparative research in these remoter tongues, but they have not yet received from linguistic science the study that has been given to such families as the Indo-European and Semitic, which concern our civilization so much more closely and are so richly recorded in their ancient literatures. The chief sources of the English vocabulary are to be found within the Indo-European family to which it belongs, and the great majority of our words are either from Anglo-Saxon or from Latin, directly or through French. For such words a complete etymology includes both history — that is, recorded forms as far back as they can be traced — and the prehistory of Anglo-Saxon or Latin words as established by the comparative course of related languages, such as Old Norse and Gothic for the Teutonic group (to which English belongs), or Greek and Sanskrit for the Indo-European family (to which both Latin and the Teutonic languages belong).

In this Dictionary, then, the typical etymology of an English word inherited through Anglo-Saxon from common Teutonic, and perhaps also from common Indo-European, or of one borrowed at any period or through any medium from Latin or Greek or other Indo-European language, consists of two parts, divided by a semicolon. The first part deals with the recorded history of the word, and the second, usually introduced by the words "akin to," throws light on its prehistory. Related English words (as *hoar, hue; hive, heap, hip*), including those derived by different channels from the same source (as *beef, cow*), are connected by cross references, and often one group leads to another until dozens of entry words are so linked. And since there are not many important groups of Indo-European words that find no representation in English, the total forms a fairly complete picture of Indo-European etymology.

The first item within the brackets indicates the immediate source of the English word (see BOUNTY, in the *Vocabulary*). If the form in the source is identical with that of the English word, the word is not repeated (see ALBUM). Elsewhere in the etymology the form is given after the name of the language (see ATHLETE). If at any point the meaning is not given, it is to be taken as agreeing with that of the preceding word or words (see 1ST ARTERY). In many instances it is difficult or impossible to say with certainty whether a word has come into English directly from Latin or through French or Old French. If, after a careful consideration of all the evidence, real doubt still remains, then the etymology is introduced by the (abbreviated) words "Old French (or French) or Latin," followed by the history of the French and Latin words (see ALLEGORY). Often a word is borrowed partly from French, partly from Latin, and the etymology begins with the words "French and Latin" (see FUNCTION). Care is taken in the determination and designation of period and dialect, as Old French, Anglo-French, Middle French, Late Latin, Vulgar Latin, Medieval Latin, Anglo-Latin.

In the spelling or transcription of foreign words in the etymologies, recognition has been given both to national and to scholarly practices and trends. Between these two there is less discrepancy than formerly, and both tend more and more to the reduction of unnecessary characters or diacritical marks, and to an increased use of the Latin alphabet. Thus, for Lithuanian or Albanian, linguistic scientists are apt to use the simple alphabets that now prevail in those countries, instead of the elaborate diacritical systems that were formerly considered necessary to scholarship. The macron serves for length of vowel better than the apex in Old

High German or the acute accent mark in Old Irish, both so carefully preserved by an older tradition. Hence, in the present edition, Greek is transliterated in the etymologies, Anglo-Saxon *thorn* and *edh* are alike rendered by *th*, *ea* by *æ*, and similar reductions are made throughout when permitted or required by the best scholarly usage. And when in any country a reformed alphabet or spelling has been introduced and generally accepted on the authority of Government or Academy, those reforms are accepted here. But beyond these steps, and beyond the normal need or expectation of the specialist in any language, there has been no reduction, and there has been none for the mere sake of reduction. Distinct sounds are still usually marked as distinct sounds, and different signs in non-Roman alphabets are transliterated by different Roman characters. In the romanization of words from Oriental languages, especially those written in Sanskrit or Arabic characters, or in alphabets allied to either, as Hindustani, Persian, Turkish, Malay, the system followed is, with some elections and slight modifications, that approved by the International Congress of Orientalists, used by the British and American Oriental societies, and published at intervals in the *Journal of the Royal Asiatic Society*.

The etymologies in the present work are built on the sound technique and the solid achievements of Mahn and Sheldon in previous editions. But philological scholarship has so widened and deepened in recent years that mere revision in detail would not have satisfied modern needs. The revision has been carried out with such comprehensiveness, independence, and thoroughness that the present work is entitled to be regarded as marking a new stage in the science of English etymology. There are here a large number of acceptable etymologies that cannot be found in any other publication. Many large groups of ultimately related English words, as those of *hive* and *heap*, *wean* and *win*, *spike* and *spoke*, are given new and more connected treatment. Whenever, in such groups of words, the development of meaning is not clear or the semantic connection not obvious, changes of meaning are explained or the basic idea underlying the group or groups is indicated. Much persistent effort has been devoted to the tracing of some thousands of loan words from more or less remote languages that have heretofore been left without etymology or ascribed vaguely to "native" sources. It is estimated that, of the total number of such hitherto obscure words, the origin of about 70 per cent has been found, sometimes only by recourse to speakers of the original tongues. And of course a great number of new words are here etymologized for the first time.

No pains have been spared to make the etymologies representative of the present state of philological knowledge and of the best contemporary philological opinion. Even the recently discovered Hittite in Asia Minor and the Tocharian in Chinese Turkestan have been called upon frequently for their contributions. All of the etymological dictionaries, and most other works dealing with etymology in the various Indo-European and Semitic languages, have been kept constantly at hand, as well as the ordinary dictionaries of those and remoter tongues. As a preliminary to the present work, abstracts were made of all articles having any connection with English and Indo-European etymology that have appeared within the past twenty-five years in the philological journals published in English, French, Dutch, German, Italian, and the Scandinavian and Balto-Slavic languages. No source of information on any word has been consciously neglected, and where so many authorities have been consulted it would be impossible to mention all and gratuitous to mention only some. But exception must be made of the Oxford English Dictionary, especially for its dated citations and its invaluable assistance in ascertaining the earliest appearance of words in the language.

The etymologies of the present edition were written by Harold H. Bender, Ph.D., Litt.D., Phil.L.D., Professor of Indo-Germanic Philology and Chairman of the Department of Oriental Languages and Literatures in Princeton University. He was assisted, especially in the tracing of loan words to their sources, by many specialists, notably the following: Professor Frank R. Blake, of Johns Hopkins University, in Tagalog and the other languages of the Philippines; Dr. Henry S. Gehman, of Princeton University, in Hamitic languages; Mr. Joseph Coy Green, now of the Department of State, Washington, in American Indian languages; Professor Philip K. Hitti, of Princeton University, in Arabic and the other Semitic languages; Dr. Arthur W. Hummel, of the Library of Congress, in Chinese; Professor F.

Courtney Tarr, of Princeton University, in Spanish and other Romance languages; Mr. Edwin H. Tuttle, of Washington, D.C., in Indo-Aryan, Dravidian, and Austronesian languages; Professor Shirley H. Weber, of Princeton University, in Greek and Latin; Dr. Alice Werner, of the School of Oriental Studies, University of London, in Bantu and other African languages; Professor Walter Livingston Wright, Jr., of Princeton University, in Turkish and allied languages. The abstracting of articles in the philological journals was done chiefly by Professor Stephen J. Herben, Jr., now of Bryn Mawr College. Among various graduate students of Princeton University who assisted in tracing scientific terms, and in indexing, reference work, and the like, special mention should be made of Mr. George C. Miles, now of Robert College, Constantinople, for his original contributions to the etymologies of words from the Ural-Altaic languages.

In addition to proper names, more than a hundred words of Chinese origin have come into the English language, largely as a result of early trade contacts with China. These borrowings include especially names of plants, fruits, vegetables, governmental organizations, and the names of Chinese dynasties: words such as *ginseng*, *tea*, *soy* (*bean*), *kumquat*, *hsien*, *fu*, *Ming*. As the earliest trade relations were with Canton, the English romanization accepted by usage has usually attempted to approximate the sound of the word in the Cantonese dialect as heard and recorded by Westerners a century ago. But the pronunciation of Canton is not that used by the majority of the Chinese people, who speak the so-called "Mandarin," of which the dialect of Peking is the accepted standard. For that reason, beside the romanization that has come down by usage (the recorded English word), we indicate (in the etymology), wherever possible, the value of the sound in the Mandarin, or, as it is now called, the "national language," which is spoken over all of north, west, and southwest China, and is increasingly used in southeast China as well.

No system of romanization is capable of indicating unambiguously either the meaning or the sound of Chinese words. The accepted romanization for the Peking dialect, and the one here used, is the system invented by Sir Thomas Wade after the middle of the last century. In this system aspirated words are indicated by an apostrophe after the first letter of the word; or after the second letter in words beginning with *ch* or *ts*. As the Chinese language is monosyllabic and is strictly limited to some four hundred vocables, it follows that each vocable may have many different meanings. The meaning applicable to such a given monosyllabic sound, or vocable, can really be determined only when it is written as an ideograph or occurs in conjunction with other words which give a clue to the meaning. In order to reduce the confusion caused by the paucity of sounds, each of which is capable of many different meanings, the Chinese have from earliest times resorted to the expedient of pitching each sound in at least four different keys, each variation indicating a different meaning distinguishable by its own ideograph. For the Peking dialect these so-called "tones" are four in number; for central China there are five; and for southeast China as many as eight different tones, or keys, in which a single sound may be pitched.

In this Dictionary the four tones of the Peking dialect are indicated by the numerals 1, 2, 3, or 4 at the upper right-hand corner of the word. The value of the four tones can be rightly apprehended only when heard by the ear, but they may be roughly differentiated as follows: The first, or "upper even" (*shang p'ing*), is a monotone pitched slightly higher than ordinary speech; the second, or "lower even" (*hsia p'ing*), is pronounced with a quick upward inflection; the third, or "sinking" (*shang*), has a prolonged downward and then upward modulation; while the fourth, or "entering" (*ch'ü*), tone has the force of a word spoken with an air of decisiveness and finality.

The admirable work on Synonyms in the *New International Dictionary* of 1909, by John Livingston Lowes, now Francis Lee Higginson Professor of English Literature at Harvard University, under the advisory supervision of Professor George Lyman Kittredge of Harvard University, has been retained practically intact. The field covered is limited to nontechnical words and meanings; the distinctions indicated are based on actual usage; about six thousand illustrative literary citations are given, in order to exemplify in the case of each word the particular shade of meaning under discussion. So far as space has

allowed, it has been an aim of the editors to give for each word a sufficient number of clear examples to make possible in some degree an independent survey of the facts. The citations have been drawn from writers — essayists, novelists, poets — whose works exemplify the best modern usage, and among these special weight has been given to those authors who combine idiomatic freedom of style with correctness. The best colloquial usage has always been kept in mind, and in exhibiting this, the great letter writers (notably Cowper, Gray, Lamb, FitzGerald, Stevenson, and Lowell) have been especially valuable.

It frequently happens that a word which is used in several senses has a number of more or less independent groups of synonyms. Thus, *contract* (v.) in the sense of "undertake by contract" has among its synonyms *promise*, *engage*, *pledge*. In the sense of "draw together," it is synonymous with *shrink*, *constrict*, *reduce*. All six words are synonymous with *contract*, but the words in the one group are not synonymous with those in the other. Such groups are set off, in the lists of synonyms, by semicolons, and the comma is used to separate words within each group.

The lists of synonymous words not accompanied by distinctions have been greatly increased in number and have been largely augmented. The distinctions in meaning of the words in these "finding lists" are evident from the definitions of the separate words.

Antonyms, or, often, cross references to an entry in which a group of antonyms is fully treated, have now also been inserted.

The added or augmented lists of synonymous terms, and the added antonyms, have been principally in charge of Mrs. Dorothy Leonard Arlin.

A *Brief History of the English Language*, which has been a feature of the Merriam-Webster Dictionaries since 1864, has been revised by Professor George Lyman Kittredge of Harvard University. Much greater attention has been paid to the developments of the language in the modern period since 1600, and information has been incorporated concerning such recently discovered Indo-European languages as Hittite and Tocharian.

The number of terms covered by pictorial illustrations exceeds 12,000. Every illustration in the previous edition has been examined and, if it proved no longer entirely adequate, a new and adequate drawing has been made. Several hundred new and original drawings of flowers and plants have been made by Mrs. Alice Earle Hyde, a well-known botanical artist; many hundred new drawings of mammals, birds, insects, crustaceans, invertebrates, etc., by Mr. W. H. Southwick of the American Museum of Natural History; and many hundred more, of architectural subjects, furniture, machinery, mechanical and scientific apparatus, etc., by Mr. Harry Kitson, Mr. James McKinnon, and Mr. Joseph F. Odenbach. Of particular interest and importance are Mr. Odenbach's sectional and diagrammatic illustrations showing in a simple way the construction and operation of various machines and apparatus such as the printing press, the linotype and monotype machines, the outboard motor, the telephone, the photo-electric cell, the sound picture machine, etc., etc.

The eight plates of flags, seals of states, and arms of nations have been entirely revised, remade, and brought up to date with the addition of much new and interesting material. For the first time the flags of the forty-eight States of the United States have been presented in a single plate. Sixteen new color plates have been prepared and inserted. The plates of coins, medals, and orders were made, with the assistance of Mr. Sydney P. Noe and Mr. Howland Wood, by direct photography, from specimens in the collections of the American Numismatic Society, augmented by several orders from the collection of Mr. C. A. Locker. The paintings for the plate of birds were made by Mr. Lynn Bogue Hunt, of insects by Mr. Southwick, and by Mrs. Katharine Burton Brimer. In the case of the general acknowledgment is due to Dr. Herbert P. Whitlock, Curator of Mineralogy at the American Museum of Natural History, who personally selected, from the famous Morgan collection, the gems to be painted, and passed judgment on each of the paintings. The paintings of orchids, poisonous plants, State flowers, and wild flowers were made by Mrs. Hyde. The painting of the spectrum was made by Mr. Charles Bittinger, A.N.A., who also made the paintings for the color chart from the design of Dr. I. H. Godlove. The plate of butterflies and moths was made by direct photography from specimens loaned by the

Harvard Museum of Comparative Zoology through the kind co-operation of Dr. C. T. Brues. The portrait of Noah Webster, reproduced in colors as the Frontispiece, was painted by the well-known artist, Edwin Burrage Child, painter of portraits of John Bassett Moore, John Dewey, Lyman Abbott, etc. The direction of the preparation of the illustrations has been in the hands of Mr. H. Downing Jacobs, to whose artistic taste and fertility of resource the new book owes much.

Inter's Style — spelling, compounding, capitalizing, and italicizing foreign words — has been determined on the basis of printers' usage. More than two hundred thousand citations, illustrating the practice of printers and publishers of carefully edited books and magazines, have been collected. The principal printing-office stylebooks have been consulted, especially the *Manual of the Government Printing Office*, Washington, D.C.; *Rules for Compositors and Readers at the University Press*, Oxford; *A Manual of Style*, the University of Chicago Press; and *Authors' and Printers' Dictionary*, by F. Howard Collins.

Style

Much advantage was gained through a conference with the editors in charge of publications of the United States Government while the Government Printing Office Stylebook was under revision. Many general principles governing these questions of style are discernible, especially with respect to compound words, but the editors have not been governed by any general theories which conflict with, or are contradicted by, actual usage. Whatever apparent inconsistencies may seem to exist are to be accounted for on the ground of preponderating usage. The General Editor and Mr. Charles Westcott of the Dictionary Staff have been principally responsible for this work.

The geographical and economic changes resulting from a world condition of instability during the past two decades have required

The Pronouncing Gazetteer

a complete review of all the facts presented in the *Pronouncing Gazetteer*. The completion and publication of most of the great censuses, both in the United States and in foreign countries, the increasing adequacy with which geographical information has been made available, and the continual modification of place names under nationalistic influence, have all contributed to this newest edition of the *Webster Gazetteer*. Especially important in the determination of current Anglicized forms of geographical names have been the recommendations of the United States Geographic Board and the Royal Geographical Society. The decisions of these two official bodies have always been given the fullest weight, and have almost always been accepted. In the *Gazetteer* has been continued the practice of attaching cross references to entries in the *Vocabulary* of the Dictionary, containing interesting auxiliary information about important places. The compilation and editing of material in the *Gazetteer* has been under the direction of Dr. Everett E. Thompson of the Dictionary Staff.

The growth and changes in the political and cultural life of all nations have during the same period introduced thousands of personal names, not only into the news of the day, but into the permanent historical record. Especially fruitful have been the world of political life, and the continued literary, scientific, and educational activities in all nations. It is the purpose of this new edition of the *Webster Pronouncing Biographical Dictionary* to continue the record of information about all important persons, both historical and living, who might be the subject of inquiry by consultants of the Dictionary. The *Biographical Dictionary* has continued and extended the practice of recording outstanding achievements of those persons who are included. In all pertinent cases there are mentioned titles of books, awards of prizes, scientific achievements, inventions, and other similar information. The compilation and editorial management of the *Biographical Dictionary* have been in charge of Dr. A. P. Betnel of the Dictionary Staff.

Every vocabulary entry (with certain minor exceptions stated below) is listed in alphabetical order, either in the upper section or in the lower section of the

Alphabetization entries:

- An adjective and a noun: **black diamond**, **caustic soda**.
- A noun and a noun: **beef tea**, **bargain and sale**.
- A noun and a prepositional phrase: **center of curvature**.
- A possessive noun and a noun: **Lloyd's numbers**.

Verb phrases (*break camp*, *bring about*, *clear the air*, *hang fire*), entered in italic bold-faced type, follow immediately after the simple verb. All phrases within a group are alphabetically arranged with reference to one another.

Phrases consisting of a preposition and a noun (*at hand*, in *hand*) are entered in italic bold-faced type in a paragraph immediately following the noun.

Word lists exemplifying formations made with prefixes, combining forms, etc. (*anti-*, *angio-*), are, in general, printed in small bold-faced type, and are arranged in narrow columns immediately following the prefix or combining form, etc. When, however, the prefix is so short (*be-*, *co-*, *un-*) that arrangement in lists would throw large numbers of words far out of their alphabetical order, the self-explanatory combinations made with these prefixes are placed in their alphabetical order, in the lower section of the page, with a cross reference to the pertinent definition of the prefix, etc. (*beblist*, *befurbelow*, *bewhiskered*).

Abbreviations, Geographical Names, and Biographical Names have been arranged in separate alphabets in the Appendix.

The alphabetical guide words on each page are placed at the top, and are printed in clear, prominent type.

The analysis, separation, and arrangement of the definitions of words of many meanings have presented one of the major problems

Words of Many Meanings

in editing the new Dictionary. Noah Webster in 1828 was the precursor, if not the actual originator of the "historical" method of arranging definitions. His exhaustive researches into etymology had for their primary purpose the determination of the earliest meaning of every word. Until this earliest meaning had been determined, he pointed out, meanings could not be arranged in intelligible order. Even with the limited resources at his command — lacking, as he was, the great accumulations of philological and etymological research that are available today, without accessible documents from the earlier literary periods, and without adequate dictionaries or glossaries for the earlier periods of all modern languages, especially English and French — his pioneering determined the correct principles and, in a large number of cases, the correct practice of semantic arrangement. The historical arrangement of the meanings of a word is, of course, neither purely chronological nor purely logical. Many modern English words which are descended from Anglo-Saxon had already developed numerous senses in the period before the Anglo-Saxon language was written down. The determination of the earliest meaning of a word of this kind must be based on the study of its etymology, and the arrangement of its developed meanings must be determined by inference. The comparative scarcity of documents in the vernacular between 700 A.D. and 1300 A.D. leaves the student without actual evidence concerning many developments. The lack of an exhaustive collection of citations from 1300 to 1500 imposes another handicap, although the exploration of selected printed books between 1500 and 1600, both by volunteer assistants and the professional staff of the *Oxford English Dictionary*, has lighted the way through this period. The historian of English semantics still awaits the publication of a more exhaustive selection of citations from this early modern English period. Although Du Cange's dictionary of medieval Latin has much material, an immense amount of work has yet to be done, both in the study of the relations of those meanings which he lists, and in the collection and publication of the greater mass of material which he did not explore. Similarly, the collections of citations in Godefroy's dictionary of Old French are of much assistance to the student who is tracing English words of Old French origin, but here again one encounters insuperable difficulties, because of the lack of any such digested body of evidence for French as that for English in the *Oxford Dictionary*. Nevertheless, although much remains to be discovered about the growth of the senses of English words, the body of information and the evidence now available make possible a far more adequate treatment than has hitherto been attainable.

In general the arrangement of meanings of words of many meanings in this Dictionary has been according to the following practice. The earliest meaning ascertainable is always first, whether it is literary, technical, historical, or obsolete. Meanings of later derivation are arranged in the order shown to be most probable by dated citations and semantic development. Literary meanings have usually, however, been separated from those technical meanings which carry an italic label at the beginning. Whenever these

literary meanings fall into two or more discernible large groups, each group is preceded by a roman number and a general definition. The first numbered group, of course, shows the history of meanings derived from the earliest ascertainable meaning. The second, and other numbered groups, show the development of meanings derived from the most fruitful secondary meanings. The technical senses are, except for the most urgent reasons, arranged in the alphabetical order of the initial labels. In some cases, several unimportant obsolete senses which are not in the line of development are grouped by themselves. Slang, Colloquial, Dialect, and Local senses are usually given in their historical position. For exemplifications of this practice, see in the Dictionary such words as *BAR, n., FAULT, n., PERSON, n., CLERK, n., BODY, n., BLOCK, n., SET, v.*

A new feature of this edition is the inclusion, in lists, of phrases (*color etcher, color grinder*) and of combinations (*color-free, color-maker*), and of words made from prefixes (*anti-, contra-*) and combining forms (*acro-, arterio-*).

Word Lists

These lists contain many words and phrases attested by citations, but never before appearing in any dictionary. Such entries will show the existence of such words, the spelling, the capitalization, and the hyphenation. Words and phrases are not entered in these lists unless the meanings can be inferred from the definitions of the separate parts. Similar words and phrases having special senses that require definition are entered in the Vocabulary and defined.

As part of the task of making accessible all related and auxiliary information in such a reference book as this Dictionary, the special editors and office editors have co-operated in extending the Webster method of cross-referencing from one definition or vocabulary entry to another. Many of the cross references, particularly those beginning with *See*, will enable the reader to find *essential* additional information; many, particularly those beginning with *Cf.*, will enable the reader to locate much *useful, interesting, or related* information. Some definitions (*double vision = DIPTOPIA*) consist of the "equal" sign (=) and the word where the full definition is given. Variant spellings and forms are entered in their alphabetical positions with a cross reference to the main spelling or form. Irregular plurals of nouns, irregular tenses and participial forms of verbs, irregular comparative and superlative forms of adjectives, and various inflectional forms of pronouns, are entered in their alphabetical positions with a reference to the main entry, where the word is treated systematically. Literary synonyms and antonyms are treated in groups with cross references from the entry of each word which is a member of the group. Botanical and zoological synonyms are entered with a reference to the most authentic name of the genus, family, etc., where the definition is given. In many instances, such as *bond, insurance, etc.*, all information about the

various kinds of bonds, or insurance, is presented systematically in one place, with references from the necessary alphabetical entries. The principles to be followed in verifying all the details in this complex system were drawn up by Mr. A. G. Baker, and have been carried out, under the supervision of Miss Ervina Foss, chiefly by Mrs. Dorothy Leonard Artin, Mrs. Ruth Gould Pike, and Miss Elizabeth H. Jackson.

The typography and the typographical arrangement of WEBSTER'S NEW INTERNATIONAL DICTIONARY, SECOND EDITION, have been determined after long study and many experiments. The final arrangement of matter on the page follows the general principle of the previous edition. All vocabulary entries that are accompanied by a definition (except rare obsolete words and foreign language quotations) are placed in the upper section of the page. In the lower section of the page are contained vocabulary entries which are no more than cross references to other entries, rare obsolete words with brief definitions, and foreign language quotations and proverbs. This perfecting of the method first used in the Edition of 1909 has brought into one alphabet, in the larger type, all vocabulary entries except a small number which will be consulted comparatively rarely, and at the same time has retained the advantage of saving space for the increased vocabulary through the more compact arrangement of the less important matter in the lower section.

The Explanatory Notes, immediately preceding the Vocabulary, contain not only a full treatment of the details of typography, but complete information about the practical problems involved in the use of the Dictionary. Preceding the Notes is an Index, by means of which the dictionary user is enabled to find the solution for any difficulty he may encounter in interpreting the various conventions in the Vocabulary.

The type faces employed in the composition of this edition are in large part the standard faces of the Lanston Monotype Company. For the spelling of great numbers of words of foreign origin, and for the representation of the sounds of English and other languages in the pronunciation alphabet and in other phonetic characters, a large number of special type faces were designed by the Lanston Monotype Company, usually in consultation with the printing department of H. O. Houghton and Company and the business and editorial staffs of the G. & C. Merriam Company. The persons most intimately concerned in the selection, designing, and perfection of these type faces have been Dr. W. A. Neilson, Mr. A. G. Baker, Mr. R. C. Munroe, Dr. J. S. Kenyon, Dr. T. A. Knott, Mr. P. W. Carhart, and Mr. C. Howard Roberts of The Riverside Press.

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Dr. Long, Dr. Bethel, and Mr. Oakes have been engaged principally in working out the nontechnical definitions, in reviewing the work of the other editors, and in adjusting and harmonizing the complex material after the work of the office editors and special editors had been assembled.

Miss Egan has written literary definitions, and has reviewed the work of special editors in Music, Logic, Philosophy, Home Economics, and the Roman Catholic Church.

Dr. Thompson, besides doing all the preliminary work on the definitions in History, Government, and Politics; preparing the historical tables, Philately, and Coins; reviewing the work of special editors in Economics, Protestant Religion, Accounting, and Sociology; and writing the definitions of terms from the Philippine Islands, has been in charge of the office work in Etymology.

Dr. Fries has been in general charge of the reviewing of the definitions in the biological sciences, including Botany, Zoology, Anatomy, Physiology, and Agriculture.

Mr. Jacobs, besides being in general charge of the preparation of Pictorial Illustrations and Plates, and preparing many tentative definitions in Athletic Sports, reviewed specialists' definitions in Art, Architecture, and Printing and Engraving.

Miss Fellows has reviewed definitions in Botany, Agriculture, and Zoology.

Mr. Pangborn has written many tentative definitions in Law, and has reviewed specialists' definitions in Anthropology, Archaeology, Journalism, and Greek and Roman Antiquity.

Dr. Martin has reviewed definitions in Anatomy, Chemistry (in part), Colors, Medicine, Surgery, and Psychology.

Dr. Learned reviewed specialists' definitions in Philology, Celtic, Astronomy, and Photography, and reviewed the pronunciation of words borrowed from French, German, Italian, and Spanish, and was for a time on the office staff in the work on Etymology.

Mr. Marshall, besides writing tentative definitions in Machines, Machinery, Tools, and Weights and Measures, reviewed specialists' definitions in Electrical Engineering, Radio, and Automotive Engineering.

Mr. Brockunier reviewed definitions in Geology, Petrography, Metallurgy, Chemistry (in part), Mineralogy, and Meteorology.

Dr. Owen reviewed definitions in Physics.

Of the Proofreaders, Mr. Teall made valuable contributions to the settlement of many problems of Printing Style. Mr. Westcott has been in general charge of styling the manuscript, has prepared tentative definitions in Logging and Lumbering, and has reviewed some of the specialists' definitions in Botany and Forestry. Mr. Artin has proofread both manuscript and printer's proofs, and has also served on the pronunciation staff.

The Editorial Assistants have read for citations, have classified and annotated material for special and office editors, and have participated in much other editorial work. Miss Mag has been a valuable member of the pronunciation staff. Miss Youtz has assisted in entering the etymologies in the manuscript and has written many tentative etymologies. Miss Ervina Foss has been in charge of the checking of the cross references, and has been assisted by Mrs. Artin, Miss Jackson, Mrs. Pike, and Miss Simcovitz. Mr. Theodore P. Palmer has assisted in editing the Gazetteer.

Mrs. Lillie H. Morrow has been in charge of the alphabetizing. Miss Anita Tacy has been in charge of preparing the final manuscript for the printer. Miss Christine M. Mayher has been office secretary to the Managing Editor. Miss Euna C. Wilson, A.B., Mount Holyoke College, has been office secretary to the General Editor, and has also done much of the work of an editorial assistant. Miss Helen Haskins, office secretary to Mr. Baker, has frequently given valuable service. The maintenance of a smooth and rapid flow of the complicated materials as they passed through all the editorial processes has been largely effected through the efforts of these members of the staff.

Special acknowledgment is due The Riverside Press, particularly the proofreading department and Mr. C. Howard Roberts, for their close co-operation with the editorial staff of the Dictionary.

The Special Editors are listed on the following pages.

SPECIAL EDITORS

THE 600 scientific, scholarly, technical, and other special subjects treated in WEBSTER'S NEW INTERNATIONAL DICTIONARY, SECOND EDITION were covered by the following 207 special editors, of whom 6 were also employed on other work in the Editorial office. The definitions in these special subjects were entirely rewritten, or otherwise checked, by the Special Editors.

- Accounting and Bookkeeping:** Edward N. Wright, B.S., A.M., Ph.D. Assistant Professor of Accounting, Wharton School of Finance and Commerce, Univ. of Pennsylvania.
- George A. MacFarland, B.S., A.M.** Associate Professor of Accounting, Wharton School of Finance and Commerce, Univ. of Pennsylvania. See also *Economics*.
- Advertising:** Franklin Robert Cawli, B.S., M.A., Ph.D. Director of Research, Merchandising, and Promotion, Philadelphia Public Ledger and Philadelphia Inquirer; formerly, Professor of Merchandising, Wharton School of Finance and Commerce, Univ. of Pennsylvania. Author of: *A Merchandising Manual*; etc.
- Aeronautics:** J. S. Ames (see *Physics*).
- Agriculture:** Howard Lawton Knight, B.S. Editor of the *Experiment Station Record*, U. S. Department of Agriculture; Contributor of articles to Department publications and various encyclopedias, yearbooks, etc. Under the general supervision of Mr. Knight the editorial work in Agriculture has been distributed as follows:
- Agricultural Botany:** Walter Harrison Evans, M.A., Ph.D. Botanical Editor of the *Experiment Station Record*, U. S. Department of Agriculture, 1893-1933.
- Agricultural Engineering and Machinery:** Robert William Trullinger, B.S., C.E., A.E. Senior Agricultural Engineer and Associate in Experiment Station Administration, Office of Experiment Stations, U. S. Department of Agriculture; Past President American Society of Agricultural Engineers; Member of Assembly of American Engineering Council. Contributor of articles to Department publications and to periodicals, and to the International Yearbook.
- Animal Husbandry:** Henry White Marston, B.S.A., M.S. Associate Animal Husbandman, U. S. Department of Agriculture. Editor of *Animal Husbandry, Dairying, and Dairy Farming* section, *Experiment Station Record*; Co-author of numerous *Kansas Station Circulars*.
- Economic Horticulture:** J. W. Wellington, B.S., M.S. Horticulturist, Office of Experiment Stations, U. S. Department of Agriculture. Horticulture Editor, *Experiment Station Record*; Contributor to *International Yearbook*.
- Field Crops:** Henry Mortimer Steece, B.S. (Agr.), A.M. Agronomist, Office of Experiment Stations, U. S. Department of Agriculture. Field Crops Specialist, *Experiment Station Record*.
- Soils and Fertilizers:** Walter Henry Beal, B.A., M.E. Associate in Experiment Station Administration, Office of Experiment Stations, U. S. Department of Agriculture.
- Alchimy:** W. C. Curry (see *Astronomy*).
- Algae, etc.:** O. E. Jennings and W. H. Emig (see *Botany*).
- American Indian names and terms:** Joseph Goy Green, A.B., A.M. Of the U. S. Department of State; formerly, Associate Professor of History, Princeton Univ.
- Anatomy:** Charles Francis De Garis, M.D., A.B., A.M., Ph.D. Associate in Anatomy, Johns Hopkins Medical School. Member editorial staff of *Biological Abstracts*; published work on *Gonads, Human Arterial Variations, Aborta in Primates, Anomalies, Tissue Culture*.
- Anglican Church:** R. D. Richardson, M.A., B.Litt. Vicar of Four Oaks, Warwickshire; Examining Chaplain to the Bishop of Birmingham; External Lecturer in Theology to the Univ. of Birmingham; Select Preacher before the Univ. of Cambridge, 1934. Author of: *The Causes of the Present Conflict of Ideals in the Church of England*; *The Gospel of Modernism*.
- Angling:** Ray Schrenkelson. Associate Editor, *Field and Stream* (magazine).
- Harris W. Baker.** Of the G. & C. Merriam Company.
- Animal Husbandry:** H. W. Marston (see *Agriculture*).
- Anthropology:** Clark Wissler, A.B., A.M., LL.D., Ph.D. Curator in Chief, Department of Anthropology, American Museum of Natural History; Professor of Anthropology, Yale Univ. Author of: *The American Indian*; *Man and Culture*; *Social Anthropology*; etc.
- Archery:** Robert P. Elmer, B.S., M.D. Former champion archer of the United States. Author of: *Archery*; Coauthor of: *The Book of the Longbow and American Archery*; Editor of: *The Weekly of Archery*.
- Architecture:** Flishto Kimball, A.B., M.Arch., Ph.D., D.F.A. Director of the Pennsylvania Museum of Art. Author of: *A History of Architecture*; *American Architecture*; *Domestic Architecture of the American Colonies*; etc.
- Arctic terms:** Donald Baxter MacMillan, Lieutenant Commander, U.S.N.R.F.; A.B., A.M., Sc.D. Explorer, Lecturer, and Teacher. Author of: *Four Years in the White North*; *Ehah and Beyond*; *Kah-Da*; *How Peary Reached the Pole*; etc.
- Art:** George William Eggers. Professor and Head of the Department of Art, College of the City of New York; formerly, Director of the Art Institute of Chicago, Denver (Col.) Art Museum, and Worcester (Mass.) Art Museum. Coauthor of: *Teaching the Industrial Arts*.
- Astrology:** Walter Clyde Curry, B.A., M.A., Ph.D. Professor of English, Vanderbilt Univ. Author of: *Chaucer and the Medieval Sciences*; etc.
- Astronomy:** Frank Bowers Littell, Ph.B., A.M., Sc.D. Professor of Mathematics, retired, United States Navy; Head Astronomer, retired, United States Naval Observatory; Member of several U. S. eclipse expeditions.
- Astrophysics:** Heber Doust Curtis, A.B., A.M., Ph.D., Hon. Sc.D. Director of the (Astronomical) Observatory of the Univ. of Michigan; formerly, Director of the Allegheny Observatory, and Astronomer, Lick Observatory.
- Athletics:** J. H. McQuerry (see *Sports*).
- Australian terms:** Ernest Rudolph Holme, O.B.E., M.A. Professor of English Language, Univ. of Sydney. Mr. Holme had as consultants: J. E. Gay Brunton, B.A. Late Professor of English Literature, Univ. of Sydney, author, and authority on Australian wayfaring life. H. M. Green, B.A., LL.B. Librarian, Univ. of Sydney. Author of the standard *Outline of Australian Literature*.
- Automotive Engineering:** C. B. Veal, B.S.M.E. Research Manager, Society of Automotive Engineers; formerly, Professor and Head of the Department of Machine Design, Purdue Univ.
- Aviation:** J. S. Ames (see *Physics*).
- Bacteriology:** Victor Burke, A.B., Ph.D. Professor of Bacteriology, Washington State College; Member of the Committee on Bacteriological Technique.
- Banking:** Luther Harr, B.S., A.M., Ph.D. Professor of Finance, Wharton School of Finance and Commerce, Univ. of Pennsylvania. Author of: *Branch Banking in England*; Coauthor of: *Banking Theory and Practices*.
- Baseball, Basketball:** See *Sports*.
- Billiards:** Willie P. Hoppe. Former United States and International Billiard Champion. Author of: *Thirty Years of Billiards*.
- Biochemistry:** P. E. Howe (see *Chemistry*).
- Biology:** J. A. Dawson (see *Zoology*) and Norman Taylor (see *Botany*).
- Birds:** G. M. Allen (see *Zoology*).
- Bookbinding:** E. W. Palmer. President, Kingsport Press, Inc., Kingsport, Tennessee. Author of: *Glossary of Technical Terms used in Printing and Binding Trades*; A course in Bookbinding for Vocational Training; etc.
- Bookkeeping:** See *Accounting*.
- Botany:** Norman Taylor. Formerly, Curator, Brooklyn Botanic Garden; Assistant Curator, New York Botanical Garden. Editor of: *The Garden Dictionary*, and formerly of *Terraviva* and *The Journal of the International Garden Club*; Author of: *Guide to the Wild Flowers*; *The Science of Plant Life*; etc. Under the general supervision of Mr. Taylor the editorial work in Botany was distributed as follows:
- General Botany and Ornamental Horticulture:** N. Taylor (see above).
- Algae, Liverworts, and Mosses:** Otto Emery Jennings, B.Sc., Ph.D., Sc.D. Head of the Department of Botany and Director of Lake Laboratory, Univ. of Pittsburgh; Curator of Botany and Director of Education, Carnegie Museum. Editor of: *Bryologist*; Author of: *Manual of Mosses of Western Pennsylvania*. Dr. Jennings was assisted by: W. H. Emig, A.B., Ph.D. Associate Professor of Botany, Univ. of Pittsburgh,
- Forestry:** Raphael Zon, B.A., B.S., F.E. Director, Lake Forest Experiment Station; Professor of Forestry, Univ. of Minnesota and Wisconsin; formerly, Editor in Chief, *Journal of Forestry*.
- Fungi, Lichens, and Plant Pathology:** Frederick de Forest Head, B.S., M.S., Ph.D. Professor of Plant Pathology, Washington State College. Author of: *Manual of Plant Diseases*.
- Grasses:** Albert Spear Hitchcock, B.Sc., M.S., D.S. Principal Botanist in Charge of Systematic Agronomy, U. S. Bureau of Plant Industry.
- Paleobotany:** C. Arthur Hollick, Ph.B., Ph.D. (deceased). Late Paleobotanist of the New York Botanical Garden; Senior Geologist of the U. S. Geological Survey.
- Plant Anatomy and Histology:** R. H. Wetmore, B.Sc., A.M., Ph.D. Associate Professor of Botany, Harvard Univ.
- Brewing:** Julian Levett Baker, F.I.C. Vice-President of the Society of Chemical Industry and of the Institute of Brewing. Editor of: *The Journal of the Institute of Brewing*; Author of: *The Brewing Industry*.
- British Universities:** William Allan Neilson (see *Scottish terms*).
- Brushes:** George A. Fernel, B.S. in Econ. Secretary, American Brush Manufacturers' Association.
- Card Games and Gambling:** Robert Frederick Foster. Formerly, Card Editor, *The New York Sun*; Author of many books on card games and indoor games and master of Hoyle.
- Cartographic terms (in part):** James William McGuire, S.T.D. Cartographic Engineer, U. S. Coast and Geodetic Survey; Chief Cartographer and Technical Adviser of Confidential Commission Advisory to the President of the United States During the World War; Member of U. S. Geographic Board. Author of: *Geographic Dictionary of the Virgin Islands*; etc. See also *Physical Geography*.
- Catholic Church:** Patrick Joseph Healy, S.T.B., S.T.L., S.T.D. Professor of Church History, Catholic Univ. of America. Author of: *The Valerian Persecution*; *Historical Christianity and the Social Question*.
- Celtic:** Joseph Dunn, A.B., Ph.D. Professor of Celtic Languages and Literatures, Catholic Univ. of America. Author of: *A Grammar of the Portuguese Language*; Translator of: *The Ancient Irish Epic Tale of Tain Buavaing*; etc.
- Ceramics:** Charles Fergus Binns, D.Sc. Director Emeritus of the New York State College of Ceramics; Past President of the American Ceramic Society; formerly connected with The Royal Porcelain Works, Worcester, England. Author of: *The Story of the Potter*; *The Potter's Craft*; and many technical papers.
- Chemistry:** Austin McDowell Patterson, A.B., Ph.D. Vice-President and Professor of Chemistry and Chairman of the Department, Antioch College; formerly, Editor of *Chemical Abstracts*. Author of: *A German English Dictionary for Chemists*; *A French English Dictionary for Chemists*; etc. Dr. Patterson was assisted by: Janet Downing Scott, A.B., S.M. Member of the Editorial Staff of *Chemical Abstracts*, Ohio State Univ. Under the general supervision of Dr. Patterson some of the editorial work in Chemistry was distributed as follows:
- Biochemistry:** Paul Edward Howe, B.S., Ph.D. Senior Biological Chemist, in Charge of Nutrition Investigations, Bureau of Animal Industry, U. S. Department of Agriculture; Asst. Editor, *Chemical Abstracts*. Coauthor of: *Nutrition and Clinical Dietetics*.
- Industrial Chemistry:** Walter Lucius Badger, B.A., B.S., Ph.D. Professor of Chemical Engineering, Univ. of Michigan. Author of: *Elements of Chemical Engineering*; etc.
- Physical Chemistry:** George Lindenberg Clark, B.A., M.S., Ph.D., F.A.C.S., F.R.S.A., F.A.P.S. Professor of Chemistry, Univ. of Illinois; Grasselli Medalist, 1932. Author of: *Applied X-Rays*.
- Chess:** Percy Waldron Long.
- Chinese terms:** Kenneth Scott Latourette, B.S., D.D., B.A., M.A., Ph.D. Professor of Missions and Oriental History, Yale Univ.; formerly, Member of Faculty of Yale in China. Author of: *Development of China*; etc.

Dr. Latourette was assisted by:

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Christian Science: Definitions of the terms in Christian Science were prepared by **Clifford P. Smith**, of the Committee on Publication of the First Church of Christ, Scientist, Boston, Massachusetts, under the authorization of The Christian Science Board of Directors and the Trustees under the will of Mary Baker Eddy.

Civil Engineering: **Milo Smith Ketchum, B.S., C.E., Sc.D.**
Dean of the College of Engineering and Director of the Engineering Experiment Station, Research Professor of Civil Engineering, Univ. of Illinois.

Author of: *Structural Engineers' Handbook; Design of Highway Bridges of Steel, Timber, and Concrete; Design of Steel Mill Buildings; Design of Metal Structures*, etc.; Coauthor of: *Surveying Manual*.

Classical Antiquities, etc.: **Sidney Norton Deane, Ph.D.**
Professor of Greek and Curator of the Museum of Classical Antiquities, Smith College.

Clothing: **E. S. Davis** (see *Home Economics*).

Color terms: **Isaac Hahn Godlove, B.S., A.M., Ph.D.**
Consultant, Color Service Laboratories, Washington, D. C.; Chairman on Measurement and Specification, Inter-Society Color Council; Member Colorimetry Committee, Optical Society of America; formerly, Research Director, Munsell Color Co., Baltimore; Associate Professor of Chemistry, Univ. of Oklahoma.

Commerce and Finance: **Emory Richard Johnson, B.L., M.L., Ph.D., Sc.D.**
Professor of Trade, Finance and Commerce; Dean of the Wharton School of Finance and Commerce, Univ. of Pennsylvania, 1919-1933; formerly, Member U. S. Isthmian Canal Commission; Special Commissioner on Panama Canal Traffic and Rates; Expert on Valuation of Railway Property for U. S. Census Bureau; etc. Author of: *Panama Canal Traffic and Tolls; Ocean and Land Water Transportation*, etc.

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Author of: *Commodity Marketing; The Marketing Institution*, etc.

F. Cyril James, B. Comm., M.A., Ph.D.
Assistant Professor of Finance, Wharton School of Finance and Commerce, Univ. of Pennsylvania.

Author of: *The Economics of Money, Credit, and Banking; England Today; The Road to Revival*. See also: *Accounting, Banking, Economics, Transportation*, etc.

Confectionery: **Walter C. Hughes**.
General Counsel and Trade-Mark Counsel for the National Confectioners' Association of the United States.

Cookery: See *Home Economics*.

Cranio-metry and Craniology: **C. Wissler** (see *Anthropology*).

Cricket: **H. Downing Jacobs**, assisted by **Hubert H. Roe**.

Dances and Dancing: **Doris Humphrey**.
American dancer, dance teacher, choreographer, and authority on dancing.
Author of numerous articles on the dance in periodicals, etc.

Dentistry: **Charles Root Turner, A.B., D.D.S., M.D., Sc.D.**
Professor of Prosthetic Dentistry and Dean of The Thomas W. Evans Museum and Dental Institute, School of Dentistry, Univ. of Pennsylvania.
Author of: *American Textbook of Prosthetic Dentistry*.

Dogs: **Arthur Frederick Jones, Jr.**
Assistant Editor, *American Kennel Gazette*.
American Correspondent, *The Dog World* (England).

Drama: **George Pierce Baker, A.B., A.M., Litt.D., L.H.D., LL.D.**
Professor Emeritus of the History and Technique of the Drama and Director of the University Theatre, Yale Univ.; formerly, Professor of English and Director of the 47 Workshop, Harvard Univ.
Author of: *The Development of Shakespeare as a Dramatist; Dramatic Technique*, etc.

Eastern Church: **Franz Joseph Gölz, A.B., A.M., Ph.D.**
Professor of Sacred Scripture, Instructor in Semitic Philology, and Dean of the School of The Sacred Sciences, Catholic Univ. of America; formerly, Editor of *The Oriens Christianus*; Privatdozent in Semitic Philology, Bonn Univ.

Author of: *Bibel und Babel, Der Nomakanon Michaels von Malig*, etc.

Echinoderms: **H. L. Clark** (see *Zoology*).

Economics, Railroad Accounting, etc.: **Arthur Twining Hadley, A.B., LL.D., Ph.D.**
Late President Emeritus and former Professor of Political Economy, Harvard Univ.
Author of: *Railroad Transportation, Its History and Laws; Economic Problems of Dev.*, etc.

Education: **Charles Hubbard Judé, A.M., Ph.D., LL.D.**
Head of the Department of Education, Univ. of Chicago; Past President of the American Psychological Association; Past Chairman of the American Council on Education; Member Social Science Research Council.

Author of: *Genetic Psychology for Teachers; Psychology of Secondary Education; Psychology of Social Institutions*, etc.

Egyptology: **Samuel Alfred Browne Mercer, B.D., D.D., LL.D., B.A., M.A., Ph.D., F.R.G.S.**
Professor of Semitic Languages and Egyptology, Trinity College, Toronto.
Editor of: *Egyptian Religion*; Author of: *Egyptian Grammar, Tutankhamen and Egyptology; Growth of Religious and Moral Ideas in Egypt; Etudes sur l'Origine de la Religion de l'Egypte*, etc.

Electrical Engineering: **William Bennett Kouwenhoven, E.E., M.E., Dipl. Eng., Dr. Ing.**
Past President of Electrical Engineering and Assistant Dean of School of Engineering, Johns Hopkins Univ.; Consulting Engineer, National Bureau of Mines and National Bureau of Standards.

Engineering: See *Civil, Electrical, Mechanical*, etc., *Engineering*.

Etymology: **Harold H. Bender, Ph.D., Litt.D., Phil.D.**
Professor of Indo-Germanic Philology and Chairman of the Department of Oriental Languages and Literatures, Princeton Univ.

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Dr. Bender was assisted by the following:

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In the tracing of loan words to their sources:

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Arabic and other Semitic languages: **Philip K. Hitti, B.A., Ph.D.**
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Bantu and other African languages: **Allice Werner, C.B.E., LL.T., F.R.A.I.**
Emeritus Professor of Swahili and the Bantu Languages, Univ. of London.

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Chief Division of Orientalia, Library of Congress, Washington, D. C.

Translator of: *The Autobiography of a Chinese Historian*.

Classical and Latin: **Shirley H. Weber, A.B., A.M., Ph.D.**
Associate Professor of Classics, Princeton Univ.

Hamitic languages: **Henry Snyder Gehman, A.B., A.M., Ph.D., S.T.B., S.T.D.**
Acting Professor of Old Testament, Princeton Theological Seminary.

Indo-Aryan, Dravidian, Tibeto-Burman, and Austro-Asiatic languages: **Edwin H. Tuttle, A.B. of Cheshire, Conn.**

Spanish and other Romance languages: **F. Courtney Tarr, A.M., Ph.D.**
Associate Professor of Spanish, Princeton Univ.

Tagalog and other languages of the Philippine Islands: **Frank R. Blake, A.B., Ph.D.**
Associate Professor of Oriental Languages, Johns Hopkins Univ.

Author of: *A Grammar of the Tagalog Language; Turkish and allied languages; Walter Livingston Wright, Jr., A.M., Ph.D.*

Assistant Professor of History, Princeton Univ.
Author of: *Oldman Siderals*.

Ural-Altaic languages: **George C. Miles, A.M.**
Of Oberl College, Constantinople; formerly of the Graduate School, Princeton Univ.

Fancy Dining: **John P. Bethel**.

Finance: **F. C. James** (see *Commerce and Finance*).

Fire Protection, Fire Apparatus: **Robert S. Moulton, B.S.**
Technical Secretary, National Fire Protection Association; Editor, *Quarterly Magazine*, National Fire Protection Association.

Fishes: **E. W. Gudger, W. P. Hay** (see *Zoology*).

Footballs: See *Home Economics*.

Foods: See *Home Economics*.

Forestry: **R. Zon** (see *Botany*).

Freemasonry: **C. T. Converse, Longmeadow, Mass.**

Fungi, etc.: **P. de F. Heald** (see *Botany*).

Furniture: **Wallace Nutting, D.D.**
Antiquarian, Lecturer, and Author.

Author of: *The Furniture of the Nineteenth Century; Furniture Treasury* (3 vols.); *The States Beautiful*, etc.

Furs and Fur-Bearing Animals: **Rudolph Martin Anderson, Ph.B., Ph.D.**
F. G. S. Division of Biology, National Museum of Canada, Ottawa; Naturalist with American and Canadian Arctic Expeditions; in charge of many Canadian zoological expeditions.

Author of: *Methods of Collecting and Preserving Vertebrate Animals*, etc.

Dr. Anderson was assisted by:
F. D. Burkholder.

Pres. E. D. Burkholder, Ltd., Furriers, Ottawa; First President of the Furriers' Guild of Canada; Chairman of the International Convention of the Retail Manufacturing Furriers of America and the Furriers' Guild of Canada (1933).

Gambling: See *Card Games*.

Gems and Jewels: **George Frederick Kunz, A.M., Ph.D., Sc.D.**
Late Vice-President and Gem Expert, Tiffany and Company, New York; Research Curator of Precious Stones, American Museum of Natural History; Founder and Honorary President, Museum of the Precious Arts (now Museum of Science and Industry, New York City).

Author of: *Gems and Precious Stones of North America; The Curious Lore of Precious Stones; Magic of Jewels; The Ring*, etc.

Geography: See *Physical Geography*.

Geology: **Frederick Leslie Ransome, B.S., Ph.D.**
Professor of Economic Geology, California Institute of Technology; Member National Academy of Sciences; Associate Editor, *Economic Geology*; formerly, Geologist of the U. S. Geological Survey.

Author of numerous official monographs on the geology of western mining districts.

Glass and Glass Manufacture: **Ellsworth Ben Gore**.
Chief of Glass Research and Statistics, Corning Glass Works, Corning, New York (in consultation with eight scientists and technicians of the same company).

Golf: **Innis Brown, B.A.**

Managing Editor, *American Golfer*; formerly, Secretary to the Rules of Golf Committee of the U. S. Golf Association.
Author of: *Ready References to the Rules of Golf*; Co-author of: *A Guide to Good Golf*.

Grammar: **Alfred Dwight Sheffield, A.B., A.M.**
Associate Professor of English, Wellesley College.

Author of: *Grammar and Thinking; Command of Sentence Patterns*.

Grasses: **A. S. Hitchcock** (see *Botany*).

Greek Antiquities, etc.: See *Classical Antiquities*.

Hatting: **J. L. O'Brien**.
General Manager, The Croft & Knapp Company, Hat-makers, South Norwalk, Conn.

Heraldry: **Oswald Barron, F.S.A.**
Editor of sections relating to Genealogy and Armory in the Victoria County History Series.

Author of articles on Heraldry, etc., in the *Encyclopaedia Britannica*.

History and Government: **Everett Kimball, A.B., A.M., Ph.D.**
Professor of Government, Smith College.

Author of: *The National Government of the United States; State and Municipal Government in the United States; United States Government*, etc.; Coauthor of: *A Reference History of the World*.

Home Economics: **Alice P. Blood, B.S., Ph.D.**
Professor of Dietetics and Director of the School of Household Economics, Simmons College; Editor, *Riverside Home Economics Series*; Past President, American Home Economics Association.

Foods, Cookery, Dietetics, etc.: **Dr. Blood**, assisted by Miss Ula M. Dow (see below).

Clothing, Sewing, Laces, etc.: **Eleanor S. Davis, A.B., S.B.**
Instructor in Clothing, Simmons College.

Tea, Coffee, Spices: **Ula M. Dow, S.B., M.**
Professor of Household Economics, Simmons College. Coauthor of: *Good Cooking*.

Horology: **Paul Moore**.
Executive Secretary, Horological Institute of America; formerly, Editor in Chief and, later, Director of the Division of Information, War Trade Board; Secretary of the Research Extension Division and Associate in the Research Information Service, National Research Council.

Horticulture: See *Agriculture, Botany*.

Hunting and Field Sports: **Raymond Prunty Holland**.
Vice-President, American Game Protective Association; Secretary and Treasurer, International Association of Game, Fish, and Conservation Commissioners.

Editor of: *Field and Stream*; Author of: *My Gun Dogs*.

Immunology: **E. R. Long** (see *Medicine*).

India: **Ananda Kentish Koomararawamy, D.Sc.**
Fellow for Research in Indian, Persian, and Mohammedan Art, Boston Museum of Fine Arts.

Author of: *Rajput Painting; Buddha and the Gospel of Buddhism; The Dance of Siva; History of Indian and Indonesian Art; The Transformation of Nature in Art*, etc.

Industrial Chemistry: **W. L. Badger** (see *Chemistry*).

Insects: **C. T. Brues** (see *Zoology*).

Insurance: **Solomon S. Huebner, B.L., M.L., Ph.D., Sc.D.**
Professor of Insurance and Commerce, Wharton School of Finance and Commerce, Univ. of Pennsylvania; Dean and Director, American College of Life Underwriters.

Author of: *Marine Insurance; Property Insurance; Life Insurance*, etc.

Dr. Huebner was assisted by:
David McCallahan, B.S. in Econ., M.A., Ph.D. (C.L.U.)
Assistant Professor of Insurance, Wharton School of Finance and Commerce, Univ. of Pennsylvania; Assistant Dean, American College of Life Underwriters.

Author of: *State Insurance*, and of numerous technical articles; Coauthor of: *Life Insurance as Investment*.

Japanese terms: **K. Asakawa, B.Litt., Litt.D., Ph.D.**
Research Associate in History, Yale Univ.
Author of: *The Early Institutional Life of Japan; The Documents of Iriki*, etc.

Jewelry: **F. J. Kunz** (see *Gems*).

Jewish Antiquities, Yiddish, etc.: **Ralph Marcus, B.A., M.A., Ph.D.**
Assistant Professor of Bible and Hellenistic Judaism, Jewish Institute of Religion, New York City; Lecturer in Semitic Languages, Columbia Univ.

Labor: **R. H. Lansburgh, B.S. in Econ., M.A.**
Industrial Advisor, First National Bank, Detroit, Michigan; formerly, Professor of Industry, Wharton School of Finance and Commerce, Univ. of Pennsylvania.

Land Transportation: **G. G. Huebner** (see *Transportation*).

Languages: **Harold H. Bender** (see *Philology and Linguistics; Etymology*).

Law: **Roscoe Pound, A.B., A.M., Ph.D., LL.M., LL.D.**
Dean of the Law School, Harvard Univ.; formerly, Commissioner of Appeals of the Supreme Court of Nebraska.

Author of: *The Spirit of the Common Law; Introduction to the Philosophy of Law; Interpretations of Legal History; Law and Morals; Criminal Justice in America*.

Library terms: **Hiller Crowell Wellman, A.B.**
Librarian, City Library Association, Springfield, Massachusetts; Past President, American Library Association.

Linguistics: **Harold H. Bender** (see *Philology and Linguistics; Etymology*).

Locks and Locksmithing: **Charles Abel Berry**.
Of the Yale and Towne Manufacturing Company, Stamford, Conn.

Logic: **O. I. Lewis** (see *Philosophy*).

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