Introductory Remarks

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THIS is a unique session as far as nutrition is concerned. During the course of this International Congress, there are to be no fewer than eight separate symposia in this field. This will be the only one specifically devoted to the subject of overnutrition. Most of the others will deal with undernutrition in one form or another.

A word of appreciation is due to Dr. Emmett Holt, who is responsible for the organization of this symposium. It was he who brought together the members of our panel of experts. Perhaps it is significant, and quite proper, that the panel members are all from the United States, which can boast of having one of the best-fed populations in the world.

In this connection, the following quotation from *The Lancet* seems appropriate: "Once upon a time there was a very poor country where nobody had enough to eat, and the average expectation of life was twenty-four years. There was also a very rich country where everybody had plenty to eat, and the average expectation of life was sixty-four years. In the very rich country, people used to save up milk and butter and cream and eggs and send them to the very poor country where they were distributed, especially to the children who would otherwise have had none. In this way the expectation of life in the very poor country was raised from twenty-four to twenty-seven years. Meanwhile, the expectation of life in the very rich country was rising too and went up from sixty-four to sixty-seven years, and everyone who did not die of cancer of the lung from smoking too many cigarettes, died of coronary thrombosis. Then someone discovered that coronary thrombosis was due to eating and drinking too much milk and butter and cream and eggs in the very rich country. So they sent all these materials to the very poor country, so that the expectation of life in the very poor country might be raised high enough for them to start dying of coronary thrombosis so that they, too, could stop eating and drinking milk and butter and cream and eggs."[1]

The relevancy of the subject of overnutrition should be evident to any observer of infants and children in the United States. Significant malnutrition is distinctly uncommon whereas the practitioner has to deal with an increasing number of obese persons. This is not to deny the prevalence of serious malnutrition in many parts of the world; it is rather that the nutritional considerations of other areas should not lead us to overlook the fact that overnutrition is a greater potential problem in this particular part of the world.

A number of years ago, the experiments of McCay and his associates[2] demonstrated that the life span of rats could be lengthened through systemic underfeeding. These findings have been recently confirmed by Ross.[3] Life insurance data[4] indicate that the overweight adult subject has a shortened life expectancy. Although no data are available for children, these observations, and others, indicate the need for attempting to evaluate the potential effects of overnutrition on the child.

There can be no doubt that the child of today grows faster and matures earlier than in previous decades; this phenomenon has occurred in European countries as well as in the United States.[5] A number of factors have undoubtedly contributed to this trend, but prominent among these is the fact that children are now better fed. The progressive increase

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TABLE I
A Contrast in the Nutritional Scene

Data	United States	Underdeveloped Area
Food supply	Abundant	Limited
Food quality, especially protein	Excellent (high intake of animal protein)	Poor (largely vegetable protein)
Customs and attitudes	Primacy of the child; indulgence	Child may be last to eat at family meal; separation common
Concept of disease therapy	Repletion—"feed a cold"	Exercise evil influence; fasting
Incidence of intercurrent disease	Low	High

in height and weight which has occurred in school children of Stuttgart, Germany, between 1910 and 1950, has been interrrupted on only two occasions—World War I and World War II, both periods of decreased food supply. Japanese children reared in this country are larger than their brothers left at home.[6] During the past half-century, American boys have increased in height by 6 to 8 per cent and in weight by 12 to 15 per cent.[7] Furthermore, the average age of menarche has shown a progressive decline over the years, amounting to some three and a half years in Norway during the past century.[5] All these data are offered in support of the premise that the modern child is better fed, for growth and development are both very sensitive indicators of the level of nutritional intake.

What are the factors which tend to promote overnutrition in the United States? First is the decline in chronic disease; for it is well known that disease interferes with nutritional performance and growth. Such diseases as rheumatic fever, chronic osteomyelitis and tuberculosis, to mention just a few, are much less common today.

The advanced technology of food production and distribution is another factor: We produce more food than we can eat, and it is food of high quality made readily available by efficient technics of distribution. Vitamin manufacture, virtually nonexistent prior to 1937, is now being carried out on a truly prodigious scale. For example, in 1955, we produced some 1,200 tons of ascorbic acid[8]—enough to provide every person in this country with 20 mg. daily—in addition to that which naturally occurs in foods. The dollar volume of vitamin manufacture in 1955 amounted to some $83,000,000.

Promotional advertising has as its goal the consumption of increasing amounts of food and food supplements. The public is constantly being urged to eat more and more. One even sees schemes promising that one can "eat and still reduce."

The attitude of the public is an important factor. Although overt obesity is not countenanced in our society, many parents are happier when their children grow at a rapid rate. The concept of "bigness" is as firmly established in the rearing of children as it is in the economic and industrial life of today. Babies are being fed solid foods at an earlier age, vitamin supplements are commonly given in doses which exceed those needed to prevent deficiency states, infant formulas are more concentrated than formerly.

Lastly, the attitudes of the nutritionist and the pediatrician have played an influential role. Nutritional science, and to a certain extent modern pediatrics, owes its origin to the deficiency concept of disease. This is the concept which states that disease can be due to lack of something in the diet. In the realization that optimum requirements are difficult to define, the physician and the nutritionist have sometimes taken the position of recommending that more be offered to the child, so that there will be no question about the adequacy of the intake. Much attention has been given to attempts to uncover "subclinical" malnutritive states; perhaps we should now turn our attention to subclinical overnutriture as well. Is it possible that in our efforts to insure an adequate diet for everyone, we are feeding some children too much?[9] Perhaps it would be well to consider the definition of the

word "optimum" as it applies to nutrition, particularly the nutrition of infants and children.

It is of interest to draw a contrast between the United States and some underdeveloped region, such as one in which the term "kwashiorkor" originated, with respect to some of these factors (Table 1).

Customs and attitudes do play an important role in nutritional performance. In our culture it appears to be of the utmost importance that the child be fed well; in certain primitive societies, the nourishment of the father is paramount. The common practice of sending the toddler away to live with relatives must certainly have some impact on emotional adjustment and appetite performance at this early age. Many primitive mothers follow the custom of reducing food intake at time of illness, and it is common for symptoms of kwashiorkor to appear in association with intercurrent disease.

Obviously, these generalizations do not apply in all instances (not all people in the United States have an adequate diet, and there are well nourished people in India), but they do serve to point out significant differences in cultural and social phenomena. It is evident that the sum total of the various forces in our culture are largely in the direction of overnutrition, while those in some primitive cultures act in the opposite direction. In our society we have operated on the assumption that maximum growth is optimum, an assumption which may or may not be valid for man.

At the dawn of modern pediatrics, there were many forces at work in the direction of undernutrition; today these have been replaced, at least in our part of the world, by forces operating to promote overnutrition. It is the ease with which overnutrition can now be achieved that constitutes such an impetus to its occurrence. Perhaps it is time for a new perspective in infant nutrition.[10]

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