

New Books

Trace Elements in Human and Animal Nutrition

By E. J. UNDERWOOD, Academic Press, Inc., New York, 1956, 430 pages, \$9.50. Reviewed by GEORGE K. DAVIS, Florida Agricultural Experiment Station, Gainesville, Fla.

IT IS PARTICULARLY FORTUNATE that this book should have been written by Dr. Underwood. His intimate knowledge and contact with the early work in cobalt nutrition and his subsequent close association with trace element research show clearly in the presentation of accomplishments in this field, and also in his presentation of the many unsolved problems which make this field of research so intriguing. This book, prepared as it was for specialists in the field of nutrition, is a very satisfactory contribution at a time when the interest of investigators has been so greatly stimulated. It will be useful also to workers in the many fields which are related to nutrition.

Dr. Underwood has covered the trace elements in a masterful fashion and has been especially helpful in that he has not hesitated to indicate his own evaluation of much work that has been done, at the same time clearly indicating that this is his own considered opinion.

Iron is used as the dividing point between the macro and micro mineral nutrients, and although somewhat arbitrary, this may well establish a pattern in a rapidly developing trace element field. The pattern followed in presentation of iron in animal and human nutrition is particularly valuable for the student of nutrition and for the specialist in the field.

The historical background, content and distribution in tissues, forms and compounds which are present in tissues, patterns of absorption and excretion, deficiency conditions, requirements, and food sources are treated in that order. A similar pattern is followed for most of the 10 elements which may be classed as required or possibly required for animal nutrition. A much more limited consideration is given of nine additional elements which occur in animal tissues regularly, but the requirement for which in animal nutrition remains very doubtful.

The chapter on cobalt is particularly rich in that it reveals the wealth of personal background of the author in the research with this trace element. The introductory chapter and the final chapter on soil-plant-animal interrelationships are refreshing in their treat-

ment of the development of the trace element concept, and in the sound evaluation of a subject that has been the basis of near hysteria on the part of faddist groups.

The author should be particularly complimented upon the thoroughness with which the literature has been covered in the reference lists. This alone would make the volume well worth the purchase price to investigators and students in the field.

The field of trace elements is one that is moving with extreme rapidity, and a volume such as this cannot hope to be up to date. However, it is well to point out that as of its completion date, this book has come close to being abreast of the literature. Some slight errors have occurred in the citations but none are serious. This book will certainly be a valuable addition to the library of anyone interested in the trace element field.

LITERATURE AVAILABLE

Active Carbons. Booklet entitled "Powdered Activated Nuchar for Purification and Reclamation" offers helpful hints for the removal of impurities and objectionable tastes and odors. Product useful in the food and insecticides industries. Write Dept. A&F, INDUSTRIAL CHEMICAL SALES DIVISION, WEST VIRGINIA PULP & PAPER Co., 230 Park Ave., New York 17, N. Y.

Bagging Scale. High speed gross bagging scale with automatic and semi-automatic delivery described in product data sheet. Pellets, molasses feeds, mash feeds, chemicals, powders, and other materials can be handled by the scale. Installation dimensions given, as well as bagging specifications. Request Data Sheet 5701 from Hart Bandstra, Dept. A&F, RICHARDSON SCALE Co., Van Houten Ave., Clifton, N. J.

Bucket Elevators. Detailed design and operating data covered in bulletin. Elevators available in three bucket sizes: 3 x 3 in., 6 x 4 in., and 8 x 5 in. Maximum discharge heights are 35 ft., 60 ft., and 80 ft. respectively. Capacities range from 4800 lb./hr. of 50 lb./cu. ft. material to 82,000 lb./hr. of 150 lb./cu. ft. material. Other features are use of standard roller bearing pillow blocks mounted in dust-tight enclosures, low over-all height, automatic control of feeds, and simplified bolted construction for easy maintenance and inspection. Bull. BEB-101, Dept. A&F, CARPCO MFG., INC., Jacksonville 6, Fla.

Compacting Mill. Unit designed to provide low cost, mechanical means for converting or upgrading particle size, and for controlling product density and product solubility factors. Equipped with heavy duty vapor-blasted mill rolls. Vibrating screen and gyratory screen used with the compactor or independently as conditions may require. Request Bull. 07B8836, Dept. A&F, ALLIS-CHALMERS, Milwaukee 1, Wis.

Dust and Products Collectors. Engineering drawings, complete dimensional tables, and full design details given in bulletin. Units designed for all applications where air is used to handle material, whether it be for feed, foods, insecticides, or a wide variety of toxic, hazardous, light, or heavy materials. For further information request Bull. 150-A, Dept. A&F, SPROUT, WALDRON & Co., INC., 130 Logan St., Muncy, Pa.

Industrial Liquid Meters. Revised 16-page industrial meter bulletin offers more complete temperature, viscosity, pressure, and registration data; explanation of various metering terms; as well as description of oscillating piston meters. Bull. OG400, Dept. A&F, Meter and Valve Division, ROCKWELL MFG. Co., 400 North Lexington Ave., Pittsburgh 8, Pa.

Phosphorus for Feeds. Booklet, "Phosphorus for Your Feeds," published by Coronet Phosphate Co., discusses new studies which indicate higher levels of phosphorus in livestock and poultry feed may be profitable. Booklet also contains statement by J. R. Couch, Texas A&M College, which says that phosphorus suppliers should be required to provide data concerning the availability of phosphorus in their supplements. May be obtained from Dept. A&F, CORONET PHOSPHATE Co., Norfolk, Va.

Price List. Essential oils, aromatic chemicals, floral absolutes and concretes, citrus concentrates, fixatives, covered in price list now available, but limited to those whose purchases are in wholesale quantities. Dept. A&F, FRITZCHE BROTHERS, INC., 76 Ninth Ave., New York 11, N. Y.

Water Demineralization. Electric membrane method of water demineralization described in 17-page illustrated booklet which provides design, performance, and cost data on plants ranging in capacity from 2500 to 2 million gallons of water daily. Bull. No. 3 Rev., Dept. A&F, IONICS, INC., 152 Sixth St., Cambridge 42, Mass.