



PRIVY COUNCIL

**MEDICAL RESEARCH COUNCIL**

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**THE  
CHEMICAL COMPOSITION  
OF FOODS**

*by*

**R. A. McCANCE AND E. M. WIDDOWSON**

*SECOND EDITION*

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## PREFACE

The nutritional and dietetic treatment of disease, as well as research into problems of human nutrition, demands an exact knowledge of the chemical composition of food. The pioneering investigations into food chemistry were made in Germany and the United States of America and until after the war of 1914-18 this country lagged far behind. The research on vitamins which began to make rapid progress soon after that war, and in which this country played a leading part, stimulated a demand for a wider knowledge about human foods. Accordingly, when Dr. McCance approached the Council in 1925 for support in order that he might determine, in the first instance, the amount of carbohydrate in foods used in the treatment of diabetes, it was recognised that the project was likely to have practical importance, and a grant was made for work along these lines at King's College-Hospital, London. Since that time the Council have continued to support similar and related studies by Dr. McCance and his colleagues, first at King's College Hospital and subsequently at the Department of Medicine, University of Cambridge; and during this period the investigators have gradually extended the scope of their inquiries. A system of analysis has been evolved by which they have determined all the important organic and mineral constituents of foods, with the exception of the vitamins, which have formed the subjects of extensive research by other workers and by different methods. Some idea of the amount of detailed analytical work involved in these chemical studies may be gathered from the statement that as many as twenty different constituents may require to be determined in a single foodstuff.

By 1939, when the first edition of these tables was published, this systematised analytical procedure had been applied by Dr. McCance and his colleagues to most of the foods commonly eaten in Great Britain. The method of approach had been somewhat different from that of previous workers in the same field; for the foods had been analysed, not only in the raw state, but also as prepared for the table, and studies had been made of the losses introduced by cooking. The investigators had also examined the question whether all the constituents of a food are really available for the body's use; whether they are decomposed in the alimentary canal, or fail to be absorbed. The greater part of this work was published by the Council in Reports in this Series (Nos. 135, 187 and 213). Some of the analytical data published in 1939 had already appeared in the earlier Reports, but many of them were new, and it was hoped that the first edition of these tables would contain all the quantitative data about the chemical composition of British foods likely to be required for practical work. It did not, however, in other respects supersede the three previous Reports, for the latter contained much information which was not reprinted.

The recent war and its attendant nutritional problems created a demand for analytical data, old and new, and experience and criticism led the authors to reconsider a few of the figures previously published by them, so that minor alterations and additions were made when the tables were reprinted for the third time in 1942. A new edition has now become necessary. The authors have made no change in the form of the main tables or text, but figures relating to a number of new foods and food materials have been added. These partly fill in gaps in the tables, partly replace older figures, but mostly supply information about the composition of foods which are characteristic of war-time and post-war circumstances. It was pointed out in the preface to the first edition of these tables that research of this nature is technically exacting and at the same time laborious. Almost every substance to be analysed brings up fresh problems,

and the solution of these problems may take weeks or even months. It is work which appeals to relatively few investigators, for the road is long and there is little prospect of making interesting discoveries by the way. Nevertheless, the steady demand for the first edition of this volume over the last six years has proved that Dr. McCance and Dr. Widdowson's contribution to knowledge has been widely appreciated, and the Council are glad to issue this new edition in the hope that it will continue to supply a want.

MEDICAL RESEARCH COUNCIL,  
38, Old Queen Street,  
Westminster, S.W. 1.

*December, 1945.*

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