wider scope which I have thought for some years was in need of elaboration. The rendering of words from a language in which the Latin alphabet is not used into English, has become a source of great confusion. Too often a rendering into French or German is simply transliterated into English, and the values of the letters are then different from the common English sounds; so that without a key the reader is at loss. I do not know what languages our English spellings of Chinese words were transliterated from; but certainly without a key to tell one that, for example, *Chiang* is pronounced approximately *Jang,* and that *Tao* is sounded *Dow,* one would be misled. An entertaining example is the literal taking over of the French spelling of the Arabic word for mountain: *Djebel.* Of course the *D* is essential in French but redundant in English, since the English *J* has the sound which can be written in French only by *Dj.* This has made some radio commentators comic. The appalling confusion in English renderings of Sanscrit words is well known to Sanscrit scholars.

Our English spellings of Russian words appear to be transliterations of German renderings, and these transliterations are often absurd. In "Pawlow," the *w,* as Dr. Hrdlička points out, does not indicate the usual sound of the letter in English: and this spelling has misled many students. Since we do not use the Russian alphabet, and the Russian letter which Dr. Hrdlička calls "v" is not the English *v* why not be sensible and write *Pavloff?* After all, English is a language in its own right.

Knight Dunlap

University of California,
Los Angeles

SCIENTIFIC BOOKS

THE SCIENCE OF WORDS

Webster's Dictionary of Synonyms. 1st edition. A Dictionary of Discriminated Synonyms, with Antonyms and Analogous and Contrasted Words. xxxiv + 907 pp. Springfield, Mass.: G. and C. Merriam Co. 1942. $3.50 ($4.00 with thumb index).

There are a great many obstacles to precision in writing. Many writers, for example, seem to have personal prejudices against certain words and irrational predilections for others—attitudes passed on to them perhaps by some pedantic schoolmaster or half-cocked editor. Others have a leaning toward polysyllables, clothing their ponderous brain children with even more ponderous diction, until their sentences drag along like dull overladen beasts of burden. Still others boast that they never use a "big" word if they can find a "little" one, ascribing some specious virtue to the monosyllabic word *per se.* There are some, too, who in their writing adhere so literally to Pope's well-meaning but dangerous injunction—

> Be not the first by whom the new are tried,
> Nor yet the last to lay the old aside.

—that their vocabulary reminds one of a crowded room with all the windows shut and barred. Precision is attained, once wrote Ambrose Bierce, "by choice of the word that accurately expresses what the writer has in mind, and by exclusion of that which either denotes or connotes something else. As Quintilian puts it, the writer should so write that his reader not only may, but must, understand." To achieve that, the writer must make use of the English language in all its motley, big words and little, new and old.

That is why, I believe, it would be a fine thing if this new Dictionary of Synonyms were available to every scientist in the land, for sooner or later scientists become writers, and whether they know it or not they must be students of semantics. Any work of scholarship that helps them in their quest for exactitude, whether in the science process itself or in the communication of knowledge, becomes indispensable.

The book itself is an entirely new work, written chiefly by Miss Rose F. Egan, assistant editor on the permanent staff of the G. and C. Merriam Company. Mr. Hubert P. Kelsey wrote many of the articles on scientific terms. Articles dealing with law, chemistry and medicine were reviewed, respectively, by Dr. Roscoe Pound, of Harvard University; Dr. Austin M. Patterson, of Antioch College; and Dr. Esmond R. Long, director of the Henry Phipps Institute.

A brief account of the plan of the book will here suffice. Four categories of words are distinguished, as follows:

(1) Synonyms. A synonym is defined as "one of two or more words in the English language which have the same or very nearly the same *essential* meaning"; it is assumed, of course, that an absolute synonym rarely if ever occurs. Furthermore, not all the words discriminated are synonyms. "A few articles discuss a group of words that are sometimes wrongly taken as synonyms because they are confused or their actual meanings are misunderstood or because they once had one or more meanings which made them synonymous."

(2) Antonyms. An antonym is defined as "a word so opposed in meaning to another word, its equal in breadth or range of application, that it negates or nullifies every single one of its impressions."

(3) Analogous words.

(4) Contrasted words.

Thus, under the word *malign,* although the words *malign, traduce, asperse, vilify, calumniate, defame,*

slander and *libel* are considered synonymous, a whole column is devoted to explaining and illustrating the distinctions between them. Analogous words in this case are: *detract from, decry, disparage, depreciate, derogate from, vituperate, revile, defile, pollute.* The antonym is *defend.* Contrasted words: *vindicate, justify, maintain, extol, eulogize, praise.* Some of these words are cross-referenced to other articles where further information is presented.

The Dictionary is well up-to-date. Under the article on the word *drunk,* for example, one finds this comment: "There are many slang terms that imply intoxication: most of them, such as *spiflicated* (or *spifflicated*), *soused, lit,* and *blotto,* are strong in their implications, suggesting loss of powers of locomotion, recognition, speech, and the like."

An indication of the careful and scholarly way in which the various words are distinguished is the wealth of illustrative citations from English and American literature, ancient and modern. Under the word *malign* again, no less than eleven quotations are included to illustrate differentiations in meanings of the synonyms, the authors ranging from classical English writers—Shakespeare, Burke, Scott, Meredith, Tennyson—to such contemporary writers as John Buchan and Van Wyck Brooks. An impressive list of all the authors quoted (at least 1,000, with full names and dates) is appended. Another feature of the Dictionary is the introductory "Survey of the History of English Synonymy," an informative and fundamental chapter for any one interested in the science of words or who wants to know how this dictionary differs from its predecessors. Typographically, the book has been punctiliously put together, the result being an unusually clear and readable page. The main text is printed in 7-point monotype Binney on an 8-point body, double column.

Although precision may be the chief objective for any writer who treats of philosophical subjects, the scientist who tirelessly expands his vocabulary and becomes increasingly sensitive to the subtleties of language will find that perspicuity is not the only reward. He will find himself developing also a richness of style to enhance his expression. He will find that where he used to repeat the same word two or three times in a single sentence, there will spring to his mind half a dozen others to choose from. He will discover himself spending quarter-hours at a time searching for the right word. And when he has finished his sentence, his chapter, his book, he may truly realize what is meant by the old apothegm, "Easy reading, hard writing."

Besides which, for every writer, whether he be scientist, historian, novelist or poet, there is a peculiar artistic satisfaction in having said (if indeed he ever does) exactly what he set out to say. Every writer worth his salt has fallen in love with words, and he woos them ardently. This new Dictionary of Synonyms, whose publication seems to me a real event, should help to "marry off" many an elusive word to "her" new master.

PAUL H. OEHSER
U. S. NATIONAL MUSEUM

AUTONOMIC REGULATIONS

Autonomic Regulations. Their Significance for Physiology, Psychology and Neuropsychiatry. By ERNST GELLHORN. New York: Interscience Publishers, Inc. 373 pp. 80 figs. 1942.

INTERRELATIONS of organ systems is attracting the attention of physiologists more and more as the knowledge of the nervous and endocrine systems increases. The study of the organism as a whole is the ultimate goal.

In the present work, "those organs which are influenced by the autonomic system and affect it in turn are subjected to a physiological analysis. Consequently, the relationship between hormones and the autonomic nervous system is investigated." The mutual relation between the autonomic and somatic nervous systems is discussed. It is shown that the autonomic system is afferent as well as efferent, influencing the excitability of the somatic system. An analysis of emergency conditions indicates that the vago-insulin system, as well as the sympathetic-adrenal system, is involved.

This book evolved as a result of lectures and research during the past nine years. The great amount accomplished by Gellhorn and his associates is indicated by the fact that three fourths of the figures are from his laboratory. However, the large number of references (1,100) shows that he has drawn freely on the work of other investigators.

Approximately the first third of the book is devoted to adjustment reactions involving primarily the respiratory and circulatory systems in response to carbon dioxide, anoxia, asphyxia, hemorrhage and hypoglycemia with a chapter on the regulation of cerebral circulation.

This is followed by discussions of the nervous regulation of the hypophysis and the role of the sympathetico-adrenal and vago-insulin systems.

The next part deals with autonomic-somatic integration. The role of the sympathetic and parasympathetic systems in anoxia, hypoglycemia and hemorrhage is covered in one chapter, while a second chapter deals with the differences in the reaction of the autonomic and somatic nervous systems and a third is