

should give to the civic-minded reader a basis for appraising the syphilis control facilities in his own community and for stimulating provisions for their improvement.

A review of *SHADOW ON THE LAND* would be incomplete without reference to its biographical aspects. Quite apart from its value for educational purposes, the book deserves to be read as an entertaining account of the experiences of a hard-working and enthusiastic health official who devoted several years of full-time service to the subject he deals with and whose activities have carried him over the width and breadth of the United States and into other countries.

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### EVER-NORMAL NUTRITION

IN 1925 at the instance of the Yugoslav delegation, the League of Nations through its Health Organization took steps towards examining means of regulating, from a public health standpoint, the manufacture and sale of food products. Meeting a request from the French Government, the League extended the program three years later to include the subject of nutrition. Now as an outgrowth of this and other inconspicuous incidents,<sup>1</sup> the Mixed Committee of the League submits its final report on the Relation of Nutrition to Health, Agriculture and Economic Policy.<sup>2</sup> This report, then, is significant as much for what it represents as for what it contains. Behind it we see why this afterthought of the program developed into the main enterprise, a development which was as natural as it was inevitable. For the science of nutrition with its newly-established system of principles and facts had become available for fuller application at a period of intense need, arising from a world-wide nutrition problem which, although probably always present or imminent, was now the more disturbing because attention had been focussed on its severity and extent by the world economic depression.

<sup>1</sup> Limits of space prevent a full description of the League's early work in nutrition, which included a study of the food of Japan, a survey of nutrition in Chile, and the publication of a volume on Nutrition and Public Health.

<sup>2</sup> Final Report of the Mixed Committee of the League of Nations: *THE RELATION OF NUTRITION TO HEALTH, AGRICULTURE AND ECONOMIC POLICY*. 327 pp. Series of League of Nations Publications, Geneva. II. Economic and Financial. 1937. II.A. 10. New York, Columbia University Press, 1937. \$2.00

Using the firm ground of a physiological approach, the League through its technical and expert committees considered methods of determining impaired nutrition and formulated dietary standards and requirements. Moreover, in a world with abundant food production, glutted markets, falling prices, but with prevalence of serious malnutrition, economic aspects could not be neglected. Apparent to the Mixed Committee on the Problem of Nutrition, comprising agricultural, economic, and health experts, and labor and social representatives, was the need for a policy ". . . at once to benefit agriculture and promote public health . . ." It is in this setting that the present report took form. First, however, from data at hand, and from national reports on agriculture and industry, the several aspects of nutrition were embodied in an interim report of four volumes.<sup>3</sup> In this, the dietary and physiological considerations were fully discussed; but the economic and agricultural aspects were only briefly mentioned. Although the first part of the final report describes the influence of an improved dietary upon public health and the second restates the basic principles embodying the science of nutrition, the third concentrates upon the economic and agricultural aspects.

Against the historical background of human dietary experience sketched in Part I, the nutritional principles enunciated in Part II stand out as guide-posts for coming development. By setting out the essential dietary factors, by listing their sources with distinction between calorigenic and protective foods, by describing the diseases attributable to a deficient regimen, and by specifying the dietary requirements for protection against these diseases, Part II presents clearly and succinctly the case for better nutrition. Pointing to the need for standards of optimum rather than minimum nutrition, the report rightly emphasizes that, because of increased demands on physique under certain environmental circumstances and during "sensitive" periods in life, nutrition then must be especially safeguarded. Such emphasis, it may be added, should not create indifference to the ordinary course. In bringing the science of

<sup>3</sup> Interim Report of the Mixed Committee of the League of Nations:

Volume I. INTERIM REPORT OF THE MIXED COMMITTEE ON THE PROBLEM OF NUTRITION. (Ser. L. o. N. P. 1936. II. B.3) 98 pp. \$0.50.

Volume II. REPORT ON THE PHYSIOLOGICAL BASES OF NUTRITION. (Ser. L. o. N. P. 1936. II.B.4) 27 pp. \$0.15.

Volume III. NUTRITION IN VARIOUS COUNTRIES. (Ser. L. o. N. P. 1936. II.B.5) 271 pp. \$1.40.

Volume IV. STATISTICS OF FOOD PRODUCTION, CONSUMPTION AND PRICES. (Ser. L. o. N. P. 1936. II.B.6) 110 pp. \$0.75.

nutrition into brief compass, the Committee is to be commended for achieving conciseness with so little loss of precision. To these features it has added the stamp of authority.

Throughout, the monograph is written from an international standpoint, a fact which for the most part enhances its usefulness. In some instances, however, this approach may give rise to certain misapprehensions. In Part II, in enumerating diseases presumably related to diet, the report at times identifies the countries in which such conditions prevail, but more often, for reasons that are valid, draws no distinction. For instance, puerperal infection, cited as one of the commonest causes of maternal mortality, is ascribed in some instances to surgical intervention because of contracted pelvis, a deformity which in turn is attributed to malnutrition, so that to faults of nutrition is assigned no little influence on the maternal death rate. While this is undoubtedly true in some countries, in the United States contracted pelvises are so rare as to contribute negligibly to puerperal infection.

On the premise that prevention rather than treatment of disease must receive more and more emphasis, the report introduces two concepts which seem destined to loom large in the application of improved nutrition. One indicates a new arena; the other, a new aim for health workers. As diagnostic methods improve and dietary surveys yield their inferential support, the combined evidence has strengthened the impression that "much more common [than the recognized deficiency diseases] are the latent states of malnutrition, which may give rise to no visible disease . . ." This concept is by no means new, nor is it fanciful; for years the existence of a latent form of tetany has been an accepted fact. Probably these latent states represent either the incipient stage or a mild chronic stage of the disease. In either event, the menace is twofold: it may go on to the full-blown condition or remain persistently but obscurely in a chronic state. This zone, variously described as "borderline, prodromal, pre-deficiency, or suboptimum nutritional state," becomes marked as the next point of attack. Many believe that this condition is fairly common and are devising and evaluating tests by which to detect it. The goal beyond this is definite: "The opportunity that lies before the science of preventive nutritional medicine rests upon the knowledge that these states exist and upon the proof of the necessity for striving after *optimum* nutrition rather than *minimum* nutrition. . . It has been observed that nutritional research will exercise a greater influence in preventive medi-

cine by increasing the vitality of the human species, with all that implies, than by preventing the frank 'deficiency diseases.' . . . Preventive action against such nutritional diseases as scurvy, rickets, and beri-beri, although superficially more impressive, is probably of less importance to the human race than the acquisition and application of such knowledge as will also improve the general condition and well-being of every man, woman, and child, through the better choice, provision and utilization of foodstuffs." It is scarcely necessary to note that this objective, applying as it does to nutrition, is not advanced to conflict with or supplant existing aims in public health; rather it is directed towards heightening those aims in order to enlarge and enrich their usefulness.

Because food is a factor affecting the health of every individual, nutrition becomes a concern of public health. If the relationship between food and nutrition were solely within the province of preventive medicine, improvement in the state of nutrition among the world population would still be a matter of no little magnitude. But the distribution and availability of food are influenced by a number of economic and social factors. So the report takes us almost imperceptibly from public health into economics where it is so easy to become confused. It is the merit of this report, however, that by skillful simplification it succeeds in clarifying and illuminating what is admittedly a complicated and difficult subject. Nutrition and health, it states in Part III, depend upon diet as reflected in food consumption; agricultural and economic factors, in turn, largely control food consumption. When we list all the elements which enter into the agricultural and economic systems, together with the movements afoot in the social order, and when we try to follow their interplay, we reach not one but many concatenations. It is not necessary to calculate mathematically the possible combinations in order to realize the intricacy of the economic structure. Take the matter of tracing the trends in food consumption—although any other question would put us in the thick of it—the Committee gathered evidence indicating that populations have been changing their food habits for the better. To this progress, three factors have contributed; advances in agricultural production and distribution, increased incomes, and better understanding of dietary needs. Inasmuch as the interests of agriculture in food production and of the public in food consumption are so inseparably linked, it is particularly encouraging to find that progress in nutrition has not been at the expense of agriculture. Although the change in food habits

has brought in its train problems as well as advantages, agriculture, it is stated, did adjust itself to the trend.

This improvement in nutrition, as reflected by dietary habits, is still a trend and not an achieved end. As yet it has moved all too slowly and has covered all too little ground. Despite the favorable change in food habits, the report piles up the evidence of widespread malnutrition throughout the world. Although some may deprecate its accusation as too sweeping and profess skepticism over certain details in the evidence, they will find it difficult to deny that malnutrition, in almost all nations, is no idle and unpleasant threat, but an undesirable and unnecessary actuality. In order to lessen, if not eradicate, this malnutrition and raise nutrition to its proper level, the Committee points to the need of accelerating the present trends in food consumption. This is the "nutrition policy"—to modify and increase food consumption—which the report sets forth and to which it refers again and again.

The attempt to increase and modify food consumption will not, the Committee predicts, run an unimpeded course. The nature and extent of food consumption is a resultant of opposing groups of forces. It reached its present level through the predominance of certain favorable factors; it might have risen to a higher point if opposing forces had not reacted against them. Continued opposition may be expected, and upon the outcome of the reactions will depend the amount and kind of food consumption. The principal factors in this continuous conflict, determining food consumption, are: food prices, income, and education.

In the present dietary trend, advances in agricultural production and distribution have brought lower prices which have stimulated food consumption favorably. For lower food prices, other factors being equal, "tend to result in an increase in the consumption of productive foods." Higher prices, on the other hand, "are likely to have the opposite effect;" indeed, the report shows that price increases were so associated with a decline in consumption of protective foods that they must be counted as a factor in limiting the present trend. But to say that price level influences food consumption is to over-simplify the issue, for price may be resolved into an opposition of reacting forces. What determines the price of a commodity is primarily the law of supply and demand. In this instance, food consumption is a measure of demand. To indicate now that food consumption influences food prices, after having stated in the preceding paragraph that the reverse relation operates, is not a seeming contradic-

tion, but an illustration of their reciprocal nature. According to the report, the factors acting in a positive manner to create and sustain demand are income and education. Opposing these are the factors determining the food supply: production costs, custom tariffs, crop restriction, and distribution charges. Moreover, many "external" factors, such as the supply of and demand for gold, are said to influence prices. Of these factors, the ones contributing most to the maintenance of high prices and thereby checking food consumption, are on the supply side.

Level of income, considered in relation to prices as purchasing power, is likewise examined for its effect upon food consumption. Thus the total outlay for food is said to increase with total income, the result being improvement both in quantity and quality of the diet. Just as high incomes favor more adequate food consumption, low incomes predispose to inadequate food consumption. Citing the consequences of disparity between food prices and incomes, to say nothing of poverty, the report calls attention to the prevalence of "incomes so restricted that purchase of an adequate diet becomes an economic impossibility." Moreover, from data on families in the large cities of the United States, the report draws the conclusion "that considerable proportions of the employed population, and particularly of the negro families, in most of the towns were suffering from malnutrition owing to insufficiency of income."

Education, as a determinant of food consumption, applies to those who are in a position to select their own diets, but especially to the few in family groups who are responsible for the dietary habits of many others. For both groups, education as here used signifies the capacity to acquire knowledge of food values, as well as opportunity to obtain this information and the initiative to use the opportunity. For the homemaker, it includes the ability to apply such knowledge with available financial means in such a way as to make for effectiveness and economy in food allotment. As the report emphasizes, education is a most potent factor. For, at an income level so low that it is questionable whether it will provide an adequate diet, the report reveals that some families successfully meet nutritional requirements, with education as the decisive factor. As a matter of fact, in contrast to an increase in income which benefits mainly those in the lower income group, education helps all groups. It is indeed indispensable to proper nutrition; but, in the opinion of the Committee, its potentialities fall far short of full realization. On the other hand, the report shows that even when income was more than

ample for proper food, ignorance was found to have forfeited this advantage with disastrous results.

It is apparent, the report states, that attempts to raise the level of food consumption both in quantity and quality, as a stimulus to the present trend towards improved nutrition, will face the three obstacles: high prices, poverty, and ignorance. At first glance it would seem desirable to bring about conditions that will surmount these obstacles. Such would be low prices, higher incomes, and education. But far from accepting forthwith this concept, the report turns to examining its effect on the other party in the agricultural-economic system—the producer. If a nutrition policy is to be of lasting benefit to the public, it must, because of the inescapable interlocking of interests, involve a minimum of untoward consequences for the producer; for such consequences, together with their repercussions, would strike producer and consumer alike. In principle, an increase in food consumption would seem designed to promote agriculture as well as nutrition. In practice, the effect on agriculture may not always take such a favorable turn.

So far as a nutrition policy would modify crop structure, it is believed agriculture could probably make the necessary adjustment. But in any contemplated change in food prices, the report advises deliberation and caution. The farmer's income depends on cost of production, volume of sales, and price. The effect of a nutrition policy in promoting food consumption by higher incomes and education would create no detriment to farmers, so long as price was maintained. But lowering food prices as a means of stimulating food consumption, with no compensating reduction in production cost, might bring about, the report warns, such a reduction in farmers' income that the impact would be felt in the industrial market with the familiar train of lowered wages, unemployment, and malnutrition.

The monograph is so informative and inclusive of essential facts that it almost seems gratuitous to point to any imperfections. There are, however, one or two. The title is not technically accurate since there appears to have been a tendency to confuse food and nutrition which resulted in a faulty causal nexus being drawn between nutrition and health. Although there is authority for applying the term nutrition indiscriminately to either nutriment (food) or the bodily process which it supports, many prefer to restrict it to the latter usage. Such a distinction is often convenient. Nutrition and health are then regarded as independ-

ent attributes of the body, which are influenced, usually simultaneously, by food. Accordingly, the title might read more accurately "the relation of nutrition and health to agriculture and economic policy," with the understanding that food is the pivotal point between the state of the body and its economic world.

In a sentence exalting the merits of protective foods in "increasing . . . resistance to many diseases (*e.g.*, scurvy, beri-beri, rickets and other bone defects; dental caries; tuberculosis and bronchial pneumonia, which so often develop from measles, whooping-cough and other children's diseases; and also to such conditions as anemia, night-blindness, etc.)," the indiscriminate listing of these diseases connotes a similarity in their relation to diet which is not borne out by the facts. These diseases fall into two groups: the deficiency diseases, such as xerophthalmia, scurvy, beri-beri, rickets, and anemia which result directly as a specific reaction to a deficiency in the respective dietary constituents, and the other group, including diseases of infancy and childhood, which many *believe* develop in the debilitated state created by moderate or severe *undernutrition*. In the one, diet is the direct and specific cause; in the other, if it may be said to have any influence, it operates as a predisposing, aggravating, or precipitating factor. To ignore this distinction is to confuse the function of diet, its mechanism, its proper place in prevention and therapy, and its intelligent application.

Moreover, there is a vast difference in the available knowledge about the relation of diet to the two groups of diseases. Deficiencies in diet as the specific cause of the first group have been rigidly demonstrated; a deficiency invariably produces its specific effects. In the second group, the relation of diet is still a matter of opinion and not of fact; undernutrition does not invariably produce these diseases.

The report, with statistics and facts assembled from many nations, is lucid, thoughtful, and impressive. What may be a revelation to some is that such a report can be so readable. Distinctive in purpose, nature, and scope, it may well become the source and guide of new developments in the field of human nutrition. As conditions common to all nations, it indicates the undesirable coincidence of malnutrition and agricultural depression. Despite any doubt or disagreement over the methods of assessing undernutrition, the weight of evidence which it presents concerning the extent of undernutrition is not easily dismissed. Inasmuch as the report is predominantly economic in nature, it is here that it marshals



an imposing array of data in describing the perplexing rural problems. Although the Committee protested against discussing one point because it would entail writing the economic history of the world, they have performed a task of little less magnitude—the structure and status of rural economy in the world today.

If the Committee had been content merely to describe existing conditions and problems, their report would still have fulfilled a mission. But they did not stop at that point. Throughout, as the report has pointed to a difficulty, it has at the same time indicated what was needed to overcome that difficulty. This feature alone adds immeasurably to its value. By far its most important contribution, however, is a series of practical and constructive suggestions for action. Hidden in the section of Part I on summary and conclusions, these proposals might go unnoticed. As it is, the space devoted to summary is negligible, and if there be conclusions, they are not the narrow, obvious outcome of syllogistic devices. Instead they are definite recommendations, broad in outline and general in nature as they must needs be if they are to be adaptive to wide and varied use. In no sense are they either official or exclusive methods which must ultimately be used. As improvement in world nutrition is sought, together with stabilization of agriculture, it will be worth while to watch what effect any of these or other proposals will have on a world which, in its bewildered state, has just come to realize that the horn of a cornucopia may be the horn of a dilemma.

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