Comments and Communications

Problems of Translation

In the September 15 issue of Science (**112**, 317 [1950]) Joseph E. Williams, of the Stanford University Department of Geography, presents a justifiably favorable review of the recent American edition of L. S. Berg's *Natural Regions of the USSR*. Similarly favorable reviews have appeared in the New York *Times* (June 18, 1950), the San Francisco *Chronicle* (July 23, 1950), and perhaps in other publications that have not come to the attention of the present writer. Those interested in opinion concerning the original text may consult R. M. Fleming's report in the *Geographical Review* for April 1938 (**28**, 351). Reviews of the recent American edition overlook certain aspects of its production that are exceedingly important for a proper understanding of the strength, the weakness, the direction of development, and the content of Russian scientific publication. With this in mind, the following comments are offered.

We pride ourselves on being the best-informed nation in the world. Nevertheless, *Natural Regions of the USSR* was first published in Russia in 1937, there was a second Moscow edition in 1938, and a French translation appeared in Paris in 1941; not until nine years later do we have the first English translation (13 years subsequent to the original appearance of the book). The question arises: How much more of this type of material is available, waiting to be made current through translation? The answer: A great deal. Harry Schwarz (*Times*, June 18) makes the following statement about this book:

> How wide the gulf is between the Soviet Union of 1950 and that of 1937 is perhaps most clearly indicated by the fact that this volume has no sycophantic adulation of Stalin or quotation of his works, while it has at least one acknowledgement of a geographic discovery by an American naval officer. If it were being published today for the first time in the USSR—an unlikely event in view of the obvious military usefulness of this volume—these "deficiencies" would no doubt have been rectified.

Mr. Schwarz creates a false impression. It is remarkable that war, with all its dislocations and political pressures, has not had a more deleterious effect upon the amount of Russian publication in the scientific fields, more especially those dealing with geography and related subjects. A case in point is *Geografia Zhivotnyx* ('Animal Geography'), by Bobrinskii, Zenkevich, and Birshtein, a general textbook drawing widely on the literature of all nations (and giving credit where credit is due), which appeared in Moscow in 1946. If the Russians draw freely upon our work and we fail to consider theirs (a process which seems to have been going on for some time now) they will, in due course, be better informed than we are. All the self-satisfaction in the world will not compensate for our neglect of foreign literature.

As J. A. Morrison (chairman of the Administrative Committee of the Translation Project of the American Council of Learned Societies) points out in his preface, Olga Adler Titelbaum has done a stupendous job in translating the text under review. A careful comparison of the original with her translation reveals much evidence of keen scholarship. Comparing Mrs. Titelbaum's work with the French text, it is the opinion of this writer that, although the French may read more smoothly and be of a more polished style, it does not come up to the standards of accuracy set by the American edition. Furthermore, the French text lacks indices, glossaries, and numerous illustrations and maps that render the American volume very useful. Even so, the American volume is by no means as good as it could and should be. The student who uses *Natural Regions of the USSR*, be he college freshman or highly trained geographer, must bear in mind the limitations of this study as an authoritative source book. It contains a fair amount of misinformation and lack of clarity born of language difficulties. These difficulties are general in the translation of scientific Russian into English. Although elementary, they represent a surprisingly effective barrier to the accurate English rendition of Russian scientific literature. For present purposes these difficulties are divided into three major categories: simple translation error, editorial error or style obscurity, and typographical error. Under the heading of translation error one can recognize four distinct types, described briefly below with examples from the handling of animal names. The advantage of using animal names in this connection is threefold: they are simple noun forms not easily affected in meaning by sentence structure; they refer to demonstrable elements of nature that can be studied in pictures, specimens, and other nonlinguistic media; and, most important of all, every animal bears a more or less universally accepted scientific (Latin) name allocated on the basis of international rules to which all zoologists adhere.

1. The first translation error is not understanding the meaning of a term in the language from which the translation is being made (Russian). *Vertlyavy dyatel* is rendered as 'wryneck.' This word actually refers to the middle spotted woodpecker (*Dryobates medius*), a related but very different species. The present reviewer spent several hours running down the correct translation. With 2,000 (more or less) similar terms to work with, Mrs. Titelbaum could scarcely be expected to put in a day or so on each one.

2. The second translation error is not understanding the meaning of terms of the language into which the translation is being made. A fairly systematic error of this sort is the mixing of British and American common names with no indication as to which is being used. Most specialists have both sets of terms in mind and can properly interpret as they read. The beginning student, however, is led badly astray. The following is a condensed

example. The words *blackbird, robin,* and *elk* are used to refer to the species *Turdus merula, Erithacus rubecula,* and *Alces alces.* This is British usage and quite proper. The species concerned occur in Europe but not in America. However, the American words *blackbird, robin,* and *elk* refer to entirely different species: the blackbirds are any one of a number of species in the family Icteridae; our robin is specifically *Turdus migratorius;* our elk is any one of a number of species within the genus *Cervus,* more especially *C. canadensis.* On the other hand the American terms *willow ptarmigan* and *brant* have been used to designate the species *Lagopus lagopus* and *Branta bernicla,* which will be found in British literature under the names *willow grouse* and *brent goose.* By not adhering definitely to the British or the American usage an area of confusion is left open to the student, who will, rather than take the trouble to get the background necessary to understand this nomenclatural dualism, dispose of the matter by concluding that either author or translator is not deserving of full confidence.

3. The third type of translation error is the rendition of a specific term with a general equivalent. The Russian *gus-gummenik* has been rendered 'wild goose.' There are a dozen species of wild goose occurring in the Soviet Union (slightly more or less according to your interpretation of what constitutes a goose). The term *wild goose* has no specific reference in either the American or the British literature. The immediate inference is that Professor Berg has handled his bird names loosely and does not intend to make specific reference. Such is not the case. *Gus-gummenik* refers to the bean goose (*Anser fabilis*) and should have been so rendered.

4. The fourth type of translation error is the misleading literal translation. The Russian *polevoi vorobei* is rendered literally 'field sparrow.' The American field sparrow is an entirely different species which does not occur in Eurasia. The British, as far as can be discovered, use no such term as *field sparrow. Polevoi vorobei* actually refers to *Passer montanus,* known to the British as 'tree sparrow.' Insofar as the term *tree sparrow* is preempted in America by another strictly New World species, about the only way out of the problem would be to render *polevoi vorobei* as 'European tree sparrow,' the title under which this bird usually makes its appearance in American publications.

Under the heading of editorial error and style obscurity come such matters as inconsistency in the translated form of Russian proper names and specialized terms, the preparation of glossaries, indices, and figures. One or two examples will suffice to illustrate. On page 9 we find the following: "Vaigach Island, separated from the continent by Yugorsky Shar ('strait') . . ." *Shar* is a word of North Coast origin meaning strait. On the following page we find: "Some 30 or 40 kilometers from Matochkin Shar, on the southern island, glaciers begin to appear." A little further on: "Kostin Strait contained more islands in 1924 than are indicated on old maps." The word *shar* does not appear in the glossary. Scrupulous adherence to the Russian text appears to have caused this terminological inconsistency where the idea of *strait* is rendered in three different ways. Meticulous following of the text is considered a virtue, and it may well be, but the other side of the question should be considered. Russian students know the meaning of the word *shar* at about the same level as Americans know the meaning of the Scotch word *loch* ('lake'). The modern and widely used Russian word for strait is *proliv.* The interplay of *shar* and *proliv* in the Russian text results in a pleasant style effect without loss of clarity. In the English the contrary is the case. It would have been better to reduce these three geographic terms to their least common English denominator and render them as: Yugorsky Strait, Matochkin Strait, and Kostin Strait. In different forms this same problem recurs throughout the text. The Russian word *raion* is frequently retained in italics. Where it is not handled in this way it is rendered by various appropriate English equivalents such as *region, vicinity,* or *near.* The glossary definition of the retained word *raion* is good as far as it goes, but does not indicate that the word has more than administrative meaning, being used by the Russians with about the same scope (not necessarily congruent) as the American term *territory* (as in breeding territory of the grouse, Territory of Alaska, territory around Boston). The Russian term *suslik* is retained. The word is broadly understood by European mammalogists; it is the subject of a translator's note; it is also included in the glossary. On the other hand, it is one of the few animal names for which we have a nearly exact English equivalent; e.g., 'ground squirrel.' The words *toltry, grivy, kolki,* and others are retained in italics, explained at the point of first introduction, but not included in the glossary. Using the book as a reference, one turns to page 150 to read about vegetation on elevated portions of the desert zone. We find *polyn, boyalach,* and *biyurgun* growing there in italics. Of these retained words only one, *polyn,* is explained in the glossary. Explanation of the other two appears in the text on page 149. Apparently the frequency of occurrence, importance, and juxtaposition to text explanation have figured in deciding whether or not retained Russian words are given a place in the glossary. Retained words should have been reduced to the number of those that have no satisfactory English equivalents. More important, every retained word should be included in the glossary.

The category of typographical error scarcely needs comment. Proper names should always be proofread most carefully in scientific work. "Rosa's gull" should appear as Ross's gull. *Felix,* comic strips to the contrary notwithstanding, should be *Felis.* The volume in hand lacks a list of errata, which would be useful.

The use of italics may be classed as either an editorial or typographical problem. In the course of an interesting discussion on the development of the Black Sea, the terms *Neo-Euxine* and *Karangatsk* are used eight times, the latter appearing twice in Roman and twice in italic type, the former appearing once in italic and three times in Roman type. The Russian text has been followed with respect to type style. The question immediately arises: What to do with a retained Russian word which was italicized in the original text? Double italics? Then again, if we follow Russian type style,

what shall we do with Latin scientific names which the Russians, because of the contrasting Cyrillic alphabet of the text proper, render in Roman type? Italics, parentheses, quotes, and diacritics in general are useful tools in scientific writing and in translating. In translating scientific writing, however, unless they are held to a minimum, they rapidly become so abundant and superimposed the one on the other that they lose meaning. The term *kara-dzhusan* is rendered in italics within parentheses. In the original text it is in standard Cyrillic within quotes within parentheses.

A more serious misuse of punctuation is the inclusion of translator's comments sometimes within brackets and sometimes within parentheses. We find that the translator's additions are helpful, but they most certainly should have been consistently included within brackets (per conventional procedure). The inclusion of translator's comments within parentheses throws a shadow of doubt on the source of every bit of parenthetical material throughout the book—a considerable quantity of data, by the way.

What do these comments concerning translation technique add up to? The American Council of Learned Societies has produced a *soft* translation, which cannot be used freely as an authoritative source book. There is much evidence that Mrs. Titelbaum was not only aware of the problems mentioned above, but also made special efforts to solve them. From outside looking in, it appears to this writer that she did not have adequate facilities (including time and specialist cooperation as among the most important) to produce a *firm* translation. A carefully revised edition, involving extensive specialist cooperation, would render this volume an extremely useful classic in the field of geography and, what may some day prove more important, a broad steppingstone toward the solution of the general problem of intelligently studying the Russian scientific literature by means of translation.

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Colloid Osmotic Pressure

IN THE preparation of his interesting paper on "A Rational Method for Calculating Colloid Osmotic Pressure of Serum" (*1*), R. H. Kesselman has probably overlooked several previous publications related to the subject.

1. Dr. Kesselman states that "a fall in serum sodium produces a rise in serum colloid osmotic pressure," and that "this is an observation not previously emphasized and is a consequence of the Donnan equilibrium." Even if no significance is attached to some certainly erroneous or exaggerated statements (*2*), the influence of the sodium concentration on the colloid osmotic pressure *in vitro* was observed more than 20 years ago (*3*) and has already been explained as a consequence of the Donnan equilibrium (*4*). As the activity of the indiffusible serum ions is always very small in comparison with the activity of the diffusible ones, however, this influence is very slight—much slighter than results from Dr. Kesselman's calculations. As for the situation *in vivo,* it was already known that the colloid osmotic pressure of the serum increases during low salt diet (*5*) and is lowered by oral administration of sodium chloride (*6*) but in the observations mentioned, these effects were independent of the serum sodium level and probably were due to variations of the serum proteins only.

2. Nearly 20 years ago (*7*) I pointed out that the empirical relations between the protein content and the colloid osmotic pressure of serum established by von Farkas (*8*), Govaerts (*9*), and others (*10*) cannot reflect reality, because all these equations are based on the erroneous assumption that the osmotic pressure exerted by each gram of albumin or globulin is independent of the total protein concentration. The same objection holds against Dr. Kesselman's rationally derived formula: neither the law of partial pressures nor Van't Hoff's law applies to lyophilic colloidal systems.

Verney (*11*) found a strong analogy between the behavior of the colloid osmotic pressure during variations of the serum protein concentration and the Van der Waals equation, and stated that $p(v-b)=K$, p being the colloid osmotic pressure, v the reciprocal value of the protein concentration, and b and K constants. After having shown by measurements of the colloid osmotic pressure of serums concentrated by ultrafiltration and diluted with ultrafiltrate that Verney's equation is a correct expression of the facts (*12*), I was able to demonstrate (*13*) that the values of b and K depend essentially on the albumin/globulin ratio (q) and to derive an equation

$$p[v-0.0182(q-1.39)^2-0.0415]=\sqrt{q+0.2}+2.185$$

and construct a nomogram, both of which permit one to determine the colloid osmotic pressure with an error of less than 5%.

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