TRANSLITERATION ONCE MORE

DR. DUNLAP makes an important point[1] when he calls attention to one source of confusion in the transliteration of words from languages not written in the Latin alphabet. The bad habit in question consists in taking over transliterations bodily from such languages as French or German even when these transliterations are no longer appropriate in English. For example, one might thus take over the French transliteration of the Arabic word for mountain, namely, *Djebel.* As Dr. Dunlap remarks, "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.*"

It is important to call attention, however, to one important exception to the rule that foreign transliterations should not be taken over into English. It is a principle adopted by the United States Geographic Board that when the Latin alphabet is "habitually or alternatively" used in a "country, dominion, colony, protectorate, or possession" local official usage should be followed except where there is a different conventional English form. Even in the latter case the better practise is to follow the local form. This makes for simplicity in international usage. It is confusing when Polish speakers write *Waszyngton* for *Washington* and on the same principle it is better for us to write *Djibouti* (French Somaliland) rather than *Jibuti,* although this involves precisely the peculiarity of transliteration to which Dr. Dunlap objects.

Again, Dr. Dunlap errs when he implies that a transliteration such as the Chinese *Tao* is due to slipshod borrowing from a system of transliteration conventional in some other language. *Tao* is a spelling which follows the standard Wade system of transliteration—or Romanization as it is generally called in this connection. Sir Thomas Francis Wade (1818–1895) was a British diplomat who spent many years in China and was afterwards professor of Chinese at Cambridge. His system of Romanization is followed by the vast majority of American and English Sinologists, and attempts to alter it are looked on with disfavor. There is good reason for this; for *Tao* is not "sounded *Dow*" as Dr. Dunlap says. The initial consonant is a devoiced *d,* therefore approximately half way between our English *d* and *t* except that it is unaspirated. The diphthong actually glides from a variety of *a*-sound to a variety of *o*-sound. To write *Dow* instead of *Tao* would not be an unquestionable improvement.

The moral of all this is simple. For every language written with a non-Roman alphabet there exists a system of transliteration which is accepted as more or less standard by specialists in the field, such as the Wade system for Chinese or the Hepburn system for Japanese. In addition, geographical names have special principles governing their use. The careful writer will take the trouble to familiarize himself with these systems or else consult experts to learn the correct usage in a particular case. A respect for scientific accuracy demands this if confusion is to be avoided.

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[1] SCIENCE, 97: 400–1, April 30, 1943.

SUGGESTED CHANGE IN DESIGNATION OF "RENIN-ACTIVATOR" (HYPERTENSINOGEN) TO RENIN-SUBSTRATE (α_2 GLOBULIN)

LELOIR, Muñoz, Taquini, Braun-Menendez and Fasciolo[1] have suggested that the term "renin-activator" should be dropped. In discarding it, we believe that the considerations which have influenced our using and retaining the word should be presented as well as those which now prompt us to propose a new term for the same entity.

When Kohlstaedt, Helmer and Page[2] found that renin was not a vasoconstrictor (or pressor) substance except in the presence of another protein present in blood, they identified this other protein as "renin-activator" for the simple reason that in its absence renin was not active. Without any further implication, this observation led to discovery of the pressor substance called "angiotonin" by the North American investigators, Page and Helmer,[3] and "hypertensine" by the workers of South America, Braun-Menendez, Fasciolo, Leloir and Muñoz.[4] In the course of studies on the formation of angiotonin (hypertensine) from the mixture of renin and "renin-activator," evidence was obtained both in this country[5] and in South America[6] which indicated that the interaction was enzymatic and that the so-called "activator" was in fact the substrate. The Argentine group then proposed the use of the terms "hypertensinogen" or "hypertensine precursor" for the substance until that time known as "renin-activator." These terms they developed from the fact that the substance in question gives rise to the pressor substance "hypertensine." However, as has been pointed out editorially in the

[1] L. F. Leloir, J. M. Muñoz, A. C. Taquini, E. Braun-Menendez and F. S. Fasciolo, *Rev. Argent. Cardiol.,* 9: 269, 1942.

[2] K. G. Kohlstaedt, O. M. Helmer and I. H. Page, *Proc. Soc. Exp. Biol. Med.,* 39: 214, 1938.

[3] I. H. Page and O. M. Helmer, *Proc. Cent. Soc. Clin. Res.,* 12: 17, 1939.

[4] E. Braun-Menendez, J. C. Fasciolo, L. F. Leloir and J. M. Muñoz, *Rev. Soc. Argent. Biol.,* 15, 420, 1939.

[5] I. H. Page and O. M. Helmer, *Jour. Exp. Med.,* 71: 29, 1940.

[6] E. Braun-Menendez, L. F. Leloir, J. M. Muñoz and J. C. Fasciolo, *Rev. Asoc. bioquim, Argent.,* 5: 17, 1940.

Journal of the American Medical Association,[7] the term "hypertensine" does not follow North American practice in that its selection evidently is intended to imply its causal relationship to hypertension, a relationship which has not been completely established. Further, the term "urohypertensine" has been used to denote a pressor substance in urine which in all probability had nothing to do with hypertension.

Meanwhile, we had retained the non-committal term "renin-activator" and used it without particular reference to its enzymatic rôle, since it was desired to avoid solidifying concepts and terminology in advance of full and complete evidence of the nature and function of this substance. Plentl and Page[8] have now by kinetic analysis established beyond a doubt the enzymatic nature of the interaction of renin with a protein substrate, the so-called "renin-activator," and Plentl, Page and Davis[9] have gone on to show that this substance is identical with or moves with the same electrophoretic mobility as α_2-globulin. Even with this background of evidence, the otherwise attractive term "hypertensinogen" should not be adopted since, as noted above, the term "hypertensine" is unsatisfactory. Further, the suffix "-ogen" in enzyme chemistry usually refers to a mother substance which, by a molecular rearrangement, gives rise to another substance, often itself an enzyme, *e.g.*, pepsinogen, trypsinogen, etc.

Since it now seems desirable to discard the term "renin-activator" and since the evidence is at hand to substantiate the implications of the terminology, we suggest that the purely descriptive word "renin-substrate" be applied to this substance and that, when it is considered useful to indicate its presence in, or identity with, the protein fraction α_2-globulin, this be added as postscript and the term written "renin-substrate (α_2-globulin)."

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SCIENTIFIC BOOKS

THREE MATHEMATICAL TEXT-BOOKS

Aircraft Mathematics. By S. A. WALLING and J. C. HILL. 189 pp. Cambridge: The University Press; New York: The Macmillan Company. 1942. $1.25.

Principles of College Algebra. By M. S. KNEBELMAN and T. Y. THOMAS. x + 380 pp. New York: Prentice-Hall, Inc. 1942. $2.50.

Differential Equations. By R. P. AGNEW. vii + 341 pp. New York: McGraw-Hill Book Company, Inc. 1942. $3.00.

THESE three books deal with essentially distinct domains of mathematical instruction, both as to the material included and the degree of mathematical knowledge presupposed. They have one important point in common, however. They aim at a genuine comprehension of the material covered rather than a mere training in the formal use of it. Having been written by highly competent teachers of mathematics, with a secure mastery of their subject, they are well adapted to the realization of this aim.

The first book covers material within the range of any properly trained first-year high-school student. In fact, since about a third of the book is devoted to arithmetic, some of the material should be review work for such a student. The other subjects treated may be classified as algebra, geometry and trigonometry, with numerical trigonometry and the use of logarithms in computation marking the upper limit of advancement. The book is frankly intended for the present emergency and selects such elements of mathematical theory and application as are essential for those entering on training for the Air Corps. However, the material is well integrated and arranged in order of logical development. The problems are well selected and pertinent to the aim of the book. Altogether, the authors have done an excellent job.

The second book is primarily suitable for a freshman or sophomore in college, though much of it would be valuable for a junior or senior student who had not previously received a good training in algebra. In view of the recent tendency to cut short the mathematical instruction in high school, and in college to get on as rapidly as possible to the elements of the calculus, there has been a neglect of the domain known generally as college algebra. On account of the importance of algebraic theory in many of the recent developments of theoretical physics, such a lacuna in mathematical training has become increasingly disadvantageous. The inclusion of a course dealing with the material of the book under review is thus seen as highly desirable in a proper scheme of mathematical education.

Professors Knebelman and Thomas have included all the classical topics of college algebra in their book and have given an unusually careful discussion of these. Other topics, not so generally treated, such as

[7] Editorial, *Jour. Am. Med. Asn.*, 120: 923–924, November 21, 1942.

[8] A. A. Plentl and I. H. Page, *Jour. Biol. Chem.*, 147: 135, 1943.

[9] A. A. Plentl, I. H. Page and W. W. Davis, *Jour. Biol. Chem.*, 147: 143, 1943.