

the children of today are not merely heavier or merely taller than their parents were, but are members of a generation altogether of greater physique. By *pre-war* scales of growth, post-war children appear three months older than their true ages.

Though the greatest improvement has been in those districts which were above average in 1938, there has been a definite improvement in the worst areas where war conditions produced greatest retardation, and where it was known that progress would be most difficult to achieve.

These, then, are some of the fruits of the science of nutrition a science which is still developing and expanding in the service of humanity.

Its attention is now being increasingly

directed to new problems of modern civilization—so-called “degenerative diseases” (such as the vascular and heart diseases) which are associated with nutrition although precisely how has not yet been settled definitely.

The science of gerontology—the study of the problems of aging may well reveal new ways in which the nutritionist can be of use to the community. For, just as the study of paediatrics has shown us that the nutrition needs of young children are different from those of adults, so the gerontologists may show that the requirements in old age are different from those of years.

The science of nutrition young as it is, has already contributed much to the health of the world's people : its prime is yet to come.

What People Eat and Why

By

Dr. W. R. Aykroyd

Director, Nutrition Division, U.N. Food and Agriculture Organization

The question “Why do we eat what we do in the way we do?” seems a simple one, but a moment's thought shows that there is no simple answer. In fact, human food habits depend on a variety of factors, historical, geographical, cultural, economic and so forth.

Foods can be divided into a number of main groups such as cereals, starchy roots (potatoes, yams), pulses (peas, beans, etc.), sugar, fats and oils, fruits, vegetables, meat, eggs, fish, milk. All human diets consist of these foods in varying—very varying—proportions.

The list reflects in the first place the way in which man has adapted himself to the environment presented to him by our planet at a particular stage in its existence. Given that environment, and

The diversity of food patterns in various communities of the world, and the geographical, economic and cultural factors determining them, make food consumption a fascinating subject of study. Successful measures to improve diet call not only for knowledge of what people eat, but also why they eat what they do in the way they do.

the need for food created by the expansion of the human race from a few scattered groups into a population of 2,500 millions, it is difficult to imagine any very striking differences in the main human foods.

Man might have domesticated other grasses into cereals, surrounded himself with different domestic animals and birds,

and hit on wild roots, tubers, vegetables and fruits which, after centuries of cultivation, would have rivalled or surpassed cassava, potatoes, cabbages and oranges. But this would mean differences within the food groups rather than entirely other sources of food.

The development of science may, of course, enable other sources to be tapped or created. Enthusiasts tell us that algae and grass, suitably processed, could provide human food in large quantities. There is also the prospect, somewhat remote, of "synthetic food". At the present time, however, we must make do with the foods and food sources we have inherited.

Processed food is not new.

"Food technology", in a broad sense of this term, has been as important a factor in the development of food sources as domestication, selection and careful husbandry and cultivation. Beginning with the use of fire for roasting meat, man has learnt to 'process' most of his foods in various ways, the invention of bread being a striking example. Out of domestic and local processing have grown the food industries which turn the raw material from fields and plantations into the elegant products familiar in our shops and on our tables today.

Large-scale food industry is not new ; for example, sugar has been a factory product for centuries and in ancient Rome there were great bakeries which made the bread for the proletariat. But within the last century or so the food industry has expanded to such a degree that it now exercises a profound and, on the whole, beneficial influence on human food patterns.

This was not always the case before the modern science of nutrition was born and its main findings became fairly common knowledge. The transformation of oil seeds into the widely-consumed, cheap, palatable and easily stored and transported product we call margarine is among the remarkable achievements of food technology.

Margarine as such is inferior in nutritive value to butter only because it lacks

fat-soluble vitamins, but another development in food technology has made enrichment with the missing vitamins possible and qualified it to compete with butter—all too successfully from the standpoint of the dairy industry—not only in price but also in nutrient content.

Widening choice of foods.

Geography or locality naturally influences food patterns. Since rice, but not wheat, flourishes in South-East Asia, the inhabitants of that region are in general rice eaters rather than wheat eaters. But during recent centuries the effect of geography has been steadily reduced. In the first place, the useful food plants and food-producing animals originating in one region have spread round the world. Maize is today so characteristic a crop in Egypt that one is almost surprised not to find maize cobs depicted in ancient Egyptian tombs ; the turkey of the Americas has become, by a curious sequence of events, a symbol of the English Christmas.

Secondly, the development of transport and technology has decreased dependence on local food supplies. Many countries such as, for example, Cuba, Israel and Venezuela, today rely heavily on imported foods, though few surpass in this respect that great food importer, the United Kingdom.

Through refrigeration and other technical devices, well-to-do people anywhere in the world have an almost unlimited choice of foods. On the other hand, the majority of people in what are nowadays called the underdeveloped countries, still live on foods which they themselves produce locally. In such circumstances, food patterns are less flexible and the diet in general more monotonous than in modern urbanized civilization.

Influence of custom and habit.

Although human food patterns are based on the main food groups I have listed, other elements in these patterns cannot be ignored. Scientifically speaking, a diet is satisfactory if it provides calories, proteins, vitamins and minerals in sufficient quantities. People

in general do not hold that view.

There are certain 'extras' in most human diets—tea, coffee, alcoholic drinks, flavouring agents, etc.,—which contribute little to dietary requirements but are in practice almost as essential commodities as staple foods. Their production influences agricultural economy in many parts of the world and they figure significantly in family food budgets. People *will* have their 'extras' even at the expense of more nutritious articles of diet.

Books could be written about the influence of custom and habit on food patterns. Every cultural group has its strong preferences for certain kinds of foods and cooking, and for a certain timing, size and sequence of meals, eaten according to a local ritual.

Taste and flavour have a physiological basis—about which surprisingly little is known—and hence we can assume a certain rough uniformity in human palates: sweet is sweet and sour is sour to all normal human beings. But we also know that taste can be educated or conditioned so that one man's meat is another man's poison.

Apart from the underlying factor of taste, preferences stem from an interplay between tradition, food supply and the necessities imposed by the material and social environment. Each group tends to regard its food patterns as the normal and natural ones; they are, in fact, set rather deeply in national or regional cultures.

Malnutrition by superstition.

A discussion of food superstitions and taboos—also cultural phenomena—would again require a volume to itself with illustrations drawn from all types of human society, civilized and primitive.

Dr. Cicely Williams, who introduced the word 'kwashiorkor' (a form of protein malnutrition) into medical literature, writes :* 'In East Africa, where kwashiorkor is alarmingly common, there are places where meat and milk are available

but the women and children do not get them. The women are told that if they eat eggs they will become sterile, if they eat fowls they will crow, if they eat goat they will grow beards.'

These are extreme examples, but there would be no difficulty in finding less picturesque ones nearer home.

Food production, processing and transport, wage levels, food prices—all these are only one side of the picture; on the other are human beings and their incalculable behaviour. But, of course, economic factors do exert a fundamental influence on dietary patterns.

Economic factors.

In return for a given sum of money, certain kinds of foods yield more calories than others. In the first group are cereals, starchy roots and sugar, and in the second milk products, meat and eggs. Less land and agricultural effort are needed to produce a given number of cereal calories than the same number from foods of animal origin, which are richer in some essential nutrients.

'Enough food' is a primary human necessity. When people are poor they must, to obtain sufficient calories, rely mainly on the cheaper foods. Investigations in many countries have shown that in general, family diets become more varied and nutritious with increasing income and what is true of families is also broadly true of countries and regions.

In poor agricultural countries, particularly those with a high density of population per unit of cultivated land, cereals usually provide 65 per cent or more of total calories. But here again there are the inevitable provisos and complications. Thus, while the consumption of some valuable foods rises with increasing income, that of other valuable foods may fall. Again, some poor agricultural countries obtain a better diet than others from approximately equivalent and limited food production resources.

**The Lancet*, 13 February 1954, page 323.