the district courts of the United States. No person shall be excused from complying with any requirements under this section because of his privilege against self-incrimination, and the immunity provisions of the Compulsory Testimony Act of February 11, 1893 (U. S. C., 1934 edition, title 49, sec. 46), shall apply with respect to any individual who specifically claims such privilege. Any person who willfully violates any order, rule or regulation promulgated by the Administrator under the authority of this Act, shall, upon conviction thereof, be fined not more than $5,000 or imprisoned for not more than one year, or both.

PERIODIC REPORTS

SEC. 11. The Administrator shall render a report in writing to the President and to the Congress in January of each year summarizing the activities of the Office in the calendar year just ended and reporting on the status and progress of science and on scientific and technical problems affecting the public interest together with such recommendations as he may deem appropriate within the purposes of this Act. During a state of war, he shall make interim reports quarterly during each of the months of January, April, July, and October.

SEVERABILITY CLAUSE

SEC. 12. If any clause, sentence, paragraph, or part of this Act shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder thereof but shall be confined in its operations to the clause, sentence, paragraph, or part thereof directly involved in the controversy in which such judgment shall have been rendered.

SOME OBSTACLES IN THE PATH TOWARDS AN OPTIMUM DIET. II

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(G) *Poverty.* Many people are undoubtedly inclined to put poverty as obstacle No. 1, even on the road to a good or adequate diet not to say an optimum diet, and I am not quarreling with the relative importance of any of the factors, as I indicated in the beginning. Whatever the percentage of truth there is in the view that forty million, even a hundred million, Americans are badly nourished, there can be no doubt that financial handicaps may be serious enough to prevent the purchase and consumption of food adequate for good health. And even if only one per cent. of our fellow citizens belong in this category in this land of abundance of good foods, that would be a reflection on our wisdom and our competence. But among men, as among animals below man, securing food without labor, without scratching leads in the long run to deterioration.

Among the wants and fears of man in many lands are the lack of good foods and the fear of starvation. Sir John B. Orr, the British war-time food administrator, has recently proposed that this seemingly simple aspect of the "Atlantic Charter" should be our primary concern. But even this is by no means simple. For in absence of epidemics, all species, man included, tend to reproduce beyond the limits of an adequate food supply for all. So a necessary corollary to freedom from the want of good food, and freedom from the fear of starvation everywhere, is planned parenthood. To me at least, this seems as humane, reasonable and necessary as our civilized and scientific endeavors to prevent and control the other form of universal human suffering—disease.

The financially poor, the financially unfortunate appear to have been with us throughout recorded history. The common saying is: "The poor will always be with us." Maybe so, at least in a relative sense. For there is also poverty in foresight and poverty in individual endeavor. In so far as this is due to poverty in heredity, common sense seems to say that, as knowledge grows, we must apply new measures to decrease the production of chicks that chirp but can not or will not scratch. Unless reason based on understanding effectively guides social evolution of tomorrow in that direction, I see no escape from the degeneration that invariably follows biologic parasitism, except the ancient "law of tooth and claw." The killing of millions of pigs for fertilizer, and restricting the production of such important foods as wheat and corn, all by Federal regulation, do not (in my judgment) square with our concern for an optimum diet of man (the poor included), even in our own land.

(H) *Appetite.* We know to-day very much less about the precise mechanism of appetite for food than we know about the mechanism of hunger, but stated briefly, appetite for food in contrast to hunger does not seem to be primarily inherited. It seems to be a memory of previous pleasant experiences with foods, pleasant experiences in the sense of taste, odor and visual appearance of foods. One fact stands out clearly in the matter of appetite, and that is this: All normal people seem to be able to acquire a liking or appetite for any kind of substance that can serve the nutrition of man. This, I think, is a factor of safety as well as a factor of danger for the human dietary.

The factor of safety appears in the human capacity for omnivorousness, that is, consumption of a great variety of foods. The dislike for or actual revulsion to a monotonous diet is a drive towards variety, if not omnivorousness in foods. There is no doubt that this tendency or habit of omnivorousness will in part explain the dietary success of our forebears and of wild animals, in the absence of specific understanding of food requirements. On the other hand, there is danger in combining the products of human ingenuity in the matter of food processing and food preparation with the capacity to develop liking for foods that are so defective in essential elements that when they are made a preponderant part of our diet, we may develop serious malnutrition. Three of such common foods today are the refined sugars, polished rice and bread made out of our modern patent flour. These are good foods. We can, and we have developed appetite for them, but because of refinement, they are so defective in many essential dietary elements that they can lead, in fact they have led, to nutritional disaster when they make up too large an element in our overall food consumption. I think it is particularly important to recognize the safety in dietary omnivorousness, to recognize the fact that we can and should develop liking for, that is appetite for, a great variety of foods as soon as feeding at the breast or by bottle is supplemented by the common foods of man, because these likings or appetites are probably most easily established in the early years of life. When good food is abundant the gray squirrel eats the germ in the grain of corn and discards the rest. We eat the rest and discard the germ. The pregnant and lactating squirrel (a herbivore) eats bones, when she can get them. So do cattle (other herbivores) ranging on land poor in lime. We do not know when or how these primitive appetites were lost to or suppressed in man.

The vagaries of appetite may lead to malnutrition in two directions. It may lead to eating too little (anorexia nervosa) or eating too much. The chronic and serious depression of appetite usually has a psychological basis both in children and in adults; in fact it may follow a period of such great appetite that the person is eating to marked obesity. The criticisms and the ridicule of this obesity by the obese person's friends and associates may ultimately bring on such a mental state that for weeks, months and years, the eating of the very best of foods leads to vomiting. Fortunately these cases are not numerous, but obviously the cure here is neither more money, more food or better education as to foods. Perhaps the most serious aspect of the vagaries of appetite as an obstacle on the path towards optimum nutrition is that condition where the pleasures at the table so dominate in the individual's life that eating to the point of obesity follows. To be sure obesity may parallel an incipient malnutrition of factors other than calories in the diet, but I repeat, in the experimental animals at least, chronic deficiency in any one essential dietary factor impairs or retards both growth and weight. Since obesity is more than twice as prevalent in the American population as is underweight of equal degree, maybe we should give more attention than we have up to date to this aspect of malnutrition because, depending on the degree of obesity, this condition is a strain on the body reserves, renders man less fit for many tasks, and shortens his life span.

(I) *Chronic alcoholism.* As a food alcohol is among the most defective and most expensive of our foods. Curiously, alcohol in moderation is not infrequently taken before or with the meals with the avowed purpose of easing or aiding appetite and digestion. No animal below man seems to need this stimulus, although it is proven that moderate amount of alcohol does increase the secretion of gastric juice whether or not we need that increased amount of gastric juice. It is well known that alcohol, acting both on the alimentary canal and possibly also on the central nervous system, may induce temporary nausea, vomiting, anorexia and intolerance for foods. This is not a serious aspect when we think in terms of malnutrition. This comes in only in the case of those people who indulge in alcohol to excess and so constantly that consumption of food for adequate health is impaired, presumably by impairment of brain function, although action of chronic alcoholism in this direction on the alimentary canal and other organs of the body can not be excluded. Obviously the cure of this form of malnutrition lies neither in supplying more or better food or more cash for the latter would be likely spent for more alcohol. This malnutrition is obviously secondary to chronic alcoholism and this in turn may stem from hereditary as well as social forces that so far as we know to-day do not spring from any form of malnutrition.

(J) *Myopic federal state laws and regulations limiting free production, transportation and sale of good foods.* A writer has called these federal and state laws and regulations "state barriers for starvation." I have before me a list of these federal and state penalties on good foods. There is a federal tax of ten cents per pound on colored margarine. This effectively prohibits the sale of this margarine in the United States. The experience in Europe and in the United States goes to show that margarines palatable and of a nutritious value, in all probability not inferior to good butter, can be made out of vegetable fats or animal fats other than that in milk. Such margarines can and usually are fortified by the ad-

dition of the vitamins present in milk fats. We usually add a non-toxic color to winter butter without either labeling or taxing it, but when this color is added to margarines our federal government taxes it at ten cents per pound. Ostensibly this law was enacted for the protection of the consumer against deception. That phase can be taken care of by labeling, for most Americans can read. Actually the law was forced on our country by a pressure group, and I fail to see where the law works in the interest of our fellow-citizens in the lowest income group. Were all federal and state restrictions on good margarines swept overboard good margarine could probably be made and sold at half the cost of good butter. It appears that thirty states have themselves absolute prohibition against the sale of colored margarine. Twenty-nine states prohibit the importation of so-called "filled milk." This food is a combination of skimmed milk and animal or vegetable fats other than butter fat. This food, like margarine, can be and usually is fortified with the vitamins found in good condensed milk. Northern dairy states discriminate against margarine and "filled milk." Southern states retaliate by restricting dairy food from the northern states. It appears that several states recently have forced higher prices on dairy food by requiring inspection at the source of supply by officials of the importing state, an inspection duplicating that of the producing state. While these laws and regulations, state and federal, are dictated by selfish interests rather than the dietary welfare of the nation as a whole, they probably do not play a large role in the malnutrition existing in our country in terms of number of people, except among the poor. But it should also be said that any remedial measure tending to promote a good diet even for the poorest of our citizens should not be overlooked in our overall program for national nutritional welfare.

(K) *Wishful thinking or worse.* Even at the risk of concluding this discussion on "a sour note" I designate the last "obstacle" wishful thinking or worse. We, the laborers in science, must examine our moorings, lest mirages and miracles replace proven reality, and we too become the blind leaders of the blind. I know as yet of no dietary factor automatically assuring even in a man of science the rule of reason every day.

A high-ranking Government official in Washington said recently: "Defective stamina, intelligence, judgment, will, stability, can be treated by doses of synthetic vitamins." Since this administrator is neither a chemist, biologist nor physician, the information on which this extraordinary assertion is made must have been supplied by some one of our scientific colleagues, on whom rests the primary responsibility. Treated? Yes. These and other human impairments have had their therapies by the thousands. We all can "call the spirits from the vasty deep." But, do they come when we call them? If treated means treated with proved success, then it seems that a fractional potential has been turned into a universal affirmative. A cautious working hypothesis, such as the following—"deficient diets, short of producing a full-blown deficiency disease, may be responsible for such vague symptoms as mental depression, indigestion, easy fatigue, loss of weight, retarded learning ability and impaired vision"—is turned a proven fact, without further evidence. The administrator supports his statement with the following tale: "Recently I was told that a western trucking company had actually achieved a reduction of its night accident rate by providing all its drivers with bags of raw carrots at the beginning of each trip." We are not told what the truck drivers did with those bags of carrots. Did they hang them around their necks, or did they chew and swallow them? Or was this little item not checked? If they chewed the carrots, somebody who knows should have told those concerned that chewing carrots or chewing the rag are aids to keeping awake, no matter what either may do for the rhodopsin of the retina in the way of better vision in faint light. I know of no statistics showing what factor drowsiness, apart from poor vision (night blindness), plays in the safe operation of trucks at night. Some years ago a New York physician reported improvement in the scholastic record of New York City's backward children by feeding them extracts of the pineal gland. That "promising" therapy seems to have passed on. Now, vitamin pills perform these miracles, apparently even when heredity has been niggardly, and accidents and disease have left their marks on the unfortunate individual.

We are told by a colleague in chemistry: "It is recognized already that one vitamin can and does cure mental derangements." This is stated without qualifications, while as a matter of fact mental derangements are due to a great diversity of factors, including heredity, mechanical and chemical trauma and cerebral ischemia. The value of the vitamin B complex in mental derangements seems to be largely limited to those accompanying advanced pellagra and chronic alcoholism. The 1942 faith and hope in universal health miracles from synthetic vitamin pills seem premature, if not immature. When I see our institutions for the feeble-minded and the insane evacuated and closed by giving any or all of our 1942 variety of vitamin pills to these unfortunate fellow citizens I, too, will sing "Hosanna to the Highest." This scientist goes on to say: "Good diets, which mean an abundant supply of vitamins, promote in-

tellectual keenness. . . . There can be no doubt that much dullness on the part of school children . . . can be traced in part to lack of the proper kind of food and especially lack of enough vitamins." These are broad and important generalizations. But I know of no evidence that an ample ingestion of vitamin pills will materially improve the scholastic record of the millions of children and young adults in our schools. These assertions are just too good to be true. Human biology is not that simple.

Another colleague in chemistry tells us that the Germans "have enjoyed a more generous supply of thiamin and other vitamins which grains provide than have Scandinavia, the Low Countries, France, Spain, Italy or the British Isles. Perhaps pacifism is a product of malnutrition." Yes, the god "Mars" is traditionally pictured as a well-nourished specimen, and if good nutrition leads to war, and malnutrition to the striving for peace, what kind of diet has enabled man to discover the scientific method, to develop a sense of justice, a spirit of fair play, a love, respect and preference for truth and individual honesty? Are modern science and modern education sequelae of malnutrition?

Recently a subcommittee on medical nutrition of the National Research Council presented a report on malnutrition, under the heading, "Recognition of Early Nutritional Failure," and with two tables of signs and symptoms. I fully agree with this committee when it says: ". . . there is imperative need for (a) determination of the actual incidence of early deficiencies among the general population and for (b) the establishment of satisfactory diagnostic criteria for the recognition of such conditions." But after tabulating no less than twenty-nine alleged signs and symptoms of early or incipient dietary deficiencies that even laymen might observe and diagnose, the committee seems to wipe out its entire tabulation and report by this statement: "Implicit in the definition of the problem and in the foregoing statements is the fact that no symptoms or physical signs can be accepted as diagnostic of early nutritional failure. Certain symptoms and physical signs, however, when verified by a competent physician and when other possible causes have been ruled out, should be considered as significant indications." If this latter statement is true, and I subscribe to it, their tabulation is misleading, if not false *in toto,* in so far as present known facts of incipient dietary deficiencies are concerned.

The committee lists lack of appetite as a sign of incipient malnutrition. This is contrary to my experience, both in man and in animals. I saw hundreds of thousands of undernourished people on the continent of Europe in the winter of 1919, but, unless moribund, these people were eager for good foods. They eat the most unappetizing foods. At the end of over forty days of complete starvation a person, otherwise normal, has an appetite for food keener than at the start of the fast. I have had dogs, for various research purposes, fast much longer than forty days. At the end, or towards the end of these long fasts, these dogs grab food eagerly. To be sure, the rat on a diet deficient in the vitamin B complex will after a while eat less and less of this ration. But it will, unless moribund, eat a better ration. So appetite is not lacking. But it is clear that appetite for food being impaired by any cause will ultimately lead to malnutrition.

The alarming claim (100,000,000 Americans do not have a good diet) for national malnutrition in our land appears to be based primarily upon a series of surveys conducted by the Bureau of Home Economics of our Federal Department of Agriculture. These surveys embraced some 4,000 urban and village families of various levels of income and some 2,000 rural families of varying levels of income, selected from representative regions of our country. The surveys consist in reports from these families as to how much money they spent for food and what kinds of food were bought and, in the case of rural families, how much and what kind of food they consumed from the crops on their own farms. These field investigators had to take or did take the people's word for all these alleged facts. It is impossible to determine the degree of accuracy as to memory of whatever member of these families gave the facts or alleged facts to the enumerators. The precarious character of such data should have been apparent to any scientist who is free to work and think.

On the basis of the kind and quantity of the food bought or grown on the farms, the Bureau of Home Economics estimated the diets of these families as excellent, good, fair or poor. No physical or medical examination was made of the members of these families. Not even such a simple physical fact as the determination of the body weights of the people involved seems to have been undertaken. The necessity of such checks should also have been evident. The value of these statistics must largely be left up in the air as regards evidence for good or bad nutrition in our country by neglecting such an obvious factor as medical evidence of the health status of the people concerned, even though examination would have disclosed only advanced malnutrition.

How does Dr. Parran's interpretation of these statistical studies by the U. S. Bureau of Home Economics check with data from other sources? Hospital

statistics (admission, mortality rate) do not reveal significant national malnutrition in the United States, except for pellagra in the South. Of course, the mortality statistics reveal only terminal malnutrition, and admission statistics tell us only of malnutrition recognizable by present tests. Chronic malnutrition shortens the life span, but last year the average length of life of our citizens reached an all-time high or 63.42 years. There is some statistical evidence that our children are growing faster and taller than in the past, that college freshmen are taller than a decade or more ago. Children and youths do not grow faster or taller on inadequate diets. But we admit freely that these statistics do not cover our entire population. They are, however, indices. Malnutrition on a national scale does not lead to obesity, quite the reverse. This is certainly true of the experimental animal. And that was my observation in the war-devastated countries in Europe at the conclusion of World War I. Recent studies by the Life Extension Examiners show that 10 per cent. or more overweight is nearly three times more prevalent (28 per cent.) in the United States than 10 per cent. or more underweight (12.8 per cent.). It is a curious coincidence that the percentage of obesity in our people should come so close to Dr. Parran's estimate of the people having a good diet (25 per cent.). The obese may enjoy a good diet, but they do not use it wisely. Apart from pellagra, perhaps obesity is the most serious aspect of malnutrition in our country.

If 100,000,000 Americans, in times of peace and food plethora, had poor diets, that should have been revealed on medical examination of our millions of young men for our Army and Navy. All these data are not yet assembled and analyzed, but according to Dr. Rowntree, the first 800,000 men, age 21 to 35, examined in the 1941 U. S. Army draft had an average height of 67.5 inches, or exactly the same average height as our drafted men in World War I. But the 1941 men were on the average eight pounds heavier than the Army men of 1917–1918. We do not know whether these eight pounds represent muscle, bone or fat. These data on the 1941 draftees do not point towards an overwhelming malnutrition in our country. This should give us some assurance and some happiness. But we should not be content, we should not rest on the oar until we have discovered more adequate tests of incipient malnutrition; until we have cleared our land of myopic food practices; until we see dawn of understanding dispelling our fog of ignorance as to the nature of health and the nature and role of foods; until we have reached first base, at least, in driving pellagra from our homes. We have sufficient knowledge both as to causes, prevention and the cure of pellagra. We have the food to do it. And yet we have made scarcely a dent on this national disgrace. No, my fellow citizens, the day of rest and contentment for the students of human health is out of sight in war, and will not be in sight with peace. For this road is long, tortuous and difficult.

SCIENTIFIC EVENTS

RESOLUTIONS PASSED BY THE HOSPITAL BUREAU OF STANDARDS AND SUPPLIES

THE resolutions given below were passed at the annual meeting of the Hospital Bureau of Standards and Supplies held in New York City on February 25, at the conclusion of the address on "Hospitals and the War Program," by Maury Maverick, chief of the Bureau of Governmental Requirements of the War Production Board, Washington, D. C.

RESOLUTION I

WHEREAS, all resources of the nation should be used to the best advantage toward a successful and efficient prosecution of the war, and

WHEREAS, this nation must be prepared to provide full and complete hospital care and rehabilitation of the wounded of the services as well as for civilians, and

WHEREAS, the fullest possible utilization of existing government and civilian hospitals is desirable for the purpose of conserving manpower and critical materials,

Be it Resolved, therefore, by this organization that the President of the United States be requested to appoint a commission to study the problem of the most efficient use of the country's hospitals in connection with the war, this commission to consist of representatives active in the management of voluntary, public and governmental hospitals and national health agencies, with authority to secure adequate professional assistance to advise the commission in regard to technical matters arising in connection with the study, and

Be it Further Resolved, that this commission be authorized to make a comprehensive report with such recommendations as may appear to it to be wise, and

Be it Resolved, that this commission be also authorized to investigate other problems affecting hospitals in connection with the war, such as construction, personnel shortages, food rationing and shortages of materials and equipment, to the end that the people of the nation, both in military service and in civilian life, may be afforded adequate hospitalization facilities and services to protect the health of the nation.

This resolution was endorsed at the meeting of the Greater New York Hospital Conference on February 26. It is now being referred to James A. Hamilton, president of the American Hospital Association, for