TEMPERATURE TOLERANCE OF MALE GERM-PLASM

As a physicist with only an elementary knowledge of biology, my remarks on R. B. Cowles's article on "Temperature Induced Sterility" in the March 2 issue of SCIENCE may be a bit naive. It seems to me, however, that the exposed location of the testes in an environment generally lower than body temperature is a natural cause of the lack of tolerance of male germ-plasm for high temperatures. It might be considered significant that the ovaries do not have an exposed location and do not have a low temperature tolerance. The causal chain would seem to be (1) exposed location of the testes to facilitate the reproductive act; (2) low temperature tolerance of male germ-plasm resulting from exposed location, rather than, as Cowles implies, (1) low temperature tolerance of male germ-plasm, and (2) location of plasm in a region kept below normal body heat.

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TRANSLITERATION OF RUSSIAN

I HAVE been reading with a great deal of interest the discussion on the transliteration of Kyrillic for English-speaking people. I think the growing importance of Russian technical literature makes finding a good solution to this problem imperative.

A satisfactory transliteration should fulfil the three following requirements: (1) When pronounced as an English word, reproduce fairly closely the sound of the Russian word; (2) should not require unusual (out-of-font) characters; (3) should allow unique reconstruction of the word in Kyrillic characters, so that it might be looked up in a Russian-English dictionary.

The *Chemical Abstracts* transliteration meets the first two requirements very well; I believe that the following simple modifications which are also in accord with the first two requirements given above, would enable it to meet the third requirement.

The modifications suggested are these:

(1) The soft sign should be represented by an apostrophe both in the middle and at the end of a word. If it is omitted at the end of a word, one will look for the word in the wrong place in the dictionary.

(2) The hard sign is not used much any more—never at the end of a word. To distinguish it from the soft sign, it could be represented by two apostrophes (''). Thus the verb "to explain" would be written ob''yasnyat'.

(3) E should be translated "ye." The character ë should be added to the list of Kyrillic characters, to be transliterated "yo." (All accented "e's" should not be transliterated "yo"—as this would cause too much confusion in reconstructing the Kyrillic word. Only e's specifically marked ë in the Russian text should be so treated.)

(4) In order to render the reconstruction of the Kyrillic word unique, the transliteration of bI as "y" could not be retained. Perhaps ü would be as good as any—and certainly as much in accord with requirement (1) as "y" is at present.

It is freely admitted that defects remain in this system, such as that of treating the genitive singular ending of adjectives and pronouns. However, I believe that the system I propose would enable any one moderately familiar with Russian to construct correctly the original Kyrillic work from its transliterated equivalent, thus meeting requirement (3). Of course, this entire argument applies only to the new orthography, for which I believe the modified transliteration permits close observance of my third requirement, without disturbing significantly the advantages of the *Chemical Abstracts* system in regard to the first two requirements.[1]

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SCIENTIFIC BOOKS

AGRICULTURAL CHEMISTRY

A Source Book of Agricultural Chemistry. By CHARLES A. BROWNE. x + 290 pp. 32 figures. Waltham, Mass.: Chronica Botanica Company. 1944. $5.00.

DR. BROWNE'S "Source Book of Agricultural Chemistry" has a far broader appeal than is implied in its title; it is a thoroughly scholarly document in the history of chemistry. Agricultural chemistry is understood by the author to mean the applied science that deals with "the chemical composition and mutual chemical relations of soils, fertilizers, crops, and farm animals in so far as they concern the production upon the farm of agricultural supplies." Accordingly, not only is the fundamental chemistry of the elements and their compounds involved but also many aspects of biochemistry, physiology, botany, geology, and even meteorology and engineering. Thus the book includes discussions among many others of such men as Paracelsus, Bacon, Boyle, Stahl, Priestley, Cavendish, Scheele, Lavoisier, Davy, Mulder and Liebig, whose work laid the early experimental and theoretical foundation of pure chemistry and who must be considered in any historical introduction to this science, together with Grew, Hales, Ingen-Housz, de Saussure,

[1] The transliteration of all characters not mentioned above would remain as now indicated in *Chemical Abstracts.*