QUOTATIONS

THE MEDICAL MAN AND RESEARCH

IN a recent address on "Research Foundations in their Relation to Medicine"[1] the well-known neurologist of the Wistar Institute, Professor H. H. Donaldson, has expressed certain views which deserve to be heralded in medical circles beyond the immediate audience of graduates in medicine to which they were originally addressed. He has emphasized the fact that the programs of the large research foundations imply the hope that by such endowments new facts and new points of view fundamentally important to medicine may be discovered. Many of these establishments serve in a way to mediate between the problems of practise and the findings of science. The popular mind is constantly alert for some new application of science to the work of the world or the needs of the arts. Accordingly there is an ever-present tendency to place undue importance on the purely practical aspects of all research.

The worker who is engaged in the actual pursuit of scientific investigation realizes well enough that there is no essential distinction between so-called practical and theoretical knowledge. He would, indeed, be rash who would foretell where one type of contribution merges into the other. But with the laity the search for the unknown finds little encouragement except when it is attended by some palpable result of immediate application. Hence the pressure which many of our institutions feel to present something that will satisfy this unfortunate and mistaken public demand.

Precisely here the medical man of to-day has an opportunity and a duty. Trained in the school of modern science, he should have acquired an appreciation of the unhampered search for new knowledge which is so rarely intelligible to the community at large. He is more or less familiar with the aims of the research worker and has some understanding of what these endeavors have contributed to the world. He should defend the effort and help to spread the propaganda. We believe that the attitude of the practitioner toward certain features of medical research is, in general, wholesome and helpful in so far as these features involve relations to the problems of clinical medicine. There is, however, another class of problems which demand solution no less than some of the more obvious questions. These more subtle problems involve the "why" and "how." They are harder to answer; they appeal to fewer investigators, and not many men are adequately equipped to attack them. As Donaldson has said, because the men who can do this latter kind of work are relatively rare, even among investigators, because such work can have rational appreciation from a limited group only, and because knowledge of this sort is sure to become the basis for many applications in the future, it behooves us all to see to it that we foster such investigators—the most valuable of our natural resources. When a mistaken popular notion arises as an obstacle to progress we must help to remove it.

It has often been said that research is an attitude of mind. This is something different from the mysterious features which are sometimes attributed to it. The spirit of research is attainable, even if at times it seems remote. Quoting Donaldson: "A man may have little leisure and trifling resources, and may never have published; but if he examines the world in a questioning spirit, if he carries with him not only conclusions, but the observations on which they rest, if he refuses to pound square facts into the round holes that he happens to have in hand, he has attained illumination."—*Journal of the American Medical Association.*

[1] Donaldson, H. H., "Research Foundations in their Relation to Medicine," address at the graduation exercises of the Yale Medical School, SCIENCE, July 19, 1912.

SCIENTIFIC BOOKS

The Principles of Human Nutrition. By WHITMAN H. JORDAN, director of the New York Agricultural Experiment Station. The Macmillan Company. 1912. Pp. 450. $1.75 net.

The object in view, as stated in the preface,

was "such a presentation of the subject-matter related to human nutrition as would be more or less adapted to popular use, but particularly to instruction of students with moderate scientific acquirements, whether in colleges, secondary schools, short courses, schools of domestic science or correspondence schools." The volume is essentially one for the producer and consumer. It is written in non-technical language, and no chemical symbols are employed.

Part I. contains eight chapters (176 pages) dealing with the subjects: The Plant as a Source of Human Sustenance, The Chemical Elements Involved in the Nutrition of the Human Body, The Compounds of Human Nutrition (Chapters III. and IV.), The Digestion of Food, The Distribution and Transformations of the Digested Food, The Functions of Food Compounds, Laws of Nutrition. Part II. is devoted to practical dietetics and the chapters are headed: General Considerations, The Selection of Food or the Regulation of Diet, The Relation of Diet to the Varying Conditions of Life, Food Economics, Special Dietetic Methods, The Nutrition of the Child, The Character and Food Value of Certain Commercial Articles, The Preparation of Food, Food Sanitation, The Preservation of Foods. Pages 351–443 consist of tables showing the composition of American food materials.

A book on nutrition written for non-scientific readers can not justly be criticized for lack of strict scientific accuracy. In a few instances however the author seems to have incorporated material conveniently at hand instead of seeking the best available. For example, in Table II., page 16, is recorded the content of the principal mineral elements in a number of grains and vegetables. The figures are derived from Wolff's "Aschen Analysen" published in 1871. It is now well known that Wolff's values for sulfur, and in many cases for chlorine, are entirely unreliable. Again in Table XV., page 60, corn is listed as a protein and the values for its cleavage products are those given by Osborne and Clapp for zein. Osborne and Jones have expressed greater confidence in a later analysis of this protein.[1]

On page 25 occurs the statement that organic matter is of two classes: (1) protein and non-protein, and (2) carbohydrates, fats and acids. Misprints are occasionally met with but in general are not misleading. On page 34, however, a column of bases is headed acids, and again on pages 297–300 in four instances the cost of certain dietaries for children is given in fractions of a cent where it is evident that dollars are intended.

On page 128 hæmatin is used where hæmochromogen is meant, and on pages 129, 135 and 149 the same term is employed where hæmoglobin is the correct term.

Reformed spelling is employed in some cases but not in others. Thus on pages 68 and 74 xylose is spelled zylose, while saccharose is regularly spelled in the old fashioned way. On page 68 zylin is given as the equivalent of wood gum and as the mother substance of zylose. Similarly arabin is said to yield arabinose. Obviously xylan and araban are referred to. One might well question the wisdom of changing, without explanation, word endings having so definite a significance in carbohydrate nomenclature.

The data presented are on the whole reliable, and the errors noted should detract but little from the book when used by the class of students for which it is intended. It is written in a conversational style and is highly entertaining reading. The treatment of the economic and social aspects of human nutrition is somewhat better than the scientific, but it is decidedly the best non-technical treatment of the subject in general. The discussion of special dietetic practises (vegetarianism, uncooked food, etc.) is especially good, and the book should do much good in replacing the popular works on nutrition written by adherents to the various dietetic fads.

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[1] Osborne and Clapp, *American Journal of Physiology*, Vol. 20, 1908, p. 477. Osborne and Jones, *ibid.*, Vol. 26, 1910, p. 212.