

Symposium on Energy Balance

Introduction

IN OCTOBER of 1958, the officers of The Upjohn Company invited us to collaborate with them in the organization of an international conference on obesity. Preliminary conversations with Dr. Robert Talley and other members of the Upjohn staff suggested to us the idea of attempting to recruit participants who could present many facets of the obesity problem as a part of the broad biologic concept of energy balance. We permitted our imaginations to run unrestrained and selected a panel of speakers and participants, who seemed to us to be best qualified to deal with the subjects to be discussed, or a sort of "ideal" or "fantasy" panel. To our considerable astonishment, what began as fantasy became reality for few of those originally invited to take part in this conference refused the invitation.

The design of the program called for a discussion of the regulation of food intake and the first session was devoted to this topic. The central structures involved in the integration of food intake behavior were referred to and there was an interesting discussion of the nature of the information that is received and interpreted as satiety in the central nervous system. In the second session, the subject of energy expenditure was introduced into the energy balance equation. The concept of the efficiency of the utilization of food was presented and a fascinating description of the rather special problems of energy balance of migratory birds was given.

The conversation then shifted to problems of

intermediary metabolism, particularly the reactions involved in the processes of lipogenesis and cholesterologenesis. The malonyl coenzyme A pathway of fatty acid synthesis was described, and discussion of the regulation of cholesterol synthesis reduced the concept of balance to precise biochemical terms.

Following this discussion, the first of a number of papers on the general subject of the great energy bank of the body, the adipose tissue, and the conditions under which deposits and withdrawals of calories are made at the site of the aggregate depot organ was presented. The effects of hormones and of modifications in food intake pattern on fat deposits were of particular interest. The subject of withdrawals, the mobilization of free fatty acids from adipose tissue and its endocrine control, required one entire session of the conference, which was especially distinguished by the participation of Professor H. E. Wertheimer.

The final session was devoted to a discussion of genetically determined metabolic patterns that appear to predispose experimental animals and men to obesity. There is no doubt that such patterns exist in mice and there is a strong suspicion that similar ones occur in people; the difficulties of studying these problems in human populations were stressed.

The subject of the metabolic impact of long-continued obesity on the organism was one which could have been discussed in a symposium at least as lengthy as this one. Only two presentations were given in this area; one



on the susceptibility of obese mice to cancer and the other on certain hepatic and renal diseases that are commonly observed in hyperphagic rats.

The conference was marred only by the fact that Dr. William C. Stadie, who had been a sort of Unofficial Dean of metabolic physiology in this country, died a few weeks before the meeting. We are certain he would have enjoyed the discussion, and we missed his wise and gentle presence.

We are sure that the members of the conference join us in thanking the speakers, the discussers, and the chairmen of the sessions for adding so much to our education. We, the undersigned, were particularly pleased by the

attendance and participation of our Chief, Dr. C. N. H. Long, to whom we are both enormously indebted for stimulating our interest in the subject of the conference twenty years ago.

To The Upjohn Company, which made the conference possible, and to Drs. R. W. Talley and C. J. O'Donovan, who did an outstanding job of organizing the meeting, we give our sincere thanks.

Jay Tepperman, M.D.
Upstate Medical Center
Syracuse, New York
and John R. Brobeck, M.D.
University of Pennsylvania
Philadelphia, Pennsylvania

