

PRACTICAL METHODS FOR DETERMINING MOLECULAR WEIGHTS. BY HENRY BILTZ, Privatdocent at the University in Greifswald. Translated by HARRY C. JONES and STEPHEN H. KING. Easton, Pa.: The Chemical Publishing Company. 1899. 235 pp. Price, \$2.00.

Previous to the appearance of the German edition of this work there was no satisfactory reference book on the determination of molecular weights, particularly by the vapor-density methods. Windisch's "Die Bestimmung des Moleculargewichts" was so voluminous and contained so many processes, with so much descriptive matter that it required an experienced hand to find just what was wanted, and therefore could not be used as a satisfactory laboratory guide. Fuchs's "Anleitung zur Moleculargewichts Bestimmung" was entirely satisfactory, but unfortunately was confined to the cryoscopic processes, thus leaving no satisfactory laboratory guide for the vapor-density methods.

This translation places in the hands of English-reading students a masterly summation of the practical methods for determining molecular weights by the vapor-density and the cryoscopic methods, with a careful criticism of the different procedures, and a comparison of the usefulness of one with the other. The author has been strongly under the influence of Victor Meyer, which gives an authoritative value to the Meyer displacement method and its various modifications. The separate methods are described with clearness and with that close attention to essential details which clearly shows the result of much experience. The critical discussion of the results obtained by the various methods is extremely valuable, especially those values obtained from substances which dissociate on heating, and those which suffer electrolytic dissociation in solution. The references to the literature are frequent and form a valuable part of the book.

The book contains chapters on the vapor-density methods of Meyer, Dumas, Gay-Lussac, and Hofmann, with the various modifications; and on the methods for determining molecular weights of substances in solution by the rise in boiling-point and the lowering of the freezing-point. The method of Nerst based on the principle of the lowering of the solubility is treated briefly. The process worked out by Traube and based on a comparison of the values from a determination of the molecular

volume and the theoretical value, is described, but is not recommended.

The translators have done their work satisfactorily. They have added a short chapter on the method and apparatus devised by Jones for the determination of molecular weights by the rise in boiling-point.

HENRY FAY.

THE COST OF LIVING AS MODIFIED BY SANITARY SCIENCE. BY ELLEN H. RICHARDS. 121 pp. New York: John Wiley & Sons. 1899.

This little book is a great disappointment to the student of sanitary science because of the misleading title which it bears. In no single instance has the author given us an idea whether the cost of living has been modified either favorably or unfavorably by sanitary science. She has shown that the cost of living has been increased by various causes which must, however, be classed as economic, social, and industrial.

The principal causes to which she attributes the increased cost of living are: The gross waste on the part of the housewife in reckless and useless expenditure for commodities which are unessential to health and happiness, and the improper utilization and even waste of the commodities purchased; also, the lack of proper interest in her duties, and want of appreciation of the importance of those duties on the part of the housewife. The factors which have brought about the foregoing conditions are mainly industrial, due to the removal of all manufacturing from the home to the factory, changing the occupation of the housewife almost altogether from that of a producer to that of a distributor. It will be seen that none of these causes are traceable to sanitary science.

The subject-matter presented is of marked interest and of the highest importance, and it is unfortunate therefore that it has been presented under a misleading title. Moreover it is to be regretted that the author has not adhered to the title given to the book because there is every reason to believe that the cost of living has been modified by sanitary science and a contribution embodying this information would be most valuable.

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