

PUERTO RICO'S NUTRITIONAL PROBLEM

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Before attempting to give even a birdseye view of the nutritional problem of Puerto Rico, I must very briefly summarize beforehand some of the more important factors which, in the past and now, in the present, have brought pressure to bear on this so fundamental question.

As you can see on all maps, Puerto Rico is the smallest of the Greater Antilles group and lies to the east of the larger islands. It has the shape of a parallelogram 100 miles long by 36 wide, giving an approximate area of 3,400 square miles. In this small space, over 2 million persons live and have their being.

CHANGE OF SOVEREIGNTY

Nothing has influenced the social structure of the Island so much as the change of sovereignty, which converted the Island from a Spanish colony into a possession of the United States at the end of the Spanish-American War and on the ratification of the Treaty of Paris. The so-called "americanization" of Puerto Rico commenced when Spanish autonomy ceased, and awoke in the people a desire to create for itself a new way of life that might be as close as possible to the level of life of the citizens of North America. With the establishment of a coastwise shipping law, there came into Puerto Rico American capital, American methods and technics, American thinking and American ideas. There also followed those mighty forces of American living—the American magazine, American advertisement, the American cinema, the five and ten cent store—somewhat later, the radio; all of them exerted a tremendous influence on the people and helped to pull them out of the doldrums of their former existence. A part of them, and however—the more unfortunate—were not able to assimilate the change have not yet adjusted themselves to this new environment.

Theoretically, when two cultures come together, both benefit by, and are made richer, for the contact. However, when the contact is a violent one—as that produced by wars—the results are quite different. When such a contact is simply accidental, say, through a chance of history; if it takes place between countries of different cultural backgrounds; if it lacks the motivating factors of understanding or desire, then instead of creating a complete and harmonious amalgamation of all elements concerned, there is produced only a conglomeration that has neither the characteristics of the old culture nor the beginnings of a new one. This is what happened in Puerto Rico.

The contact brought about a division of the people into two distinct groups: one sought to assimilate the new ways of life and was thus able

to benefit by becoming part of the new socioeconomic order; the other group, who because of poverty, ignorance, and ill health, was unable to adapt itself to the new ways, still lives withdrawn and burdened, unable to receive the benefits of the resulting changes. It is this last group which so confuses our nutritional picture.

INDUSTRIAL REVOLUTION

The change of sovereignty also brought to Puerto Rico the industrial revolution, but our response to the industrial era was contrary to that of the United States, where immigrant labor had to be imported from Europe to meet the demands of a fast expanding industrial age. We brought machinery into a country that was already over-supplied with labor! The introduction of the machine did bring about an economy in production, which was translated into a cheapening of staple goods and an increase in wages for those who were fortunate enough to find work. But the machine also produced a proletariat with its tragic sequela—exodus of the rural population to urban areas, where work of one kind or another might be available; formation of miserable slums in and around city limits, and thus increase of poverty and disease.

PRESENT ECONOMIC RESOURCES

Puerto Rico has always been an agricultural country; sugar, coffee, tobacco, fruits, vegetables, and other food crops have been its principal mainstays. According to the 1940 Census,¹ there were some 55,519 farms comprising a total of 1,885,874 cuerdas. It is estimated that 711,270 of these cuerdas are under intensive cultivation; 656,333 in pasture, and the rest in forest, marshes, and waste-land.² The cultivated lands are distributed as follows: sugar-cane, 31.42 per cent; food crops, 27.97 per cent; coffee, 25.34 per cent; tobacco, 7.00 per cent; coconuts, 4.18 per cent; vegetables, 1.58 per cent; cotton, 1.36 per cent; fruits, 1.10 per cent; other crops, .06 per cent.³

Eighty per cent of the total value of Puerto Rican exports corresponds to sugar and its by-products (molasses, rum, alcohol).⁴ According to 1941 figures, 33 farms produced half of the sugar crop exported from Puerto Rico, while 6,771 farms raised only $3\frac{1}{2}$ per cent of the entire yield. This concentration of lands in the hands of absentee ownership is one of the reasons that has worsened conditions on the Island.

There are other sources of income, such as the needle, hat, bottle, cement, and glass industries; of these the needlework industry is the most important; it employs approximately 60,000 persons in normal times. It exports about 21 million dollars worth of goods yearly, but 14 millions of this amount must be discounted as cost price of the raw material that comes from the United States.

POPULATION MORTALITY AND MORBIDITY

Puerto Rico is twelve and a half times more populated than the United States, if we take into consideration the number of its inhabitants per square mile. The

acreage per person has therefore been decreasing continuously until there is now only 1.15 acres for every inhabitant, in striking contrast to 15.97 acres for continental United States.

Our birth-rate is around 40 per 1,000 population; our death-rate, 17 per 1,000, thus leaving a natural approximate increase of over 2 percent yearly. Such a rapid increase in the population has brought about a disproportionate ratio between adults and children, and so it happens that 41 percent of the total inhabitants of the Island are children under 15 years of age. Only 3 percent have reached 65, or over.⁵ In startling comparison, United States statistics give the percentages of 25 and 7, respectively, for these same ages. The picture is one to make a person stop and think. Forty-four percent of Puerto Rico's total population is made up of persons depending for subsistence on the remaining 56 percent!

Important causes of death are diarrhea and enteritis, tuberculosis, pneumonia, heart conditions, malaria, and nephritis. In addition, there is a group of diseases which, though not directly responsible for many of these deaths, exercises such a debilitating effect on the population—because of their chronicity—that they break down resistance in the individual and make him an easy prey to the above named conditions. Studies carried out reveal that there is an annual morbidity rate of 418 illnesses for every 1,000 inhabitants, those most commonly reported being respiratory diseases, gastrointestinal infections, undernutrition, intestinal parasitism, malaria, skin infections, accidents, and so forth. In Puerto Rico the general morbidity rate increases with age in contrast to the United States, where it decreases with age.⁶

THE NUTRITIONAL PROBLEM

(a) **Dietetic surveys.**—Several dietetic surveys have been undertaken, all of them attesting to the deficiencies existing in the diet of the general population, especially in that of the "jibaro," or country people, whose breakfast, as a general rule, consists of coffee—either black or with a little milk, oftentimes without sugar—and sometimes a piece of white bread. Lunch is made up of codfish and some starchy vegetable, such as sweet potatoes or dasheens, and/or plantains and rice and beans. For dinner these people eat more or less the same that they had for the mid-day meal, or they may make a stew with salt pork, some condiment—usually red peppers—and starchy vegetables again. This dish is known as "salcocho." For cooking they utilize wood or charcoal.⁷

The families have little or no knowledge of what constitutes a balanced diet, for they eat when they are hungry and whatever they may have at hand. Children from one year on eat the same food as their parents. Little meat, fish, eggs, or milk appears on their menus, and consequently the quality of the protein consumed—even if sufficient—is poor. Their diets are also low in calories, vitamins, and minerals.

While studying the nutrition of a rural group on the Island, Robinson⁸ found that their diets were wholly inadequate in every nutrition essential. Calories were limited; protein was insufficient; calcium and phosphorus were low. There was almost no consumption of leafy, green, or yellow vegetables. Although these records were taken at the height of the citrus fruit season, little citrus fruit showed up in their diets. Eggs

were utilized by only two families and these, in small quantities. What little meat was consumed consisted chiefly of dried salt meat, usually one fourth of a pound for each recipe. Salt pork and lard were used in small quantities. One ounce of lard to each pound of dry rice was common. Very little bread was eaten. Starchy roots, rice, and sugar made up the calories; coffee, onions, olives, and garlic provided the condiments.

On the other hand, Pérez⁹ found that in the rural sections of the Island the families of small farmers are much better fed than those families living as mere tenants on large farms or working in the urban areas. Of a total of 3,000 farms studied, 13.1 per cent were planted to sugarcane; 12.8 per cent to tobacco; 21.3 per cent to coffee, and 52.8 per cent to food crops. All of these farmers raised cattle, hogs, goats, and poultry, and their diets showed consumption of such foods as bread, milk, oatmeal, butter and eggs, sugar, poultry, lard, olive oil, meat, ham, pork, rice and beans, green vegetables, sweet potatoes, casava, breadfruit, codfish and canned salmon, the majority of them, items oftentimes beyond reach of the average workingman's purse.

In Puerto Rico rich and poor alike show deficiencies in the consumption of dairy products, fats, meat, eggs, and green and leafy vegetables, for the great bulk of the Puerto Rican diet consists mostly of starchy vegetables, cereals and their preparations. According to Hill and Noguera,¹⁰ every dollar spent for food in Puerto Rico during 1937-1938 was divided as follows: 20 cents for cereals (14 cents for rice); 18 cents for meat and fish; 13 cents for starchy vegetables; 11 cents for dairy products; 9 for green and leafy vegetables; 6 cents for sugar; 5 cents for fats; 5 cents for fruits; and 6 cents for other articles.

Descartes, Díaz Pacheco, and Noguera¹¹ revealed that, from the standpoint of supply, starchy vegetables rank first in importance of all food groups. The yearly consumption of green bananas is almost as high as that of rice. The quantity of bread consumed in the rural areas is about half of that in the urban zones; on the other hand, cornmeal is consumed largely by rural families. Egg consumption by rural families is one third of that of urban families, but the per capita consumption of milk and its equivalents, reveals the largest deficiency in all the food groups, when compared with actual consumption in the United States. Yearly per capita supply of green and leafy vegetables is about a third of that of the United States while, for the Island as a whole, the estimated consumption of fruits is just 71 per cent.

(b) **Deficiency studies.**—The number of persons, suffering from under-nutrition who come to the medical dispensaries of the Island, is really disturbing. Their symptomatology is wide and varied. Apart from signs of frailness and pallor, always evident, there are usually evidences of nervous instability, lack of vigor, indolence, and a definite lack of

mental concentration. In other cases, there may be found gastrointestinal or cardio-respiratory symptoms, which are not characteristic, and lack of coordination. Unfortunately, the clinical and biochemical studies carried out in this field are scanty. Among the classical deficiencies, sprue, pellagra, scurvy, xerophthalmia, and nutritional edema are commonly diagnosed.

A clinical and X-ray study¹² of 310 infants and children from a low-income group revealed that 11 per cent were suffering from hypo-proteinemia, 3.5 per cent from pellagra; scurvy was present in 2.2 per cent. Radiological evidences of rickets were found in only 1.5 per cent; 3 per cent showed hyperkeratosis, 6 per cent Bitot's spots, and 7 per cent, angular cheilitis.

Of 267 subjects studied¹³ with the biophotometer, only 8 persons showed a normal curve. One case suffered from night blindness. Five of the persons showing the highest dark adaptation curve were given 100,000 unit-doses daily of vitamin A, orally, all of them showing some improvement in their light threshold at the end of treatment.

Of 116 persons, in whom a careful gross examination of the eyes was made, 19 per cent had normal conjunctivae. The remaining 81 per cent showed: increased vascularity—5 per cent; prexerosis—19 per cent; Bitot's spots—59 per cent. Dr. Suárez believes that, at the present time, there exists in the adult population of Puerto Rico a chronic, latent, and subclinical stage of vitamin A subnutrition.

Munsell¹⁴ studied the plasma ascorbic acid concentration of 366 individuals of widely different economic levels, 57.9 per cent of whom were found with a plasma ascorbic acid concentration in the severe deficiency range. This high incidence was independent of socioeconomic status and indicates that poverty alone is not the only cause of vitamin C undernutrition in Puerto Rico.

Robinson¹⁵ analyzed 110 one-hour fasting urine samples from a rural low-income group for thiamine, riboflavin, and the F₂ factor or N-methylnicotinamide; 37 per cent of these subjects showed subclinical evidence of thiamine deficiency; 87 per cent were deficient in riboflavin; and 78 per cent were low in niacin. Blood samples were also obtained from 103 subjects, 83 per cent showing vitamin A deficiency, 84 per cent being deficient in carotene, and 63 per cent, in vitamin C.

In order to learn more about the nutritive quality of the staples in the Puerto Rican dietary, and how to supplement them efficiently, experiments have been conducted on growth and reproduction in the rat on diets of rice and beans.¹⁶ Results to date have demonstrated that rats fed a diet of polished rice and red kidney beans grow very slowly, never attain maturity, and show signs of vitamin A deficiency in about 70 days. If this same diet is given to females, reared and bred on an adequate diet, from the time of insemination and all through gestation, fetuses develop at the expense of maternal tissue, and there is a high maternal and infant mortality. If the diet is given during lactation, from the day of birth of the litter, to females that have been reared and bred on adequate diets, the young grow slowly, but the body weight of those that survive is less than half of the controls'. The addition of vitamin A, calcium, and protein to the diet induced optimum growth and reproduction.

Some research has been undertaken to study the use of certain protein supplements as a means of improving the quality of the protein consumed by our low-income groups. Since sugar is the main crop of the Island and molasses is available in large quantities and at reasonable price, the study of yeast—as a protein supplement and source of vitamin B, seemed justified. When dried brewer's yeast was fed to rats in concentrations of 8 per cent, or lower, as the sole source of protein, the acute necrosis of the liver—known to be due to methionine deficiency—was observed in all animals. At a level of 30 per cent, there was maximum growth, with no improvement noted at 40 per cent. Reproduction studies are in progress.

Determinations of the biological value of protein according to the method of Mitchell gave the following values: cooked soybean—73.1; casein—71.7; dried brewer's yeast—71.3; cooked red kidney beans—57.0. Recently a sample of *Torula utilis* was secured from Dr. Thaysen and it is being compared with dried brewer's yeast by the above procedures.

However, when utilized as a protein supplement to the rice and beans diet, dried brewer's yeast apparently was not as efficient as casein or soybeans. There was an improvement in the growth and appearance of the rat with the addition of 10 per cent yeast, but optimum growth was not secured at higher levels. Reproduction performance was unsatisfactory at all levels. The causes of failure have not been determined, but perhaps unpalatability may be one.

In passing, I should like to mention a clinical observation of Dr. F. Hernández Morales, Medical Supervisor of the Research Hospital of the School, which may be of some significance. Dr. Hernández has observed that, after treatment with liver extract, certain cases of sprue show no tendency to relapse if fed moderate quantities of yeast. The controls do, however.

Extensive studies have been made of the nutritional value of tropical foodstuffs and fruits.

Since practically all the fats used in the Island are imported, we have been conducting systematic research on the oil-bearing seeds, growing in Puerto Rico, and determining the characteristics and chemical composition of the oils, as well as their nutritional value.¹⁷

WHAT PUERTO RICO IS DOING

There are at least four programs under way, which are directed towards improving the nutritional status of the people, either by increasing their incomes, inducing them to plant a greater variety of foodstuffs, by feeding children of school age and infants one good meal a day, or by educating all groups concerned. These programs are:

(a) **Land-tenure program.**—Trying to avoid onerous land-tenure patterns, the Congress of the United States incorporated into the 1917 Organic Act of Puerto Rico a strict provision, whereby no corporation might control more than 500 acres of land. Between the years 1900 and 1936, no direct attempts were made to enforce this section of the Act; in 1938, however, the Supreme Court of Puerto Rico upheld the validity of the 500-acre Law, as it came to be known, which decision was later affirmed by the Supreme Court of the United States, thus giving a legal basis for the projected land reform program.

Land reform really commenced in Puerto Rico in 1921, when the Insular Homestead Commission was established. This governmental

agency purchased tracts of land and divided them into small farms, allotting them to the farm laborer either on a rental basis or on the basis of gradual acquisition through amortization of the land value. The Homestead Commission established 2,074 such farms, with a total acreage of 24,000 cuerdas. In like manner, the Puerto Rico Reconstruction Administration, set up by the Federal Government in 1935, redistributed over 44,000 cuerdas and added 995 farms and 10,026 subsistence farms to the program of land-tenure in Puerto Rico. Again in 1938, under the auspices of the Farm Security Administration, the Tenants' Purchase Program was extended to Puerto Rico. To date, this agency has created 491 farms, each capable of sustaining a family at a satisfactory level of living. Some 17,800 cuerdas were involved in these transactions.

Finally, in 1941, the Legislature of Puerto Rico enacted a Land Law, the purposes of which may be summarized briefly as follows: (a) To end coöperative latifundia and block its reappearance in the future; (b) to assist in the creation of new landowners; (c) to provide means for the *agregado* (squatter) and slum dweller to acquire a parcel of land on which to build his home, and (d) to facilitate the utilization of land for the best public good by creating proportional-benefit farms under efficient and economic management. The Puerto Rico Land Authority, charged with carrying out this program, has already acquired 16,831.37 cuerdas for squatter settlement and has purchased an additional 11,094.04, where six proportional-benefit farms are in operation. In all, about 29,119 cuerdas have been acquired and either redistributed to the people of the Island, or held for proportional-benefit farms.¹⁸

(b) **Child-feeding program.**—At present there are four child-feeding projects in operation. The Infant-feeding Program of the Insular Department of Health is sponsored by the public health units of this government agency; the Milk Stations are operated by private enterprise, and the Nursery School Feeding Program and the Community Lunch Program come under the Insular Department of Education. These programs aim to give the child as much protective food as possible in the one meal served him. It is estimated that about 200,000 children avail themselves of these feeding programs.¹⁹

(c) **Increased incomes.**—The Legislature of Puerto Rico approved legislation which created a Minimum Wage Board, composed of nine members—four in representation of employee interests, four in representation of labor, and one representing public interest, which shall fix wages in industry and agriculture, with due regard to cost, the financial condition of industry, branches of production, market fluctuations, and other special conditions prevailing in each locality, as well as having due regard for the living and working conditions of the laborer. The establishment of this Board has undoubtedly brought about a definite improvement in the life of the workingman and a general increase in his wages.²⁰

(d) **Educational campaign.**—A group of persons from various governmental agencies and bureaus, interested in the nutritional problems of Puerto Rico, have formed a Nutrition Committee comprised of some 30 members, with subcommittees for education, information and publicity,

determination of food values, and so forth. A subcommittee has also been set up in each town of the Island. So far, the Nutrition Committee has proved of special value in disseminating proper information on nutrition through the radio, films, newspapers; in preparing tables of the nutritive values of Puerto Rican foodstuffs, in figuring food waste, in sponsoring vegetable garden campaigns, and other like measures. In the future, this organization can undoubtedly be of great aid in maintaining a live interest in the field of nutrition, in sponsoring surveys and research projects, and in forming public opinion.

In closing, I would like to thank you all for allowing me this opportunity to lay before you one of our most pressing questions. As you have heard, it is a difficult and a confusing problem. It constitutes, however, a challenge to the investigator and to the educator, for it is only through careful and conscientious research and through continuous and methodical education that it can be improved.

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PROBLEMA DE LA ALIMENTACION EN PUERTO RICO (*Sumario*)

Antes de dar una idea del problema de la alimentación en Puerto Rico, debemos resumir brevemente algunos de los factores—pasados y presentes—que sobre él han influido.

Puerto Rico es la más pequeña de las Grandes Antillas; está situada en el extremo oriental del grupo; tiene la forma de un paralelogramo de 100 millas de longitud por 36 de latitud, con área de 3,400 millas cuadradas y está poblada por 2,000,000 de seres humanos.

Cambio de Soberanía.—El hecho histórico que más ha influido en la estructura social del país ha sido el cambio de soberanía cuando, como resultado de la Guerra Hispanoamericana, dejó de ser una colonia española y pasó a convertirse en una posesión de los EE. UU. En ese momento comenzó lo que se conoce con el nombre de “americanización” de Puerto Rico. Al cesar la autonomía, los puertorriqueños despiertan a una nueva vida y desean emular la de sus conciudadanos norteamericanos. Se establece el comercio de cabotaje con la nueva metrópoli; llegan a Puerto Rico capital, métodos, técnicas e ideas norteamericanas, y a estas importaciones sirven como vehículos los anuncios comerciales, las revistas ilustradas, el cine, más tarde la radio, medios que ejercen una enorme influencia sobre el pueblo y le estimulan a salir de su antigua apatía, aunque una parte de él—los más desafortunados—no ha podido adaptarse al cambio.

En teoría, cuando dos culturas entran en contacto, ambas se benefician; pero cuando el contacto es violento—la guerra, por ejemplo—el resultado puede ser otro. Si el contacto es accidental, producto del acontecer histórico; si acaece entre pueblos de diferente cultura; si entre los pueblos en contacto no existe el deseo de comprensión mutua, entonces, en vez de producirse una amalgama armónica, sobrevendrá una mescolanza de elementos híbridos, sin los caracteres de la vieja cultura ni las bondades de la nueva.

El cambio de soberanía ha producido en Puerto Rico una división entre las gentes: a un lado, el grupo asimilista que se ha beneficiado al formar parte del nuevo orden económicosocial; el otro grupo que, por su pobreza y falta de salud, no puede adaptarse y vive al margen del nuevo estado de cosas, sin beneficiarse de las transformaciones operadas en el país. Este último grupo es el que hace tan complicado nuestro problema de alimentación.

Revolución Industrial.—El cambio de soberanía revolucionó nuestra organización industrial de manera distinta a lo ocurrido en los EE. UU., en donde hubo que importar mano de obra de los países europeos para suplir las demandas de una industria en proceso de expansión. Nosotros importamos maquinaria y nos sobraban brazos. La mecanización industrial abarató la producción y los artículos de primera necesidad, y aumentó los salarios de los obreros que podían obtener trabajo; sin embargo, produjo un proletariado con su secuela consiguiente—éxodo de los campesinos hacia las urbes industriales, formación de arrabales inmundos en torno a las ciudades, pobreza y enfermedad.

Actuales Recursos Económicos.—Puerto Rico siempre ha sido un país agrícola que ha producido principalmente, azúcar, café, tabaco, frutas y vegetales. Según el censo del 1940,¹ existían en Puerto Rico 55,519 fincas agrícolas, repartidas sobre 1,885,874 cuerdas, de las cuales estaban cultivadas 711,270, existiendo 656,333 dedicadas a pasto para el ganado y el resto, marismas, bosques y tierras baldías.² Los terrenos cultivados estaban dedicados a caña de azúcar (31.42%); artículos de consumo (29.97%); café (25.34%); tabaco (7.00%); cocaes (4.18%); hortalizas (1.58%); algodón (1.36%); frutas (1.10%), y otros cultivos (0.6%).³

Nota: Véanse las notas bibliográficas 1-17 en la pág. 236.

El 80% del valor de todas las exportaciones de Puerto Rico corresponde al azúcar y sus derivados (alcohol, ron, melazas),⁴ y, según los datos del año 1941, la mitad del azúcar exportada por Puerto Rico procedía de la cosecha de caña en 33 plantaciones, en tanto que 6,771 fincas de caña sólo rindieron el 3½% del total de azúcar exportada ese año. La concentración de los terrenos agrícolas en manos de absentistas ha empeorado las condiciones económicas del país.

Existen otras fuentes de ingresos de otras industrias: sombrero, cemento, vidrio, bordado, y cosidos. Estas dos últimas, las más importantes, utilizan unos 60,000 obreros y exportan por valor de 21,000,000 dólares al año, pero tienen que importar \$14,000,000 de materias primas de los EE. UU.

Mortalidad y Morbilidad.—La Isla de Puerto Rico tiene una población 12 veces y media más densa que los EE. UU. y va aumentando de año en año, de tal manera que, actualmente, corresponderían 1.15 acres por habitante mientras que en EE. UU. la proporción es de 15.97 acres.

La natalidad es de 40 por cada 1,000 habitantes; la mortalidad de 17 por 1,000, por tanto el aumento natural de la población es de 2% anual, existiendo una desproporción entre el número de adultos y niños: el 41% de los habitantes son de menos de 15 años de edad y sólo el 3% llega a los 65 años (en los EE. UU. los porcentajes respectivos son 25 y 7 en esas mismas edades), todo lo cual significa que en Puerto Rico el 44% de la población está formado por sujetos que dependen para subsistir del 56% restante.⁵

Las causas más importantes de muerte son las diarreas y enteritis, las tuberculosis, neumonías, cardiopatías, malaria y nefritis, a más de otras enfermedades crónicas que debilitan la resistencia orgánica. En Puerto Rico la morbilidad general aumenta con la edad, al revés de lo que ocurre en EE. UU.⁶

Problema de la Nutrición.—(a) *Estudios sobre la dieta:* Las investigaciones sobre alimentación han demostrado la pobreza de alimentos que ingiere la población general. El *jíbaro* (campesino) se desayuna con un trago de "café prieto y pulla" (sin leche ni azúcar), almuerza bacalao seco y tubérculos (batata, ñame) o "arroz y habichuelas." La comida es una repetición del almuerzo o consiste de un cocido de tubérculos condimentados con carne de cerdo y pimientos, plato llamado "salcocho," cocinado al fuego de leña o carbón vegetal.⁷ El régimen alimenticio es escaso en calorías, vitaminas y vegetales⁸; las gentes ignoran las más elementales reglas de alimentación; los niños desde un año de edad en adelante comen lo mismo que los adultos; apenas se consumen hortalizas y frutas cítricas, así como carne y leche.

No obstante, las familias campesinas, poseedoras de pequeños predios, se alimentan mejor que las que viven "agregadas" o en los arrabales.⁹

En general, el régimen alimenticio de los puertorriqueños, lo mismo entre los pobres que en las clases acomodadas, es escaso en leche y sus derivados, grasas, carnes, huevos y hortalizas, consistiendo principalmente de cereales y tubérculos.^{10,11}

(b) *Estudios sobre deficiencias alimenticias:* El número de individuos que sufren de trastornos y deficiencias alimenticias es realmente grande, según se ha podido comprobar en los consultorios médicos donde se diagnostican, con cierta frecuencia, los casos de espruo, pelagra, escorbuto, xeroftalmia y edema nutricional. Entre 310 niños de la clase pobre, el 11% padecía hipoproteinemia; el 3.5% pelagra, y el 2.2% escorbuto.¹² Entre 116 sujetos sólo el 19% tenía las conjuntivas normales los restantes demostraban vascularidad aumentada (5%), prexerosis (19%), y manchas de Bitot (59%).¹³ Al examinar la concentración de ácido ascórbico en la sangre de 366 sujetos de diferente nivel económico, el 57.9% resultó deficiente;¹⁴ el estudio de Robinson de 110 sujetos demostró que el 37% tenía deficiencia subclínica de tiamina, el 87% de riboflavina, y el 78% de niacina.¹⁵

Se han emprendido algunas investigaciones¹⁶ sobre la manera de mejorar la alimentación de las clases pobres con la adición de proteína de alta calidad nutritiva, y se ha pensado que las melazas procedentes de la fabricación de azúcar podrían utilizarse para la producción de una levadura (*Torula utilis*) como fuente de vitamina B y de proteína. Estas investigaciones están aún en marcha. Se ha estudiado también el valor alimenticio de algunos productos del país, y como casi todas las grasas que se consumen en la isla se importan de los EE. UU., se ha investigado sistemáticamente el contenido oleoso de algunas semillas¹⁷ para determinar su composición y la posibilidad de usarlas en la fabricación de grasas alimenticias.

Medidas Adoptadas.—Con objeto de contribuir a mejorar la alimentación del pueblo, se han puesto en práctica varias medidas para aumentar los ingresos económicos y estimular a las gentes a sembrar frutos más variados que sirvan para el consumo. Se han establecido cantinas escolares donde se sirve a los niños una buena comida al día y se ha organizado una campaña educativa sobre alimentación.

(a) *El Acta Orgánica* otorgada por el Congreso de los EE. UU. a Puerto Rico en el año 1900, con objeto de evitar el latifundio, prohibía expresamente que las grandes compañías agrícolas poseyeran y explotasen, más de 500 acres de tierra. En el año 1917, al modificarse el Acta Orgánica, esta ley fué incorporada nuevamente pero nunca se trató de ponerla en vigor hasta el 1936. En el año 1938 el Tribunal Supremo de Puerto Rico decretó su validez, que fué confirmada por el Tribunal Supremo de los EE. UU., dando así base legal para un proyecto de reforma agraria.

En el año 1921 se creó la Comisión Insular de Hogares Seguros. Esta agencia gubernamental adquiría terrenos, los dividía en pequeños predios y los repartía entre los campesinos, los cuales podían adquirir posesión permanente a base de amortización gradual del valor de las tierras, o disfrutar de ellas pagando un canon moderado de arrendamiento. Existen 2,074 de estas fincas distribuidas en un área total de 24,000 cuerdas.

En el año 1935, la Agencia Federal para la Reconstrucción de Puerto Rico contribuyó al establecimiento de la reforma agraria, redistribuyendo 44,000 cuerdas de tierras, así creando 995 granjas agrícolas y 10,026 "granjas de subsistencia."

En el 1938, se hizo extensiva a Puerto Rico la Ley de Seguridad Agrícola (*Farm Security Administration*), por virtud de la cual se han creado 491 fincas en un área de 17,800 cuerdas de tierra.

Por último, en el 1941, la Legislatura de Puerto Rico creó la Ley Agraria, cuyos fines y propósitos son los siguientes: (a) extirpar el latifundio, (b) ayudar a la formación de nuevos terratenientes, (c) facilitar los medios para que los "agregados" de fincas y habitantes de los arrabales puedan adquirir una parcela de terreno para construir su vivienda, y (d) mejorar la utilización de los terrenos creando "finca de beneficio proporcional" bajo una administración económica y eficaz. "La Autoridad de Tierras de Puerto Rico," agencia encargada de la realización de dicho plan, ha adquirido ya 16,831.37 cuerdas destinadas a asentamiento de agregados, más 11,094.04 en las que ya hay funcionando varias granjas colectivas. En total, el gobierno ha adquirido 29,119 cuerdas de terrenos que han sido distribuidas entre los campesinos o dedicadas a fincas de "beneficio proporcional."¹⁸

¹⁶ S. L. Descartes, J. Land & Pub. Economics, 19: 397, 1943.

M. Harris, The Caribbean Land-Tenure Symposium. U. S. Department of Agriculture, Washington, D. C. Estas fincas son poseídas por una corporación pública del gobierno, cuyos beneficios, si los hubiere, se dividen entre los trabajadores que las labran.

(b) *Alimentación infantil*: Atienden a esta medida el Departamento Insular de Sanidad por intermedio de las Unidades de Salud Pública; las Estaciones de Leche sostenidas por fondos particulares; las Escuelas de Alimentación Infantil y los Comedores Escolares, bajo la administración del Departamento de Instrucción. Unos 200,000 niños, aproximadamente, se benefician de estas medidas gubernamentales.¹⁹ Este programa tiende a equilibrar la dieta de los niños pobres, sirviéndoles una buena comida diaria.

(c) *Mejoramiento de salarios*: La Legislatura de Puerto Rico ha creado una Junta de Salario Mínimo compuesta de nueve miembros—cuatro representantes de los obreros, cuatro por los patronos, y uno como representante del interés público—los cuales deberán fijar una escala de jornales en las industrias y las labores agrícolas, teniendo en cuenta el coste de la producción y las condiciones económicas de cada industria, las fluctuaciones del mercado, y las de cada localidad en particular, sin perder de vista las condiciones de vida de los trabajadores y las circunstancias en que éstos hacen su labor. Esta dependencia gubernamental ha contribuido indudablemente a mejorar los salarios y el estado de vida de los obreros.²⁰

(d) *Campaña educativa*: Se ha formado un Comité de Alimentación compuesto de treinta miembros pertenecientes a varias ramas del gobierno insular, y se han establecido subcomités en todos los pueblos de la isla. Las funciones de esta nueva organización son: impartir instrucción por medio de la radio, del cine, y de los periódicos sobre alimentación; preparar tablas sobre el valor alimenticio de los productos de consumo y demostrar su aprovechamiento; patrocinar el cultivo de huertos domésticos, y otras medidas de idéntico carácter. Esta organización habrá de ser, con el tiempo, muy beneficiosa pues mantendrá vivo el interés del público por los problemas de alimentación; podrá iniciar investigaciones originales sobre esta materia, y contribuirá a formar una opinión pública sobre nuestros problemas más vitales.

Todo lo aquí esbozado constituye un aliciente para los investigadores y educadores. Solamente tras una cuidadosa, continua y metódica educación se podrá mejorar este estado de cosas.

¹⁹ Esquema de las operaciones bajo del *Children's Free-Feeding Programs* en Puerto Rico e Islas Vírgenes, según fué preparada por la Oficina de Distribución de Alimentos (*Office of War Food Distribution Administration*), en San Juan, P. R., Septiembre 1944.

²⁰ Leyes de Puerto Rico, 1941, p. 303.

Enfermedad de Milroy en la Argentina.—El primer caso del linfoedema crónico de Milroy en la República Argentina es el descrito por Eduardo G. Caselli (*Arch. Arg. Ped.*, 106, agto. 1945) en 2 hermanos de la misma generación estudiados en el Hospital del Niño de la Plata. El proceso es extremadamente raro y el A. sólo pudo encontrar unos 12 trabajos sobre la dolencia. Kust Glaser (1944) declaró que no debe haber más de 50 familias en el mundo con las características de la afección. El primer caso lo describió Nonne en Alemania en 1890 y 2 años después, Milroy en los Estados Unidos, puntuó los puntos fundamentales: trofoedema crónico, hereditario, de localización preferente en los miembros inferiores. Osler al describir un caso empleó por primera vez el nombre de enfermedad de Milroy. En la Argentina Casaubon en 1926 presentó una enferma con edema en todo el miembro inferior derecho clasificado como trofoedema de Meige y en 1934 Escardó y Foster presentaron otro.—E. G. CASELLI: *Arch. Arg. Ped.*, 106, agto. 1945.