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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