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HEMOGLOBIN, GLUCOSE, OXYGEN AND WATER IN THE ERYTHROCYTE

A Concept of Biological Magnitudes, Based upon Molecular Dimensions

By Dr. DAVID L. DRABKIN

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THE purpose of this communication is to direct the attention of biological workers to the illumination which may be afforded in many problems by expressing, when possible, biochemical relationships on a molecular basis.

The use of empirical "units" in the literature of the vitamins and hormones is justified in the early stages of investigation before precise quantities can be employed. However, in many instances the usage of "units" of this or that has continued long after the chemistry of the therapeutic or prophylactic agent has been established. The persistence of such empiricism is not only irksome, but serves to obstruct

quantitative thinking and often delays proper interpretation and formation of useful concepts. With the enlarging interest in the architectural chemistry of cells and the dynamics of cellular metabolism, the realization appears inevitable that quantitation even on such a basis as "gm or mg per 100 ml" may have but limited usefulness. This is more obvious in a consideration of the complex equilibria which are the chemical mechanisms of cellular work and energy supply.

My attention was drawn forcibly to the advantages and desirability of calculating the concentration of cellular elements in terms of molecular populations

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