

photographic methods employed by the Carnegie Institution in the publication of the Factor Tables and the List of Primes. Both the author and the publishers deserve the gratitude of every lover of science in putting in the hands of mathematicians results of such permanent value.

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*Feeding the Family.* By MARY SWARTZ ROSE.  
New York: The Macmillan Company, 1916.  
Pp. xvii + 449, illustrated.

Many factors contribute to the welcome such a book as this will doubtless receive. World conditions are forcing a searching analysis of food supplies. Any discussion of the subject, however, whether for the purpose of conserving existing supplies by reducing waste or of increasing the supply by stimulating production, must be based on an understanding of the relation between food materials and bodily needs, for the food requirement of 10,000,000 families is but a simple multiple of the food requirement of one family. There is a growing disposition, too, among those who set for themselves serious tasks in life to be restive under small ailments which curtail working hours and reduce efficiency. There is a demand, therefore, for a working knowledge of personal hygiene, including simple, rational, well-founded rules for eating. At the same time great new avenues for instruction are opening and home economics, including the subject of foods, is being introduced in places undreamed of a few years ago. It has been made part of the instruction in universities and primary schools and is being taught in remote mountain regions by extension methods and in crowded city tenements by visiting housekeepers. This is creating a demand among instructors for reliable handbooks. At the same time it is creating a great body of intelligent housekeepers in private homes and in public institutions who are ready and anxious to make those fine adjustments between food supplies and family needs without which nation-wide or world-wide campaigns for the conservation of food must be largely ineffective.

Those who approach the subject most intelligently often find that they must use one language—that of calories and protein—in discussing bodily needs, and another—that of bread and butter, or bacon and eggs—in planning meals or in buying food. Only the fortunate few who, of course, include the writer of the book, use both languages with equal facility. Most people need two-part dictionaries of food, by means of which they can change from the language of calories and protein to the language of bread and butter, and back again, if necessary. Such dictionaries are, to be sure, not entirely new. Many books have given 100-calorie portions in terms of common food materials and have recorded in convenient form the food values of many common dishes. Years ago Mrs. Richards put much of this material into chart form for use in the kitchen. The time, however, was not ripe then for such information and the plans were never much elaborated. Now to meet new needs Mrs. Rose has presented a large number of carefully worked-out tables, the fruit of years of study and of teaching. By use of them the reader finds not only the weight, but also the volume, of common foods that it requires to furnish a definite amount of nourishment. We find, for example, not only that it requires  $2\frac{1}{2}$  ounces of creamed salt codfish, made after a recipe given in the book, to provide 100 calories of energy and that  $32$  of the calories would be supplied by protein, but also, what is of even greater value to the housekeeper, that this amount would measure about one-half of a cup. Again we find that a familiar recipe for cottage pudding would make two loaves, 6 by 4 by  $1\frac{3}{4}$  inches in size; that it would weigh 24.3 ounces; that it would supply 2,100 calories; and that a 100-calorie portion would be a slice  $1\frac{3}{4}$  by 2 by  $2\frac{1}{2}$  inches in size. In general, every provision is made for adjusting food supply to food requirement.

The food requirements of persons of different ages and occupation are carefully presented, and family dietaries are worked out.

The subject of prices is subordinated to that of food values. This is fortunate, for food values are permanent while prices fluctuate

with seasons or years or markets. It is often necessary for the sake of clearness of presentation to deal with prices, but the general futility of doing so is demonstrated by the fact that even at the moment when this book was published prices differed widely from those reported in the chapters on the cost of food. This shows the need of thorough education in food values and we might almost say of training in arithmetic, which will enable one to see the money relations of food for oneself and to compare costs as prices change.

The important but often neglected subject of food prejudices is most happily treated in "Food for Children Eight to Twelve Years Old."

As Mrs. Rose points out, "only a few well-chosen dishes need be offered at any one meal, but a tendency to choose a single dish for a meal and refuse everything else should be discouraged. In adult life a well-balanced diet demands more kinds of food than in childhood, when such a variety of elements is supplied by milk alone, and it is a great advantage to have been so trained as to be able to take these in all sorts of forms. Most adults eat in groups and pronounced individual likes and dislikes have great economic and social, if not always physiological, disadvantages. Half the problems of the food provider arise, not from the difficulty of securing wholesome food to make a well-balanced ration, but from the necessity of remembering that . . . [individual tastes vary]. Youth is the time to cultivate respect for all natural foods as a means to physical and mental efficiency, and not merely as ticklers of the palate. . . . Most food aversions are acquired in early life when the sensibilities are keenest. An accident at the table with humiliating consequences, an unpleasant association of a food with illness, a comparison with something disagreeable, may cause repugnance lasting for years. Such aversions, once acquired, call for patience and tact and may never be completely overcome. . . . It is worth while to take thought as to how to keep children's attitude toward their food rational."

C. F. LANGWORTHY

### RECENT PROGRESS IN PALEONTOLOGY

*Invertebrates.*—Owing to disturbed international conditions, the number of foreign contributions to the literature of paleontology is almost negligible. In this country the most important work on the invertebrate division of the science is contained in the two volumes on the Upper Cretaceous of Maryland, published by the geological survey of that state. It is illustrated by a handsome series of plates.

Dr. C. D. Walcott, in continuation of his studies of Cambrian geology and paleontology, has published the third of a series of papers that bears the title of "Cambrian Trilobites" (*Smithson. Misc. Coll.*, Pub. No. 2420). It is accompanied by 23 excellent plates. In the *Proceedings of the U. S. National Museum* Professor T. D. A. Cockerell has two papers on American and British fossil insects. In Bulletin 96 of the same institution Dr. R. S. Bassler and Ferdinand Canu have published a "Synopsis of American Early Tertiary Cheilostome Bryozoa." Dr. A. F. Foerste is author of an important memoir on the Upper Ordovician formations in Ontario and Quebec, published by the Canadian Geological Survey. Some new Silurian brachiopods from Maine are made known by H. S. Williams, and new Oligocene mollusks from Georgia are described by W. H. Dall, both papers contained in the *Proceedings of the U. S. National Museum*.

*Fishes.*—Some new anatomical features regarding the peculiar arthrodiran genus *Homo-steus* are described by Dr. A. S. Woodward in the *Journal of the Torquay Natural History Society*. New investigations on British Paleozoic ganoids and lung-fishes have been conducted by Dr. D. M. S. Watson and Henry Day (*Mem. and Proc. Manchester Lit. and Phil. Soc.*, Vol. 60, pt. 1), and the latter author has also issued a note on the parasphenoid of a Palæoniscid (*Ann. Mag. Nat. Hist.*, Vol. 16; pp. 421-434).

The remarkable spirally coiled dental organs of *Helicoprion*, from the Permian of Russia, form the subject of two communications by A. Karpinsky, the original discoverer of these re-