

NUTRITION AND HUMAN WELFARE

REPORT OF THE PAN AMERICAN COMMITTEE ON
NUTRITION*

Our knowledge of the number and chemical nature of the nutrients for the maintenance of a high standard of health, their distribution in natural foods and the symptoms caused by deficiency or lack of one or more of them, is the result in great measure of experiments on animals. So also has the spectacular contrasts between the effects of good and poor diets in animals led to interest in the application of the new knowledge to improvement of human health through improvement in the nutritional status of people wherever malnutrition is found. In the earlier years of the study of human nutrition problems the primary interest was in finding out the nature and extent of inadequacy of dietaries in various regions where health impairment was known or was suspected to exist because of inadequacy of the food supply. In fact this is still true, as is made clear by an examination of the kinds of nutrition studies which are being published in several countries. Further nutritional surveys, and demonstrations of the benefits which may be achieved through dietary improvement are of high value in that they serve to arouse interest in doing something about the problems relating to food and health.

As nutrition problems in various geographic areas have been studied it has become evident that knowing what the trouble is, and what should be done to remedy situations which exist, serve only to confront us with economic, agricultural and administrative problems, for which, in many instances no easy solution presents itself. It is my purpose on this occasion to mention some of the topics which should be given consideration in this conference in order that we may progress as rapidly as possible in formulating comprehensive programs for achieving our objectives in nutrition improvement in different parts of the Americas and their adjacent islands.

A common cause of dietary inadequacy in man is the devotion of the agricultural resources of an area too largely to the growing of a cash crop such as tobacco or sugar, and too little attention to the growing of food plants for local consumption. In the past the temptation to grow cash crops and to neglect food production has been so great that change has been difficult to bring about. However, the facts which can and are now being used to demonstrate health significance of an improved food supply should make it easier to change agricultural practices in the desired direction. When people realize that their health standards can be raised by dietary improvement, change of attitude toward the uses of the land are certain to be more easily brought about than was possible when such knowledge was not available. It is not clear how the diversion of much land to food production in areas where the economy has long been based upon an export trade in a cash crop can be accomplished without lowering the income of the area owing to decreased production of the cash crop which would follow decreased acreage devoted

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to it. If the sales volume and monetary return from the accustomed cash crop are reduced the economy of the area attempting dietary reform may be disturbed both as to crop sales and to imports. Such considerations must receive the attention of economists and agricultural experts before large scale programs can be mapped out.

It is a matter of common knowledge that the Americas produce large surpluses of foods for export to Europe when conditions are normal. But in both North and South America, Central America and various islands near our continents portions of the population cannot meet their food needs. In general it is the temperate zones which are the areas of excess food production. Our Southern States, Central America, the Caribbean area and Tropical South America, have until now not generally been self-sufficient in respect to food growing. In these areas it would seem that increased production of certain foods is likely to be sound from every point of view. This can doubtless be accomplished without in any degree disturbing the normal flow of wheat, flour, rice and other agricultural products from temperate toward the warmer areas. If increased transport of foods to Tropical areas is to be made possible, there must be an increase in purchasing power of the inhabitants in order that they may buy them.

Wherever people do not have sufficient of the right kinds of foods increased local production may well be advised with the expectation that the increased food consumption resulting from gardening by the family will not reduce their food purchases significantly because home production will generally not increase the supply to an extent greater than the deficit in nutrients which brought the family to a state of inadequate nutrition.

In areas where there is abundance of foods, the supply being fully adequate after satisfying the export markets, there is frequently found to be an element in the population which does not find the means to secure its quota of foods for adequate nutrition. Again it is an economic problem. Prospects indicate that in the post-war period a greater effort than has ever before been made will be put forth to develop cooperative relations between nations. The importance of the food problem, which means agricultural problems distinctive and sometimes unique in several types of geographic environment, character of soils, transport facilities and the economic factors which enter into such transport, overshadows in importance other aspects of the health problems associated with the food supply.

There are certain areas, of which Puerto Rico is an example, where the population density is so great that the food problem has become one of special gravity. There the economic problem is the primary one under conditions of unhampered shipping, when much sugar and tobacco are exported and much food is imported. Such areas must be carefully studied to determine the wisest policy relative to the

production of non-food crops, or cash crops for export, and the utilization of the land for food growing for home consumption. Both economic and sociological policies are involved in the alleviation of the dietary situation.

The problems of food production, food transportation, and fair distribution to all population groups irrespective of their economic status, are mentioned and emphasized here before discussing the problems of education of the people in matters relating to food values and the selection of foods so as to provide fully adequate diets, because one of our most fundamental problems is the conservation and utilization of the land to the best possible extent, one feature of which program is the production of an adequate food supply. We have many examples in recent decades of the introduction of greatly improved efficiency in certain types of agriculture. We must have food production and the facilities for its distribution in commercial channels before we can attain success in other features of the broad nutrition program. This means that, since every important food plant is temperamental as to soil type, temperature range, hours of sunshine, amount and distribution of rainfall, each can be grown only under certain conditions. The distribution of foods necessitates the maintenance of trade communications. Especially in the warmer areas of the world there must be importation of several kinds of food staples. In general such food exchanges are desirable or necessary in other parts of the world, even where diversified agriculture flourishes.

The Application of the Science of Nutrition to Health Problems.—

We now possess a most valuable body of knowledge concerning the nature and occurrence of the essential nutrients, the amino acids derived from proteins, the mineral elements which participate in physiological processes, the vitamins, the essential fatty acids, the caloric needs of people living under different conditions. We have much information of practical value as to the stability of certain vitamins as affected by light, heat, exposure to oxygen, etc. But we still have much to learn about almost every one of our more important foods. One highly important field of inquiry where there are serious differences of opinion among the most distinguished authorities, is the minimum allowances of various nutrients for individuals of different ages, variously occupied in work at different degrees of energy expenditure, at different temperatures, and for different working periods, which are compatible with the maintenance of high health standards. There are now available many carefully collected data which show that the nutritive needs of pregnant women and of nursing mothers are not being provided in the case of large numbers of women.

Where people live under conditions of relative abundance and have incomes sufficient to enable them to buy sufficient milk, meats, fresh fruits and vegetables, as well as canned, cold-stored, or frozen foods, there is no difficulty in securing fully adequate diets. The necessity for the inclusion of sufficient of the more important protective foods for the purpose of supplementing cereal and other staple foods is now well known everywhere among informed people. But the diets of many millions of peoples in various parts of the world are now, and for long

must continue to be simple and monotonous, and of rather low palatability. It is the improvement of such dietaries to the maximum extent and in the most economical way that constitutes one of our pressing nutritional research problems.

As respects the correction of deficiencies such as iodine, iron, calcium, or other mineral element there is the possibility of direct addition of the substance to some staple food such as a cereal flour or meal. We have vast vitamin resources in the polishings of rice, in wheat germ, corn germ, brewer's yeast and other yeast and yeast concentrate, in immature leaves of several plants which might be dried and powdered and used as adjuvants to foods which are good sources of energy and protein but are deficient in vitamins. The cereal grains being eaten generally in the form of their milled products stand in need of this type of supplementation.

As respects the protein moiety in the diets of simple and monotonous character which are of the lowest cost type and sustain vast numbers of people in many areas, we are justified by recorded observations in making the generalization that it is of relatively low biological value. Cereal products and beans are often the main sources of dietary proteins. We need further studies to discover, if possible, some sources of protein suitable for inclusion in the human diet, which has high supplemental value for the proteins of white wheat flour, polished rice and corn. At present the most effective source of such supplemental protein for wheat flour in foods of vegetable origin seems to be soy bean protein. It is also known that yeast proteins improve the utilization of flour proteins, and that two per cent of dried yeast serves this purpose well.

In this connection it should be mentioned that if it is economically practicable to include moderate amounts of meat, milk or egg in the human diet, this is the procedure of choice for enhancing the biological value of the vegetable proteins which will in general form the principal source of protein. But there is every prospect that for large elements in many populations it will not be economically practicable to supply these more expensive sources of proteins and other nutrients in the near future. Hence the advisability of carrying on further researches to discover the most effective supplemental protein sources in foods of vegetable nature.

Whereas in several countries in Europe and Asia it appears that the utilization of land resources has already reached its maximum potentialities, it is clear that in neither of the Americas is this true except in certain islands. Indeed there are yet great opportunities for expansion of agriculture in certain areas and for the introduction of better farming methods, and also for systems which will make possible the production of two crops per year from the land. Our consciousness of the significance of making the right combinations of foods in order to secure diets of good to superior quality, will induce such planned land utilization by planning for the production of crops which yield the most valuable food combinations.

In offering these suggestions for further researches on certain aspects of our food problems, one is conscious that we are still inadequately informed concerning the needs of people in many areas. The first objective, after recommending extension of specific researches of a fundamental scientific nature, such as those dealing with various aspects of each of the essential nutrients, is inquiry into the nature and extent of dietary deficiencies wherever these occur. Such knowledge forms the

best foundation for future planning for improvement of human dietaries. Dietary surveys are at the present stage of our progress of considerable value since they delineate the nutrition problems of an area, and they serve to stimulate interest in formulating a plan of action.

In looking forward to a long time program of educational work designed to improve dietaries great emphasis should be placed upon the education of as many as possible young women in nutrition and dietetics. The teaching of nutrition to all children of school ages is not only an effective means of preparing the rising generation to appreciate the importance of right eating for safeguarding health, but also of directing the adult members of the family to the new knowledge and its significance.

Much progress has already been made in educating the employers of labor to an understanding of the improvement in service which may be achieved through bettering the health of industrial workers. The extent to which fatigue may be reduced or alertness and aggressiveness increased will depend, of course, on the extent of malnutrition of the worker, but observations on industrial groups seem to leave no doubt that there are considerable opportunities in this direction in certain population groups. We need much more inquiry in this field.

Obstetricians and pediatricians are becoming convinced that they have an important contribution to public health to make through the application in their medical practice of the newer knowledge of nutrition. It is clear that a great many infants might be born better endowed with physical vigor than is now the case, and the literature of pediatric research clearly indicates that there is still a relatively large number of infants who are not fully protected against such easily preventable disorders as rickets and scurvy, although extraordinarily great progress in safeguarding infants and children against these defects due to malnutrition has occurred in two decades.

There is much interest at present in the study of the symptoms and the chemical and other tests by means of which the earliest signs of a score of specific types of malnutrition may be recognized. Such studies are primarily of interest to the physicians and the biochemists. The researches bearing on this field of inquiry cannot be praised too highly, for they are certain to have far reaching results.

One should not fail under present conditions to mention in this conference the special nutritional problems which have confronted nations because of war. The concern about the adequate feeding of military forces is greater than in any previous war. The finding of ways and means for improving the health of workers in war industries has occupied the attention of both military men and industrial executives. Both of these undertakings are of primary national concern.

The critical situations respecting food production and food allocation for different population groups has necessitated food rationing. Limitations of supply of certain foods and their strategic importance have made necessary price control. It is not possible for those participating in this

conference to deal with all the aspects of the food problem. I have attempted to set before our conference the more obvious and important objectives toward which we must apply our efforts. A new department of knowledge, the knowledge of the role of diet in relation to health, has come to stand abreast of the hitherto recognized public health problems such as the control of communicable diseases, improvements in sanitation and the control of epidemics. Already, through the widespread prevention of rickets and scurvy in infants, children, and the armed forces, and the reduction to a considerable degree in the incidence of beriberi and pellagra, outstanding achievements in the field of public health have been realized. There are still fields to conquer through the agency of foods. We have come together today to report new researches and to discuss several of the larger problems in nutrition in which we are mutually interested.

REPORT OF THE PAN AMERICAN COMMITTEE ON TYPHUS*

The Pan American Sanitary Bureau considering the public health importance of typhus and the other rickettsias diseases in the Americas because of their extensive distribution (the presence of typhus has been already proven in fourteen countries and various foreign possessions in the hemisphere) and its high incidence in certain regions; and in accordance with the resolutions of the Pan American Sanitary Conference in Rio, September 7-18, 1942, has organized the Pan American Committee on Typhus for the study of this disease and the other American rickettsias.

In Rio de Janeiro studies of the disease were suggested also along the following lines:

1. To determine the various rickettsial diseases existing in each country.
2. To study the reservoirs and vectors of the rickettsias found in each country.
3. To present the conclusions of their work at succeeding conferences.
4. That the Health Authorities in the regions in which typhus is found and where there are Indian populations attempt to secure the cooperation of these populations through the activity of nuclei selected among the Indians themselves as the most direct and efficient means of lasting public health results.

The Pan American committee on Typhus plans to study:

The epidemiology of typhus and other rickettsias found in the continent in order to determine the series of factors which make their existence possible in nature.

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