research work in the coming year at eleven of these institutions. As a result of war conditions, the fields of science in which the scholarship holders will work are reduced in number as compared with a few years ago. By far the greatest number will work in various branches of chemistry related to the war effort. Smaller numbers will work in physics, engineering and other subjects largely connected with war research.

DISCUSSION

DESTRUCTION OF RED BLOOD CELLS AFTER FAT INGESTION

JOHNSON and Freeman[1] have shown that the thoracic duct lymph of dogs fed fat is markedly hemolytic. Fatty acids and soaps, which have presumably escaped resynthesis into neutral fat during absorption, are present in duct lymph in quantities sufficient to account for the hemolysis observed.[2]

Although this lymph empties but slowly into the blood stream, after a fat meal the circulating red blood cells become exposed to a sufficient quantity of the hemolytic agent to cause an acceleration of the normal daily red blood cell destruction, so that in dogs[3] and in man[4] the daily excretion of the degradation products of hemoglobin is greater on a high fat diet than on a low fat diet.

More directly, Longini, Freeman and Johnson[5] have demonstrated in dog's lipemic blood the presence of an agent which increases the fragility of red blood cells.

It has now been possible to show that drinking one pint of 32 per cent. cream (150 cc of fat) causes human serum to become injurious to red blood cells, increasing their fragility. Details of this experiment will be published elsewhere.

Although the extra blood destruction resulting from fat ingestion seems to be insufficient to produce anemia in normal individuals, whose bone marrow is capable of replacing these extra cell losses, it remains to be determined: (1) whether regeneration of red cells after blood loss, when the bone marrow is excessively taxed, might be hastened by a low fat diet, and retarded by a high fat diet, or (2) whether abnormalities in fat absorption or abnormal sensitivity of cells to the hemolytic agent described might contribute to the production of certain human anemias not associated with blood loss.

These possibilities are under investigation in this laboratory.

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GONADAL HORMONES IN SNAKES

ANDROGENIC and estrogenic content of the gonads of several vertebrates has been tested since the work of Allen and Doisy,[1] Martins and Rocha e Silva,[2] Moore, Gallagher and Koch.[3] Also the gonads of ovoviviparous snakes contain these substances. We have assayed an alcoholic extract from the testes and ovaries of 324 *Bothrops jararaca* and *Crotalus terrificus terrificus*. The residue of alcoholic distillation was extracted by ether, this evaporated and the oil matter so obtained mixed with arachnis oil.

Assays for androgens were made in spayed colchicine treated rats, according to the method first described by Martins[4] and in Leghorn white capons by the comb method. With a total dose of 10 mg of testicular tissue in 1 cc of arachnis oil, a positive effect was observed in both tests.

Assays for estrogens made by the Bülbring and Burn technic,[5] with estrone in parallel, gave a concentration of 2,000 estrone units per kg of fresh ovaries, a value in accord with that mentioned by Fraenkel and Martins.[6] Tests on capons for possible androgens in ovarian extract after estrogenic separation were negative.

As Porto,[7] also in this laboratory, found progestational substances in the corpora lutea of the same *Crotalidae,* we can say that gonads of those snakes contain the three kind of sexual hormones.

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NAMES, RUSSIAN AND OTHER

THE note by Dr. Hrdlička on "Russian Names" (in SCIENCE of March 12) raises a point in a problem of

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.

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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,*