ledge. The securing of this exact knowledge should be high up on our list of priorities. Just how it should be carried out I am not competent to say—that would need the combined intelligence and experience of educationists, medical practitioners, psychologists, social workers, statisticians and field research workers.

People's attitudes to sex, like their attitudes to any other aspect of human life, do not crystallize in isolation, but are shaped and impregnated by the views of their fellow-citizens and by the whole structure of the society in which they live. That is why some enthusiasts for sex education live in a fool's paradise. Imagining that it is possible in a few lectures to overcome the influence of years of living in a society with distorted views of sex, they are due for disillusion. The best results will follow from sex education only when the whole of our society is remodelled, and our children grow up from the earliest days surrounded by adults who feel that sex is an excellent and joyous thing in which man and woman join as equal partners, sharing benefits and responsibilities alike. Meanwhile, our scheme of sex education must not be drawn up *in vacuo*, as if sex attitudes and sex behaviour were things fixed and immutable. If it is to be really potent, it must be sex education for our particular social setting.

FAMILY FOOD CONSUMPTION IN THE UNITED STATES*

A VALUABLE report has been issued* giving a detailed account of the analysis of data obtained in the United States during a large-scale inquiry into family spending and saving, of which food consumption returns formed a part. It also includes a useful discussion of the various techniques which can be employed in collecting data and the way in which choice of method may affect the picture given by the returns.

Since the United Nations Conference on Food and Agriculture focused attention on the responsibility of a government for the standard of nutrition in the area under its control, reports which describe in detail the way in which different countries conduct dietary surveys in their own territories should find a ready welcome.

The first essential is a basic stock-taking in order to obtain an over-all picture of the food resources of the territory and the nutritional requirements of the community. This provides the background against which more detailed surveys can be tested and on which plans for betterment can be based. There are, however, many territories for which such a simple balance sheet cannot yet be prepared, because the necessary basic data are not available. Imports and exports are usually known with considerable accuracy, but acreage under food crops and the yields normally obtained are not. In some areas there is no information regarding the total number of people forming the community, far less any details of the population distribution in terms of age, sex, and occupation. Without such information nutritional work can at best be only a patchy process, and is apt to be confined to the few more fortunate individuals who happen to come under observation.

A satisfactory balance sheet does not in itself ensure that all is well. It assumes that food is being distributed according to need, and that is a thing which rarely happens. For this reason continual surveys are required in order to provide information about distribution and the factors which determine it. There is no simple way of obtaining this information, and all the methods so far employed have decided limitations. Clearly the smaller the unit that is observed, the greater the number of records which must be kept if the results are to be used as an indication of trends in the community as a whole. Yet if the unit consists of more than one individual, the possibility of maldistribution still exists.

Usually the family has been chosen as the unit for observation. Maldistribution of food may (and often does) occur inside the family; but it nevertheless represents a compact catering unit, and the individuals composing it are on the whole subject to the same controlling influences.

The present study has taken the family as the unit and it claims to represent "the entire civilian housekeeping population of the United States". The distribution inside the sample is said to check very well with census data, but all breakdowns are given in percentages, and the actual size of the sample does not appear to be stated. It would, however, have been possible to handle a very large number of budgets as no direct measurements were undertaken.

In the United Kingdom, the Ministry of Food has run a continuous "War-time Food Survey" in which the investigators have visited the families and supervised all weighings and record-keeping. Since one investigator cannot cover more than ten families at a time (visiting on alternate days during the survey week) the number of records that can be collected is limited by the number of investigators available. It is, however, a method which involves direct measurement and it also affords an opportunity of assessing the relative effects of other influencing factors.

In contrast to this, the present inquiry was conducted as follows:

"Each housekeeping consumer unit interviewed was requested to give detailed food information for the previous week as well as the information on income and expenditure for all goods and services for the calendar year 1941 and for the first quarter of 1942."

A food schedule was provided listing 177 food items, and the information sought was (*a*) food bought during the preceding seven days—quantity and price; and (*b*) food eaten during the preceding seven days—quantity (specifying whether home-produced, bought, or other), and price. Among additional information required was "the number of meals furnished from home food supplies in the seven days covered by the food schedule for each family member, boarder, guest, or paid helper in the household".

The chief criticism against conducting an inquiry in this way is that it is too much in the nature of a memory test, and is therefore subject to all the frailties of that human mental process. The authors are not unaware of this weakness; they themselves say:

"The method used in this study to obtain food consumption data is, of course, subject to some error. It is not expected that the homemaker can recall with great precision the exact quantities of each of the kinds of food consumed. There may be some understatement and some overstatement that is not compensated for within a single schedule. However, it is believed that in the averages for fairly large

* Family Food Consumption in the United States. (U.S. Department of Agriculture, Miscellaneous Publication No. 550.) Pp. vi+157. (Washington: U.S. Government Printing Office, 1944.) 20 cents.

groups of families these are compensating errors, particularly for items consumed by most families."

The interpretation of the data, however, turns so much on this assumption that the errors are compensating ones that it would seem well worth while to organize a survey specially to test the truth of it. A memory test for impersonal facts might be expected to produce compensating errors; but food consumption is so closely linked with community culture and with individual likes and dislikes that the memory picture of food consumed must surely be subject to such influences and therefore liable to uncompensated errors. At present the justifiability of the assumption remains a matter of opinion.

The other major factor limiting the usefulness of this survey is the fact that it covers one season of the year only. The influence of this factor is, however, given due consideration in the discussion relating to each group of foodstuffs in turn.

On the sociological side the returns are grouped according to (1) urban, (2) rural non-farm, and (3) rural farm families, and then further subdivided according to income class. Differences were found, and these differences (in the records) are real, whatever the causes of them may be. As usual, improvement in dietary went up with improvement in income-level inside each main group and, as might have been expected, the biggest differences in the 'consumption patterns' were between the farm families and the urban ones. The rural non-farm families occupied an intermediate position. The authors point out that:

"Farm families had a better opportunity than non-farm families to maintain and improve upon their usual levels of food consumption in the face of rising food costs, food shortages, and reduction in the variety of foods offered for sale because such a large share of their total food supply was obtained from the farm."

It was found that 90 per cent of the milk, 95 per cent of the eggs, 60 per cent of the meat, poultry, fish, fats and oils, 25 per cent of the sugars and sweets, and 20 per cent of the grain products consumed by farm families were produced by themselves.

In terms of nutrients, the farm families' dietaries were superior to the urban ones in calcium, protein, riboflavin and iron, equal in thiamin and vitamin A, and inferior in niacin and ascorbic acid.

The intermediate position of the rural non-farm families is considered to reflect "the ability of many of these families to produce part of their food supply at home and to buy some farm products at lower prices than families in cities", in addition to the fact that they tended to be also of intermediate standing with regard to income.

To other survey workers possibly the most interesting part of the report will be Appendix B, dealing with the methodology. Family consumption records are always complicated by meals taken out and by odd meals given to visitors. The authors point out that "the size of family from the point of view of food consumption is not merely a count of persons, but a count of meals consumed by the persons in the family". For this reason they took the total number of meals served during the week, divided by 21, and called the resulting figure "size of family". 21 was used for the divisor because it was the usual number of meals served to each person each week. Meals taken away from home were not counted. This method of breakdown ignores age, sex and activity, and results obtained by it can only be used for comparative purposes if the communities surveyed are of similar composition. In this case the non-farm groups contained fewer children and men, and the physical activity of the adults was less than in the farm groups.

Requirements were assessed in detail in terms of "equivalent nutrition units". This is a modern variation of the old man-value computation. The use of man-value scales fell into disrepute because they were based on calorie needs only, and disregarded the fact that the requirements for other nutrients do not run parallel. Relative units can, however, be quickly calculated for any set of recommended allowances. In this study "the scales of relatives have been derived from the daily allowances for calories and the specific nutrients recommended by the Food and Nutrition Board of the National Research Council, May 1941. The dietary needs of the moderately active man were considered equal to one nutrition unit; the needs of the other sex-age-activity groups are expressed in relation to those of the moderately active man". Thus a girl of 13–15 years of age counts as 0·93 of a man unit for calories, 1·62 for calcium, 0·74 for riboflavin, and so on.

An alternative method of assessment is that which finds the requirements of the community by adding together the requirements of each sub-group and then divides the resultant totals by the total number of persons. This gives weighted requirements *per capita* and was the method used in the report, "Food Consumption Levels in the United States, Canada, and the United Kingdom".

In the present report, the data have been arranged and re-arranged in many different ways (there are forty-five very detailed tables), and in fairness it must be said that the authors do seem to have directed attention to all possible sources of error and to the limitations imposed by the methods they adopted. This is an attitude of mind that should be encouraged.

M. W. Grant.

OBITUARIES

Mr. E. Lancaster-Jones

The death occurred on September 9 after a short illness of Ernest Lancaster-Jones, keeper of the Science Library. He was born at Radcliffe on November 8, 1891, and was educated at Bury Grammar School. Later, with a mathematical scholarship, he proceeded to Christ's College, Cambridge, and graduated in 1914.

In 1915 he was commissioned in the East Lancashire Regiment, transferring in the following year to the Royal Engineers, with which corps he served for three years in Greece, Macedonia and Egypt. In 1916 he married Geraldine Hilda Anne Farnham, of Burnham-on-Sea, who died in 1942.

In 1920 Lancaster-Jones was appointed assistant at the Science Museum, where he performed valuable work assembling and developing the collections of acoustical and electrical instruments, on geodesy and surveying, and was responsible for the Museum handbook on the geodesy and surveying collections, which appeared in 1925. The introduction from Budapest to Britain in 1920 of the first Eötvös torsion balance provided a unique opportunity for studying the gravitational method of applied geophysics, and Lancaster-Jones devoted himself wholeheartedly to the development of this subject. Frequently, investigations could only be made during the