

Dr. Lydia J. Roberts – Puerto Rico’s Doyenne of Nutrition

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The year 2026 marks the 80th anniversary of Dr. Lydia J. Roberts’s relocation to Puerto Rico. To commemorate this occasion, a historical note on her Puerto Rico experience is appropriate. Prior to relocating to Puerto Rico in 1946, she had already achieved a stellar career at the University of Chicago as a leader in the field of nutrition. Mandatory retirement meant that she had the freedom to begin a new phase of her career, which consisted of continuing her research in Puerto Rico. Key figures in supporting her work were Jaime Benítez Rexach, chancellor of the University of Puerto Rico, and Luis Muñoz Marín, Puerto Rico’s governor. Her research provided the groundwork for future nutritional programs that would benefit the Puerto Rican population. Two of these undertakings, described in this manuscript, are *Patterns of Living in Puerto Rican Families*, and *The Doña Elena Project*. Their original publication in booklet form makes them difficult to access. This article is the first to combine the general findings of both studies and to present them in journal form.

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In this historical note, the focus centers on a remarkable woman who arrived in Puerto Rico at the age of 65, having just retired from a major U.S. university, and who went on to achieve further distinction as a director of academic and research programs, as well as international recognition, for an additional 20 years. It is not the intent of the author to chronologize in detail the life of Dr. Lydia J. Roberts. This has been amply accomplished by two of her former students in a biography (1), from which the author selects pertinent information on two major studies, namely the *Patterns of Living in Puerto Rican Families* (2) and *The Doña Elena Project* (3). It should be noted that general findings from these two projects are reported for the first time in journal form, as both had been published as booklets.

The Puerto Rico Connection

It was no accident that Dr. Roberts, after mandatory retirement from the University of Chicago, chose to continue her career far from the shores of Lake Michigan. Her prior visits to Puerto Rico presented unique opportunities to continue, and even expand, her nutritional work.

In early 1943, M. L. Wilson, director of the U.S. Nutrition Service, requested that Dr. Roberts evaluate nutritional problems in Puerto Rico, an assignment similar to a study that she had carried out in the southern United States in 1942. Consequently, she spent six weeks traveling on the island. Dr. Roberts reported her observations of widespread undernutrition, which was caused not only by war-time shortages but also by the economic hardships of the 1930s. She suggested that a nutritional workshop be offered to the leaders of various agencies, similar to workshops offered at the University of Chicago. Funds were obtained from the U.S. Department of Agriculture’s Nutrition Service, and in June 1943, the first workshop was conducted at the University of Puerto Rico. A carefully selected group attended. Included were representatives

from agriculture, home economics, and education, as well as extension services (e.g., community outreach programs affiliated with universities and government agencies); many would later hold high positions in government and administration. A notable outcome was the reorganization of the Puerto Rico Nutrition Committee, which would have a key role in all future nutritional initiatives.

In the spring of 1943, Dr. Roberts became acquainted with Jaime Benítez Rexach, recently appointed chancellor of the University of Puerto Rico. He invited her to return to the university to assist with the reorganization of the curriculum of the Department of Home Economics. With permission from the University of Chicago, she returned early in 1944 for a two-month stay, and Chancellor Benítez subsequently invited her for an eight-month stay, from November 1944 to June 1945. She returned to Chicago and officially retired. Later in 1945, Chancellor Benítez visited her in Chicago and invited her to join the faculty of the Department of Home Economics and serve as its head, as the current chair was resigning in December 1945. She accepted, with the stipulation that funds be made available for a study of the current nutritional status of the people of Puerto Rico.

Patterns of Living in Puerto Rican Families Study (1946)

Dr. Roberts arrived in Puerto Rico in January 1946, and as promised, funds were granted for a study of the living patterns

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of Puerto Rican families. Dr. Roberts wasted no time in making plans to initiate the study. A team was organized and included Rosa Luisa Stefani, an expert in the preparation of interview schedules and the associate director of the Department of Home Economics; the staff of this department; members of the Nutrition Board; and representatives from many local government agencies. After five months of careful planning, (June to October 1946), 1,044 families were interviewed. Most of the interviewers were home economics students and teachers who had attended training workshops that included practice in anticipating responses to the items in the interview schedules. The study is described in the preface of reference 2 and is as follows: “This report presents a picture of living conditions in Puerto Rican families based on an island-wide study of a representative sample. The findings are given in detail in 230 tables and are separated into rural and urban regions, with urban defined as a population of 2,500 or more at four different income levels.”

Table 1 presents a summary of the results of *Patterns of Living in Families of Puerto Rico* study. To aid interpretation of income levels, \$1.00 in 1946 is equivalent to \$17.08 in 2026 (4). The study collected information on family composition, housing and health conditions, dietary intake, and, finally, miscellaneous topics. Although all categories are reported, only the diet section is described in detail. The two most popular food choices are presented (Table 1, Part D) for low-income and high-income families. Those interested in the complete results should refer to reference 2, in which the findings are accompanied by a discussion section. In this article, no individual results are discussed.

As a general rule, urban families enjoyed an overall better standard of living than rural families did. The same pattern applied to families in the higher income brackets compared with those in the lower ones. Nevertheless, the entirety of the population would be classified as impoverished by modern standards, with inadequate diets and living conditions, and with limited electric power and piped-in water in rural homes.

The results were compiled and published as a booklet in 1949 (2). The strategies developed would later be used and expanded to guide further nutritional studies.



The Doña Elena Project (1958 – 1963)

During her years in Puerto Rico, Dr. Roberts cultivated many influential friendships, the most important of which were those with Luis Muñoz Marín, Puerto Rico's first elected governor, and his wife, Ines Mendoza de Muñoz. Muñoz Marín had, in particular, a special affection for the Puerto Rican *jibaros* (rural laborers), who formed a substantial portion of his voters. These people had not shared equally in the island's economic rise, as had many urban and higher income groups. It was his wish to improve their standard of living.

Table 1. Summary of results: Patterns of living in Puerto Rican families

Part A. Family information (n = 1044)			
Characteristic	% Rural	% Urban	
Distribution	66.8	33.2	
Average family size (members)	5.9	4.7	
Families with ≥6 members	44.8	—	
Families with ≥7 members	32.0	—	
Families with non-nuclear members*	35.8	—	
*Includes in-laws, relatives, etc.			
Income			
Note: \$1.00 (1946) = \$17.08 (2026) (4).			
Income range	% of families		
≤\$500	43.0		
\$501–\$999	30.6		
\$1000–\$1999	17.8		
≥\$2000	8.0		
Educational level			
Age group	No schooling	≥8th grade	
25–65 years	35.0%	14.3%	
≥65 years	77.8%	4.0%	
School attendance among children aged 10–14 years, by income			
Location	≤\$200	≥\$500	
Rural	63.9%	85.7%	
Urban	87.7%	97.7%	
Average number born and maternal mortality, by income			
Income range	Avg no. born	% Deaths	
≤\$500	5.2	26.3	
\$501–\$999	5.1	26.3	
\$1000–\$1999	4.3	15.8	
≥\$2000	3.6	13.0	
*The maternal mortality ratio in 2021 was estimated at 34.3 deaths per 100,000 live births (0.03%) (5).			
Part B. Housing conditions			
Home ownership and tenancy			
Category	All families (%)	Rural (%)	Urban (%)
Own home	37.5	47.3	24.2
Live rent-free	33.2	39.7	24.5
Rent home	29.3	13.0	51.3
Personal crowding			
Category		Rural (%)	Urban (%)
Live in 3-room house		57.7	38.4
Live in structure with more persons than rooms		82.7	45.7
Utilities and income indicators			
Category		Rural (%)	Urban (%)
Have electricity		17.3	77.7
Have piped-in water		14.3	71.7
Income ≤\$500		—	37.5
Income ≥\$2000		—	98.5

Household items (appliances, cookware, sink, storage area)		
Category	Rural (%)	Urban (%)
No kitchen	48.1	32.3
No small kitchen (7×7 ft)	45.4	47.3
No storage space	46.9	32.0
No small storage space (10 ft ²)	46.9	32.0
No refrigerator	97.0	78.7
No oven	97.5	88.5
No fogón*	72.2	34.9
No sink	82.7	50.0
Fewer than 20 cooking dishes	72.9	56.8
No electric iron	91.4	49.9

*Traditional wood-burning cooking structure (hearth).

Furnishings	
Item	% of total families
No bed	3.3
No table	7.8
No chair	48.5

Sleeping and eating conditions		
Category	Rural (%)	Urban (%)
Sleep 3–4 people/room	75.6	54.0
Crowded sleeping areas	56.7	25.4
Sleep on mattress (with box springs)	6.1	27.7
Eat in dining area, kitchen, or on steps	77.2	47.0
Not enough chairs for meals	80.2	45.8
Fewer than 6 eating utensils	56.4	43.8

Part C. Health conditions		
Sanitary practices: human waste disposal		
Category	Rural (%)	Urban (%)
Flush toilet	4.3	15.7
Latrine	66.7	75.0
No facilities	29.0	9.3
Ground or river	69.3	34.1
Other	30.7	65.9
Rural use of river	Rural (%)	
Bathe	51.5	
Drink	40.7	
Wash clothes	51.2	

Water and trash practices		
Category	Rural (%)	Urban (%)
Boil water before drinking	2.2	11.1
Trash littered	79.8	19.4

Maternal care		
Category	Rural (%)	Urban (%)
Prenatal care	65.3	51.0
Home delivery	91.0	71.6
Delivery by a doctor	5.2	17.2
Postpartum examination	6.3	14.5

Infant care		
Category	Rural (%)	Urban (%)
Advice from qualified persons	24.4	44.0
Doctor examination during first year	30.8	66.5
Fruits, vegetables, eggs during first year	7.4	21.8
Breastfed ≥3 months	86.5	78.1
Breastfed ≥3 months (low income)	89.1	83.2
Breastfed ≥3 months (high income)	66.6	64.4

Home treatment for ailments	
Judgment	% of families
Ineffective	58.5
Harmful	10.5

Part D. Diet				
Breakfast: 2 most common patterns, by income level				
Breakfast pattern	<\$500	\$500–\$999	\$1000–\$1999	≥\$2000
Rural				
Black coffee, only	32.1	9.7	4.2	5.9
Coffee + milk, cereal	19.5	10.4	21.2	46.4
Urban				
Coffee + milk, bread	47.8	42.0	22.4	4.5
Coffee + milk, CHO*, protein	5.1	11.3	26.4	28.4

*CHO, carbohydrate.

Lunch: 2 most common patterns, by income level				
Lunch pattern	<\$500	\$500–\$999	\$1000–\$1999	≥\$2000
Rural				
Viandas* only	27.4	19.9	9.9	5.9
Rice + beans, protein	56.0	11.8	22.5	29.4
Urban				
Rice + beans, viandas	34.7	15.3	7.8	3.0
Milk, viandas, fruit or vegetable	2.9	8.9	17.2	29.9

*Viandas, traditional starchy root crops and fruits (e.g., plantains, yams, cassava) central to the Puerto Rican diet.

Dinner: 2 most common patterns, by income level				
Dinner pattern	<\$500	\$500–\$999	\$1000–\$1999	≥\$2000
Rural				
Viandas only	60.4	40.0	29.6	23.5
Rice + beans, protein	0.3	3.1	11.3	29.4
Urban				
Viandas only	67.0	62.1	22.4	9.0
Rice + beans, protein	1.5	4.8	28.4	47.6

Summarized food ingestion per capita					
Food item	Sub-category	<\$500	\$500–\$999	\$1000–\$1999	≥\$2000
Milk (all types)	Rural, per day (oz)	6.4	9.0	13.0	18.6
	Urban, per day (oz)	6.6	11.5	14.6	18.6
Eggs	Rural, avg #/week	1.35	1.81	2.60	3.94
	Urban, avg #/week	1.09	1.99	3.19	4.07
Codfish	Rural, per week (oz)	5.1	6.0	6.6	6.0
	Urban, per week (oz)	5.3	6.7	6.2	4.0
Rice	Rural, per day (oz)	5.6	7.0	7.1	5.9
	Urban, per day (oz)	6.3	6.6	7.3	6.4
Beans	Rural, per day (oz)	2.4	2.5	2.4	2.5
	Urban, per day (oz)	2.6	2.6	2.6	2.7
Fruit (all types)	Rural, in meals/day	4.4	6.6	8.4	47.0
	Urban, in meals/day	2.2	8.8	17.2	57.5
Fat (all types)	Rural, per week (oz)	9.3	11.7	14.4	17.7
	Urban, per week (oz)	12.2	14.7	17.6	17.7
Sugar	Rural, per day (oz)	2.6	3.3	3.2	3.7
	Urban, per day (oz)	2.7	2.9	3.2	2.9

Part E. Miscellaneous		
Household possessions and activities		
Item	Rural families (%)	Urban families (%)
Have ≥10 books	7.9	28.9
Take a daily paper	19.3	54.9
Have ≥1 magazine	9.0	32.3
Club membership	17.6	31.1
Own a radio	11.8	39.3
Have a car	2.5	6.1

The challenge of how to accomplish this offered Dr. Roberts the opportunity she had been waiting for. I include her actual words outlining her dream project: “to select a remote rural community of some 100 or so families, make a detailed study of all aspects of living conditions for every family, and then on the basis of findings have all agencies concerned plan and carry out a concerted program to help raise the standard of living in every family” (3).

The governor wholeheartedly supported this idea, and a green light was given for the enactment of the project. The first order of business was to establish a team that could guarantee finances and personnel to carry out the study. Dr. Roberts was placed in charge of this task. Consideration of the site came next. This was her method - Here I excerpt sections of Dr. Roberts’s description on how the selection was made: “In selecting the community for the project it was agreed that it should be a distinctly rural one with little or no contact with an urban center; that it be a relatively poor area with few if any large land-owners; that it have in the neighborhood of 100 families; that it have a school and that the School Superintendent be interested and willing to cooperate in the project. At the request of the directors of the Regionalization Program of the Department of Health it was agreed to choose a community within the area covered by the Bayamon District Hospital” (3).

Within this area, the town of Comerío, was identified for more intensive work. The community chosen was Doña Elena Alto, a sub-barrio of Comerío, located in a mountainous tobacco growing area. It consisted of some 100 homes scattered among the hills. The school, which was the center of activities, was about an hour’s distance from Comerío. The “roads” were mere trails, winding over and around steep hills. They were rough and rutted, and in the rainy season were deep in red-clay mud (1).

The *Doña Elena Project* was initiated in 1958 and continued for five years. First, a general meeting of all community members was held in which the project was explained and questions were answered, all resulting in enthusiastic support. The framework was structured using the *Patterns of Living* study (2). Although 12 years had passed between these two projects, initial conditions in the Doña Elena community resembled those of isolated rural areas of 1946, as documented in Table 1. Dr. Roberts needed to begin again, but this time she had the resources to make meaningful improvements. As in the earlier study, families continued to be interviewed at home, with questions covering demographics, health, education, nutrition and diet, living space, household items, hygienic and social practices, and sources of income, among others. This time, however, the betterment of the community would not be limited to evaluation but would include the changes needed to improve conditions.

Table 2 presents a summary of the results of the survey.

Medical and dental care were made available to all children and some adults. For education, the schoolhouse was improved, the National School Lunch Program was strengthened, and stricter attendance was encouraged. For diet and nutrition, personnel from the home economics department worked with families to improve dietary habits. The diets used were based on a food plan developed by the Puerto Rico Nutrition Committee specifically for Puerto Ricans (6) and incorporated into school meal programs. The data in Table 3 show the progressive improvement in family meals, especially breakfast. Increased consumption of eggs, meat, and milk was made possible through the availability of refrigeration.

Table 2. Summary of results: Doña Elena Project

Note: \$1.00 (1958) = \$11.52 (2026).		
Part A. Family information		
Demographics and education		
Characteristic	Year 1 (n = 100)	Year 5 (n = 90)
Number of individuals	728	663
Male (%)	52.0	NR
Female (%)	48.0	NR
Average family size*	7.3	7.4
Age <16 years (%)	55.3	NR
Age 16–39 years (%)	26.7	NR
Age ≥40 years (%)	18.0	NR
Highest grade attained (%)		
None	24.0	NR
1–3	21.0	NR
4–5	29.0	NR
6–8	25.0	NR
School attendance ≥80%	37.0	83.0
Includes basic family members and others. NR, not reported.		
Family income per year		
Income range	Year 1 (%)	Year 5 (%)
<\$200	22.0	NR
\$200–\$499	29.0	NR
\$500–\$799	25.0	NR
\$800–\$999	10.0	NR
≥\$1000	14.0	NR
<\$1000	56.7	NR
\$1000–\$1999	29.7	NR
\$2000–\$2999	13.6	NR
≥\$3000	7.4	NR
Part B. Housing conditions		
Ownership status		
Category	% of Families	
Own	40	
Rent	14	
Land grant	46	
Housing items and conditions		
Housing item/Condition	Year 1 (%)	Year 5 (%)
Families with electricity	0	78
Families with refrigerator	0	2
Families with radio	0	64
Families with television	0	21
Families with electric iron	0	64
Families with piped-in water (catchment)	9	≈100
House needs repair(s)	46	≈100 improved
Need more cooking utensils	67	NR
Need more rooms	64	NR
Need storage facilities	94	NR
Kitchen needs repair(s)	93	≈100 improved
Need latrine	92	≈100 sanitary facilities
Need to replace fogón	95	≈100 smokeless stove

Agriculture and Animal husbandry		
Category	Year 1	Year 5
Families with gardens	6	27
Fruit trees	0	148
Acerola	0	60
Lime	0	34
Guava	0	36
Papaya	0	18
Families with cows	58 (all low breed)	75 total (30 high breed)
Hens	53	570
Pigs	63	NR
Goats	16	NR
Rabbits	2	27 (Year 2 data)

Part C. Health conditions: Children		
Nutritional and Physical status		
Condition	Year 1 (Initial Results)	Year 5 (Final Results)
Nutritional adequacy	—	Improved diet
Low minerals (calcium, iodine)	—	Greater intake
Low vitamins (A, C, riboflavin)	—	Greater intake
Low protein	—	Greater intake
Low total calories	—	Greater intake
Below standard height	24% normal height	Gained 64% over control
Below standard weight	26% normal weight	Gained 68% over control
Lack of muscle tone	—	NR

Dental findings		
Condition	Year 1 (%)	Year 5 (%)
Caries	81	NR
Caries per child (avg)	3.8	NR
Gingivitis	72	NR

Part D. Diet		
School meals		
Condition	Year 1 (%)	Year 5 (%)
Accepted by children	11	95
Eating Patterns: See Table 3.		

Table 3 presents eating patterns in the first, second, and fourth years.

As was the case with the *Patterns of Living* study, the general findings are summarized in this table. A full discussion of the results is available in the original publication (3). In addition, a comparison of the data in Tables 1 and 2 is suggested. Although one project finished in 1946 and the other began in 1958, the similarity of results is striking, especially among rural households in the *Patterns of Living* study. Yet, this likeness should not be surprising; little had been done to improve living conditions in the vast majority of isolated communities during this period. Until accessible roads were constructed, outlying populations remained “frozen in time.”

Land use was expanded through the cultivation of gardens and fruit trees, all supervised by the state agronomist. The government supported these programs with small grants and provided goats and cows to supply fresh milk. A highly successful initiative was the provision of breeding hens, with the number of hens increasing ten-fold in five years. A major accomplishment was paving the main road. Although this achievement may seem trivial, it meant much

Table 3. Eating patterns: first, second, and fourth year

Breakfast patterns by study phase			
Breakfast pattern	Year 1* (%)	Year 2** (%)	Year 4*** (%)
Coffee only	70	39.8	33.7
Black coffee	15	7.2	5.0
Coffee with milk	55	32.6	28.7
Coffee with milk + cereal/CHO	23	47.0	50.0
Coffee with milk, cereal, protein	6	9.6	16.3
Other	1	3.6	—

Lunch patterns by study phase			
Lunch pattern	Year 1 (%)	Year 2 (%)	Year 4 (%)
<i>Viandas</i> as the basis	96	86.7	90.0
<i>Viandas</i> only	22	2.4	3.8
<i>Viandas</i> plus protein (not codfish)	10	9.6	27.5
<i>Viandas</i> plus codfish	43	50.6	36.2
<i>Viandas</i> plus other protein and codfish	14	24.1	22.5
<i>Viandas</i> plus other food, not protein	7	—	—
Other	4	13.3	10.0
Cereal with milk	—	13.3	—
Cereal or <i>viandas</i> with protein	2	—	—
Other	2	—	10.0

Dinner patterns by study phase			
Dinner pattern	Year 1 (%)	Year 2 (%)	Year 4 (%)
Rice and beans as the main dish	90	75.9	86.7
Rice and beans only or with CHO	65	39.8	23.4
Rice and beans + protein	25	36.1	63.3
Other	10	24.1	13.3
Rice or <i>viandas</i> + protein	5	8.4	—
Soup or <i>asopao</i> †	4	9.7	—
Rice only	—	6.0	—
Other	—	—	—

*100 families. ** 90 families. *** 90 families.

†A traditional Puerto Rican thick rice soup.

more to the community, offering its members a means to overcome isolation. Income increased and the community developed a strong sense of optimism.

An important feature of the project was that results from the Doña Elena community were compared with those from a nearby community that served as a “control.” In this community, children’s weights and heights were recorded, and medical and dental examinations were performed, but nothing else. Compared with the control children, the children from Doña Elena showed superior growth after five years and greater improvement relative to standard growth tables. The significance of the project stretched well beyond the boundaries of Comerío. The Doña Elena community was representative of some 300 similar underdeveloped communities.

This integrated community development model could be applied to improve conditions throughout the island. Indeed, Governor Muñoz Marín began making plans to extend this model to other communities. In July 1960, the Legislature passed a law (Law 139) establishing an initial fund of \$300,000 to extend programs similar to those carried out in Doña Elena to other isolated areas, and creating a commission of seven members appointed by the Governor to administer the fund.

Since this historical note is intended to highlight the work of Dr. Lydia J. Roberts, the discussion of isolated community projects will not be continued. Suffice to say that each year, increased appropriations were provided for new sites, and by 1963, programs were being implemented in 21 communities.

In closing, the author refers back to the introductory paragraph, which states that only two studies of Dr. Roberts would be presented. Many others could be considered, but they would all reflect the same underlying intention: to improve the well-being of individuals and their communities. She devoted her life's work to achieving this goal. For this reason, the title of this article is *Dr. Lydia J. Roberts – Puerto Rico's Doyenne of Nutrition*.

Resumen

El año 2026 marca el 80 aniversario de la Dra. Lydia J. Roberts asentarse en Puerto Rico. Para conmemorar esta ocasión, es apropiado presentar una nota histórica sobre su experiencia en Puerto Rico. Antes de continuar con su labor en Puerto Rico en 1946, ya había tenido una carrera destacada en la Universidad de Chicago como una de las líderes en el campo de la nutrición. La jubilación obligatoria solo significó para ella la libertad de comenzar una nueva etapa, que consistió en continuar sus estudios en Puerto Rico. Figuras clave que apoyaron su trabajo fueron Jaime Benítez Rexach, rector de la Universidad de Puerto Rico, y Luis Muñoz Marín, gobernador de Puerto Rico. Sus estudios sentaron

las bases para el desarrollo de futuros programas de nutrición orientados al bienestar de la población puertorriqueña. Dos de estos proyectos, descritos en este artículo, son *Patterns of Living in Puerto Rican Families* y *The Doña Elena Project*. Sus publicaciones originales, en forma de folletos, los hacen relativamente difíciles de conseguir. Esta presentación actual es la primera en combinar los hallazgos generales de ambos estudios y la primera en presentarse en formato de revista académica.

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References

1. Doyle MD, Wilson ED. Lydia Jane Roberts: Nutrition Scientist, Educator and Humanitarian. American Dietetic Association; 1989.
2. Roberts LJ, Stefani RL. *Patterns of Living in Puerto Rican Families*. University of Puerto Rico; 1949.
3. Roberts LJ. *The Doña Elena Project: A Better Living Program in an Isolated Rural Community*. University of Puerto Rico; 1963.
4. Consumer Price Index Data from 1913 to 2026. US Inflation Calculator. Accessed; April 30, 2026, 12.26 pm. <https://www.usinflation-calculator.com/inflation/consumer-price-index>
5. Hoyert DL. Maternal mortality rates in the United States, 2021. NCHS Health E-Stats. Published 2023. doi:10.15620/cdc:124678
6. Roberts LJ. A basic food pattern for Puerto Rico. *J Am Diet Assoc*. 1954;30:1097-1100.