CHILD NUTRITION IN LATIN AMERICA

SOME LATIN AMERICAN NUTRITION ACTIVITIES

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Top: Lunchroom of the "Mitre" Kindergarden, Buenos Aires (under supervision of National Institute of Nutrition); Healthy Child Contest, Mexico; Second row: left, National Institute of Nutrition, Buenos Aires; center, Domestic Science School, Uruguay; right, School Garden, Chile; Third row: Diet Kitchen, Children's Hospital, Cuba; Popular Restaurant, Peru; Bottom: Donors with their children, Municipal Lactarium of Buenos Aires: Boys Harvesting Grain at San Antonio Asylum, Colombia. Photos courtesy of Consumer's Guide, U. S. Dept. of Agriculture; The Grace Line; National Geographic Society; Pan American Union; and the Institutions mentioned.
CHILD NUTRITION IN LATIN AMERICA

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One might begin the history of child welfare in Latin America, even from the nutritional standpoint, with the pre-Columbian era. Not only were certain gods and goddesses—for instance, the Mayan Zukuy-kak, Ixmol (goddess of childhood; one month, Mol, was devoted to her), and Ixchel (goddess of maternity) and the Aztec Ixtlilton or Tlaltetecuin (god of sick children) and Yoaltciti (called on by midwives for assistance)—especially relied on for the care and protection of mothers and children; there were also customs and traditions intended to safeguard mother and infant, and some of these had to do with nutrition. The diet of pregnant Aztec women was regulated. Aztec women of all classes always nursed their children until the infants were two and a half to three years old, and if, because of severe illness, a wet-nurse had to be employed, care was taken to select one in good health and with good milk. The Mendoza Codex appears to show that the diet of the Aztec child (mainly tortillas, or corn cakes) was prescribed according to age.

1 Sahagún, Bernardino de: “Historia General de las Cosas de Nueva España,” (about 1559-80), Ed. Pedro Robredo, Mexico, D. F., 1935, pp. 30, 37, 175, 178 (Book I, Ch. XVI, VII; Book II, Ch. XXXV); Flores, Francisco A.: “Historia de la Medicina en México,” Secretaría de Fomento, Mexico, 1936, Tomo I, pp. 28, 205, 272, 342. Both the Mayas and Aztecs had a god of corn and agriculture. Pre-Columbian theogony is rather confusing, since succeeding civilizations adopted or adapted wholly or in part the gods of their forerunners, more or less as did the Greeks and Romans. Sometimes the attributes or the names were changed. Thus Tzapotitl, Mayan goddess of medicine, was replaced by the Aztec god Xipe; and Ixchel by Cihuacoatl.

2 To judge from the description by Katheryn MacKay (“Mayan Midwifery,” p. 64, in “The Peninsula of Yucatan, Medical, Biological, Meteorological and Sociological Studies,” by George Cheever Shattuck, Carnegie Institute of Washington, 1928) present-day practices among Mayan midwives differ but little from the methods used by the Aztecs before the Conquest (see Flores, supra, who relies in these matters chiefly upon Sahagún, Torquemada, and Gomara).

3 Sahagún, and Flores, supra. Diego de Landa (Relación de las Cosas de Yucatán, about 1566, 7th ed., with notes by H. Pérez Martínez, Ed. Pedro Robredo, Mexico, D. F., 1935, Ch. XXX, p. 132) remarked that Mayan children nursed until three and four years of age, and that during the first couple of years they were “wonderfully pretty and fat.” The lack of an adequate substitute for mothers’ milk (the use of animal milk seems to have been unknown to the Indians; cattle and goats, as well as the horse, were introduced by the Spaniards, and the native bison would hardly appear to be good material for domestication) was probably responsible for the late weaning, though it is a sad fact that some present-day children in supposedly more civilized countries see little milk after their first six months. The protective ancient custom of long nursing still postpones the problem of mal-nutrition until after first infancy in some regions. This was pointed out in a recent report from Paraguay, where, in rural areas, women nurse their children for two years, supplementing the diet after the first six months with other foods (Bol. Min. Salud Publ., No. 1, Aug. 1940, p. 31). With regard to this area, it is interesting to recall that the Guaraní mothers are said to have watched their diet during pregnancy, and to have fasted, so that the infant would be more inclined to suckle after its birth. Even the husband is reported to have fasted. (Plass u. Barbels: “Das Weib,” Leipzig, I, p. 912-920.)

4 Both the Mayas and the Aztecs laid much stress on the physical training of children. Incidentally, one of the earliest Brazilian books, (1790), and the first in Portuguese on physical training, was Melo-Franco's “Tratado de Educación Física de los Meninos”; and this subject has since received a great deal of attention in Latin America.
The Aztecs also had orphanages, though little is known about their operation. In Peru, the people were required to till, first, the lands of the Sun, then those of the aged, the sick, widows, orphans, and soldiers, before their own and those of the Inca, and in times of shortages the Inca's storehouses could be drawn upon for food supplies.

The Spanish conquerors established at an early date institutions for orphans (Mexico, 1532), as well as schools and hospital wards for children. While food, shelter and clothing for the abandoned infant until it was old enough to be self-supporting, was not sufficient; and that not only the orphan or deserted child, but also the underprivileged children of the poor, needed intelligent care and attention if they were to become true assets to their country and happy, integrated individuals.

The latter part of the 19th century saw the development, in Europe and in America, of an ever-increasing interest in the child as a part of the human capital of the nation. It was realized that the mere provision of food, shelter and clothing for the abandoned infant until it was old enough to be self-supporting, was not sufficient; and that not only the orphan or deserted child, but also the underprivileged children of the poor, needed intelligent care and attention if they were to become true assets to their country and happy, integrated individuals.

The study of children's diseases became a special and important branch of medicine. Clinics for the diagnosis and treatment of children's diseases were established in country after country. Moncorvo, Sr., had a Children's Service in his Polyclinic in Rio de Janeiro (established in 1881), and endeavored to secure permission for the opening of a Children's Polyclinic, an ambition which his son was to realize in 1901 (Instituto de Protecção a Infancia, organized on a private subscription basis in 1899 and inaugurated in 1901). Argentina's pioneer hygienist, Emilio Coni, organized a school medical service in 1881 (donating his own

9 Flores, supra. It is said, however, that Aztec parents sometimes sold their children into slavery because of poverty. The slavery was apparently at times more like an indenture or apprenticeship. (Prescott, W. H.: "Conquest of Mexico." Mod. Lib. Ed., 1938, p. 29).

Garcilaso: "Historia General del Perú," Madrid, 1800, II, pp. 280-90. Childhood was not long the time for play, however, for according to Ondegardo, children five years old worked at spinning wool (Prescott, W. H.: "Conquest of Perú," Mod. Lib. Ed., 1938, p. 758). The Aztecs distributed food to the poor (Torquemada), and on one occasion, in 1452, when the royal depots failed, Moctezuma I authorized the people to try to obtain food from other countries.

Quiroga's institution included a hospital, a foundling home and a school, and wet-nurses were employed. His work anteceded by more than a century that of Vincent de Paul in Perú. A successor of Quiroga, Alvarez, followed in his footsteps, and fed and taught children in his hospital (1587) and in the school he opened for them.


9 Not only those of the poor. Pruneda has vividly described another problem, in speaking to kindergarten teachers: "You know, surely, children who arrive at school without having had breakfast, because Mother hadn't gotten up; because the children were left to the care of the maid; because the child had gone to bed too late and scarcely had time to reach school at the proper hour; these children are the more unfortunate in that they have mothers, servants, and food, and are not able to make use of the last because no one is around to help them ... this is not an economic question, it is nothing more than lack of education in the home." (Pruneda, Alfredo: "El jardín de niños y la salud," 2nd. ed., Mexico, 1939, p. 30.)

CHILD NUTRITION 3

services and securing those of friends) while a member of the school board (Comisión Escolar) of two parish schools; a paid medical inspection system was established by the National Education Council in 1886.11 There was a child health center in Matanzas, Cuba, in 1894, and Havana and Santa Clara (Cuba) had them by 1895. Buenos Aires also had a children’s clinic attached to one of its hospitals at an early date, and the noted Argentinian sanitarian, Aráoz Alfaro, was appointed physician of the clinics of the Patronato de la Infancia (Child Welfare Society) in 1894.11,12 The list could be indefinitely extended.

With the return from Europe in 1894 of Luis Morquio of Uruguay— pediatrician, professor, institutor of reforms in the care of orphans and children in public agencies, founder (in 1905), with Aráoz Alfaro of Argentina and Olinto de Oliveira14 and Fernandes Figueira of Brasil, of the Archivos Latino-Americanos de Pediatría, founder of the Montevideo Pediatrics Society (1915), and creator of the International American Institute of Child Welfare (Instituto Internacional Americano de Protección a la Infancia, 1927)15—the children of this hemisphere truly entered the gates of their kingdom. Before him there had been, of course, the work of such men as Centeno and Larguia of Argentina, Dueñas of Cuba, Llerena of El Salvador, and Domínguez of Mexico. They and their successors, the Argentine Ricardo Gutiérrez, of whom it was truly said that as a poet he sang of children and as a physician he healed them; Morquio and his contemporaries and disciples—Eli- zalde, Cibils Aguirre, Schweizer and Garrahan of Argentina, Morales Villazón, Velasco Blanco, and Herzog of Bolivia, Gurgel, Barbosa, Gesteira, Gomes de Mattos, Ygartúa, and Cintra of Brasil, Del Río, Calvo Mackenna, Scroggie, and Sanhueza of Chile, Barberi, Iriarte, 

11 Aráoz Alfaro, G.: “Crónicas y estampas del pasado,” Buenos Aires, 1938, 360 pp., p. 287. In 1875 Coni had urged the organization of a Municipal wet-nurse bureau; in 1884 he won the Rawson prize with his work on the “Causas de la morbilidad y mortalidad infantiles,” which also was awarded a medal by the Academy of Medicine of Paris; in it he suggested such preventive and remedial measures as day nurseries, maternity centers, maternity homes, family assistance, improvement of housing, and education. In 1879 he had made a study of infant mortality in Buenos Aires. The first chapter of his 1887 book on public health is devoted to child care. He was the founder of the Patronato de la Infancia, created a journal of child hygiene, the first day nursery, and the first healthy baby contest, and worked for the teaching of puericulture in the public schools. (Ibid., and also Coni’s own book, “Memorias de un médico higienista, contribución a la higiene pública y social argentina,” Asociación Médica Argentina, 1918).


13 Bol. Inst. Int. Amer. Prot. Inf., Montevideo, 1927–1942. Mention might be made of the publication in a Buenos Aires newspaper, the Telegrafo Mercantil, in 1922, of an article on care of the new-born and treatment of constipation. The first pediatric paper in Argentina was the (1871), sensibly-written thesis of Ortiz-Herrera, on breast feeding of infants.

14 In 1890 Olinto de Oliveira had established a dispensary for poor children in Rio Grande do Sul, and he also took a leading part in an early “Campaign for Child Nutrition.”

15 Aráoz Alfaro, G.: “Simblices y apolojías de grandes médicos,” Imp. y Casa Ed. Coni, Buenos Aires, 1926, 279 pp., p. 251. Of Morquio’s great influence as a teacher, he said, “Era maestro aquí como lo era en Montevideo, y en cualquier país que visitara” (He was maestro here, i.e., Argentina, as in Montevideo, and in any country which he visited.) Morquio was the author of many papers on children’s diseases, and a disease and a symptom bear his name. At the time of his death, in 1934, he had just finished inaugurating a cardiologic center, and a clinic for nursing infants attached to his Institute (one in which both mother and child could be hospitalized), and was working on material for the representation of his country at the coming Pan American Child Congress. The organization of an Inter-American Institute was urged by him in 1919 at the II American Child Congress.
and Umaña of Colombia, Luján of Costa Rica, Aróstegui, Aballí and Indlán of Cuba, Herrera, Gómez and Alarcón of Mexico, Ros and Peña of Paraguay, Graña, Pérez Aranibar, León García, and Krumdieck of Peru, Berro of Uruguay, Oropeza of Venezuela, and other great Latin American pediatrians and physicians interested in child welfare\(^{16}\) (in addition to those previously mentioned)—made full use of the lessons of the past, of the fruits of their own experience, observation, and experiment, and of their colleagues—who exchanging views and information through periodic congresses, journal articles, and tours of investigation and of study. However, only one aspect of the results of their efforts—the influence on nutrition—can be discussed in the succeeding pages.

These men were, of course, conscious of the part played by adequate and safe nutrition in determining the health, and, in fact, the very survival of the child. Their campaigns against infant mortality incorporated attempts to secure safe water and milk supplies (for instance, Aráoz Alfaro’s plea for the establishment of special, hygienic, inspected dairies to provide safe milk for children, and for educating mothers in the proper feeding of their infants, in 1898\(^{17}\)). They were also interested in provisions for safeguarding the health of the child of the wet-nurse (see below) and in educational efforts to induce mothers to nurse their own children. That the health of the child is closely linked with the health of the mother has always been realized by these leaders.

The campaigns against tuberculosis also called for attention to nutrition, and the \textit{Gotas de Leche} (milk distribution centers, usually for infants and pre-school children), \textit{Copas de Leche} (glass of milk in school) and similar efforts were often first initiated by anti-tuberculosis societies or by the Red Cross in its tuberculosis prevention work.\(^{18}\)

From its original position as part of the general child welfare program, or of the anti-tuberculosis or anti-infant mortality campaigns, child nutrition has come today to have a standing of its own, and even its own clinics and services. In discussing this evolution, it may be well to consider the various aspects under separate headings.

**Mother and nursing infant.**—Possibly the earliest efforts to safeguard the child insofar as nutrition was concerned, were those dealing with the nursing infant.

For the sake of both infant and mother, laws requiring that women were to be given lighter tasks during the later months of pregnancy, and for several months to several years after the birth of the child, were promulgated even in the days of the Conquest (Ordinances of 1513 for Hispaniola and Puerto Rico, governing treatment of the Indians). The mother was given special diets during both the pre-Columbian and Colonial periods.\(^{19}\) An Argentine law passed in 1907 per-

\(^{16}\) Obviously, only a few leaders in the field can be mentioned here. An indication of the general interest is given by the list of pediatric societies (See Pub. 141, Pan American Sanitary Bureau) and journals (Pub. 129). Gomes de Mattos (Editor of \textit{Pediatria Prática}, São Paulo), modestly discounting his own work, has suggested that in place of his name the following should appear: from São Paulo, Marcos Filho and Orlando Chisarielli, and in Rio, Moncorvo Filho, Leonel Gonçaga and Raul Carneiro; and later, José Marinho da Rocha of Rio and Pedro de Alcântara and Vicente Baptista of São Paulo.

\(^{17}\) At the I Congreso Científico Latino-Americano, 1898 (\textit{Actas}, Vol. 4, p. 429). He advocated legal protection for the child of the wet nurse; safe supplies of cows’ milk; advice on hygienic feeding. It was at his initiative that the first National Conference on Milk met in Argentina, May 31, 1925.

\(^{18}\) In reviewing child welfare activities, Tumburus stated in 1926 that the \textit{Gota de leche} was an indispensable attachment of every school in the country. (Tumburus, Juan: \textit{ Contribución a la Historia de la Medicina Argentina.})

\(^{19}\) Nicolás León (\textit{La obstetricia en México}, Partes 1 y 2, Tip. Vda. de F. Díaz de León, Mexico, 1910, p. 106) gives the diet prescribed for the mother immediately after childbirth: atole blanco (corn-meal gruel), champurrado (chocolate made with atole) or almendrado (almond milk), and then chicken, bread, toasted
mitted working mothers to take maternity leave without losing their positions. Mexican's 1917 Constitution provided for rest periods with pay, and for two recesses a day during which the mother could nurse her child. From 1919 on, similar protective legislation was enacted, in country after country, in behalf of working mothers.

A logical consequence of the recess for nursing was the requirement that factories employing more than a certain number of women must provide "cámaras de lactancia," or nursing rooms, where the babies might be cared for while the mother was at work, and to which she could come to nurse the infant. The first such nursing room in Mexico was installed in 1920, after a French example, and legislation requiring such accommodations exists in several countries (Argentina, 1924; Brazil, 1932; Venezuela, 1928; Chile, Colombia, Costa Rica, Ecuador, Guatemala, Uruguay, and no doubt others).

Day nurseries (casas cunas, salas cunas, cunas maternales) for the children of working mothers are found in practically all Latin American countries, some of the oldest being those in Argentina (1896) and Venezuela (1895). The children, of course, received their meals at these nurseries. Sometimes the day nursery is a part of, or annexed to, a child-and-maternal welfare center or dispensary, such as have been created by national departments, institutes, or councils of child welfare.

Additional protection for the nursing mother and infant is provided through the

tortillas, and warm water. She was also to stay in bed for several days. This was toward the end of the Colonial period.

Bolivia: Patronato Nacional de Menores y Huérfanos de Guerra (National Board for Children and War Orphans), created by Decree of Mar. 8, 1934, as the Patronato Nacional de Huérfanos de Guerra and merged Apr. 13, 1936 with the then autonomous Patronato Nacional de Menores, which had been established by a Decree of June 14, 1937. The new body is a dependency of the Ministerio del Trabajo, Salubridad y Protección Social (Ministry of Labor, Health and Social Welfare). Its present activities consist chiefly of caring for some 2400 children, mostly war orphans, in 13 localities. (See "Memoria que presenta... el Ministro del Trab., Salub. y Prev. Soc.," A. Ibáñez Benavente, 1941, p. 27.)

Brazil: Instituto de Puericultura (Puericultura Institute), created by Law No. 378 of January 12, 1937, to carry out studies and research on child health problems, and to teach puericulture. It is connected with the University of Rio. The Institute has a maternity ward and shelter, various clinics, nursery, lactarium, diet kitchen, mothers' canteen, child hospital, etc. either within it or annexed, and its educational courses reach three groups: primary school pupils, girls in their last year (it has been suggested that certificate of completion of the puericulture course be required of girls seeking any public employment, just as the certificate of military reserve status is required of men), secondary school pupils and society women; and physicians and university graduates. (Bol. Inst. Puer., Año I, No. 1, 1938, p. 9; I: 2, 1938, p. 138.)

Dominican Republic: Junta Nacional de Protección a la Maternidad y la Infancia (National Board of Maternal and Child Protection), created by Law No. 307 of Nov. 15, 1940, and inaugurated Jan. 5, 1941; it has installed two milk stations and increased the capacity of three maternity hospitals. (See "Public Health in the Dominican Republic," by Venezaño Medrano H., Bol. Of. San. Pan., Jan. 1942, p. 30.)

Ecuador: Departamento de Hogares de Protección (Department of Welfare Homes), a part of the Ministerio de Protección Social y Trabajo (Ministry of Social Welfare and Labor). It supervises the work of various institutions such as the casas cunas or day nurseries, mountain camps (colónias de altura), industrial schools, and orphanages. The Consejo Nacional de Menores (National Children's Council) comes under this Department. (See "Informe... Ministerio de Prev. Soc. y Trab., 1941." Carla Aranda Carcelén, 1941, pp. 24, 247.)

Peru: The Instituto del Niño has established branch Institutes in Canta, Chiclayo, Cuzco, Huancayo, Iquitos, Piura, Puno, Tarma, and Trujillo, and sponsors the organization of child care committees in other cities, which operate milk stations, dispensaries, etc. Its dependencies include vacation camps, prenatal clinics, day nurseries, and agencies for furnishing food. (See "Memoria... Ministerio de Salud Pública, Trabajo, y Previsión Social, 9 déc. 1939-28 julio 1941." Constantino J. Cerralbo, Lima, 1941, pp. 24, 247.)

Venezuela: Consejo Venezolano del Niño, created in 1938; reorganized in 1939, attached to the Ministries of Health and Welfare (Sanidad y Asistencia Social) and Interior (Relaciones Interiores). It plans to or-
maternity coverage of a number of social security systems, assuring to working mothers paid maternity leave, nursing recess periods after return to work, medical, pharmaceutical, and hospital care before, during, and after the birth of the child and for the child up to two years of age, and financial subsidies; and similar aid is often extended to or may be contracted for, the wife and children of the insured worker.24

Child of the wet-nurse.—It was early realized that the child of the wet-nurse (nodriza, ama) needed special protection, and also the child for whom the nurse’s services were secured. In 1537 the Spanish Crown forbade the employment of Indian mothers in Tucumán, (Argentina) as wet-nurses unless the Indian infant was dead, and this was extended to Paraguay and Rio de La Plata in 1609.25 In more modern times, various types of supervision have been set up. The Moncorvo Child Welfare Institute in Rio (1901) made health examinations of wet-nurses and also kept a check on the growth of their infants; São Paulo State had legislative restrictions on wet-nursing by 1904; Uruguay in 1919 passed a law forbidding a mother to sell her milk until her child was six months old; and in 1925 there was established in Montevideo a lactario or center where donors’ milk was extracted and distributed. Similar institutions had existed in Argentina in 1920 or earlier, and in 1928 a Municipal Lactarium was established in Buenos Aires in connection with the Maternity Institute of the Welfare Society. The true lactarium differs from earlier milk collection centers in that only the surplus milk is taken. It is not regarded as a business, the institution merely acting as agent between the donor and purchaser, and about half the milk obtained is given free of charge to needy infants whose mothers are not able to nurse them.26 The Institute of Nutrition of Buenos Aires also has a lactarium; and there are similar establishments in other countries.

Milk-stations.—Whether in connection with child welfare centers, or with tuberculosis control campaigns, Gotas de Leche (“Drop of Milk”—milk distribution station, often with a clinic) and Copas de Leche (“Glass of Milk” distributed in school) were early developments in Latin America.27 The Moncorvo Institute organize regional councils, and the first was created in the State of Zulia in 1940, following the meeting in Maracaibo of the II Venezuelan Child Congress. The Consejo administers or supervises nurseries, a school for the deaf, an agricultural school for delinquent or abandoned boys, etc. (See “Informe del Consejo Venezolano del Niño, 1939-1941,” Caracas.) Venezuela also has an Instituto Nacional de Puericultura, established about 1935; its activities extend out through the rest of the country, particularly through its puericulture training program.24 See “Housing and Hospital Programs of Latin American Social Security Systems,” by O’Leary, Bol. Of. San. Pan., Apr. 1942.

18 “Recopilación de Leyes de los Reynos de las Indias . . . mandadas imprimir y publicar por la Magestad Católica del Rey Don Carlos II,” Madrid, Andrés Ortega, III ed., 1774, Vol. II, Lib. VI, Tit. XVII, p. 271. Ley 88: “Que ninguna India puede faltar de su pueblo a criar hijo de español, teniendo el hijo vivo.” (“Haciéndose reconocido por experiencia graves inconvenientes de faltar Indias de los Pueblos, para que sean de leche: Mándense, que ninguna India, que tenga hijo vivo, pueda faltar a criar hijo de español, especialmente de su Encomendero, pena de pérdida de la encomienda, y quinientos pesos, en que condenamos al Juez, que lo mandare; y permitimos, que haviéndole muerto a la India su criatura, pueda criar la del español.”)


The National Department of Health of Argentina, through its Department of Maternal and Child Welfare, is tackling the problem of milk for infants on a large scale; its Milk Kitchen (Cocina de Leche) during 1940 distributed 558,772 liters of whole cow’s milk; 296,800 liters of mothers’ milk; 5,992, 237 kg. of powdered milk; 37,851 liters of reconstituted condensed milk; 16,716, 106 liters of modified milk, as well as flour, cereals, sugar, and other foods. (“Memoria del Departamento Nacional de Higiene, 1940,” Bol. Sanitario, Jan.-Mar. 1941.)

26 Incidentally, the first Gota de Leche in Madrid seems to have been the one founded by a Cuban physician, Dr. Rafael Ulicia. Another Cuban, Dr. Francisco Vidal Solares, founded the first clinic for nursing infants in Barcelona, in the last part of the 19th century. (Trelles, Carlos M.: “Contribución de los Médicos Cubanos a los Progresos de la Medicina,” Habana, 1926, A. Dorroche, 270 pp., p. 30).
CHILD NUTRITION

of Brazil (1901), the Patronato de la Infancia of Chile (Gota de leche and mothers' clinic established in May, 1908),\footnote{This may refer to the Ollas Infantiles (literally, "children's kettle of stew"), founded in Santiago about 1908. The society Ollas Infantiles eventually had 20 Ollas in the working quarters of the city, feeding 2,500 children in public and private schools. A mixture of toasted wheat meal and sugar, cooked in boiling water, was the main dish. It is possible that the 1908 gotas de leche were connected with this program. (Nelson, Ernesto: "El alimento en la escuela-la cantina escolar y sus derivados," Informaciones Sociales, Lima, June 1939, p. 667.) An even earlier Chilean effort was the Casa Central de Alimentación, Educación e Higiene, founded in Valparaiso in 1894 by the Sociedad Protectora de la Infancia (organized in 1889). It furnished about 120,000 rations a year and cared for some 500 children, according to a 1911 report. (Ferrer, P. L.: "Higiene y Asistencia Pública en Chile," 1911.) Chile had a Congreso Nacional de Gotas de Leche in 1919.} and the Asistencia Pública of Montevideo, Uruguay (1907),\footnote{Uruguay had 22 Gota de Leche-clinics in 1941, 18 of them in the interior of the country (Rossi de Alcántara, Celia: Arch. Ped. Urug., Aug. 1941, p. 545).} had such milk stations operating on the principle of inducing mothers to nurse their children if possible, and where this was not possible, to supply them with good, safe milk. They nearly always operate in connection with a children's clinic or health center.

Argentina had Gotas de Leche before 1924; the one in Tegucigalpa, Honduras, was opened in October, 1925;\footnote{In 1939 the Department of Child and Maternal Welfare of Colombia had 50 Gotas de Leche, with 7,442 in attendance (Ministerio de Trabajo, Higiene, y Previsión Social, Pub. No. 6. "Trabajos presentados por la Delegación de Colombia al VIII Congreso Panamericano del Niño," 1939, 174 pp., p. 11. The total number of child and maternal welfare services of all types, was some 685. See also in the same booklet the description of a rural service: "Una Gota de Leche Rural en Colombia," by Guillermo Echeverry. It cost 250 pesos per month to run the Gota for 50 children, 135 pesos being spent for milk. The station had a nurse.) the one in Tegucigalpa, Honduras, was opened in October, 1925; Colombia had them by 1926 (auspices of the tuberculosis society);\footnote{Bol. Min. Salud Púb., Paraguay, No. 1, Aug. 1940, p. 52.} Costa Rica by 1927; and Ecuador, El Salvador, Guatemala, Mexico, Paraguay, Peru, and Venezuela\footnote{The Maternal and Child Welfare Division of the Ministry of Health and Welfare operates 40 milk stations in Caracas alone. (Bol. Of. San. Pan., Dec. 1941, p. 1312. They were attended by 101 mothers and 1,387 infants daily, in 1940, and distributed 517,205 liters of milk.)} at undetermined dates. Two were opened in the Dominican Republic in 1941. Bolivia plans their creation.

Copas de Leche were instituted as early as 1907 in the schools of Buenos Aires and other Argentine cities (by 1925 the Consejo Nacional de Educación was operating 154 copas in the city of Buenos Aires, supported by private organizations and the municipality, with a subsidy of 300,000 pesos yearly, and some 20,000 children were also benefited by the Miga de Pan or "crumb of bread," the Taza de Caldo or cup of broth, the Plato de Sopa—soup, Plato de Arroz con Leche—milk and rice, and Plato de Mazamorra—boiled corn). A copa de leche was opened in the Moncorvo Filho Dispensary in Niteroi, Brazil, in 1917, by Dr. Almir Madeira, for the benefit of a nearby school, and Rio de Janeiro is said to have 20 stations for the distribution of soup.\footnote{Cod liver oil was sometimes furnished with the copa de leche.} Montevideo's copas de leche, founded in the 1920s, have been substituted by school lunches, and this has been a general tendency in all countries. However, in 1940, two copas de leche were inaugurated in Asunción, Paraguay, for the benefit of children not yet aided by the school lunch program.\footnote{Cod liver oil was sometimes furnished with the copa de leche.}

Vacation camps, etc.—Summer vacation colonies and prevantoria to which weak or undernourished children could be sent for fresh air, sunshine, rest, and good food, were often established in connection with tuberculosis control campaigns, but have come to be regarded as excellent localities for building up any child. The first vacation colony in Latin America\footnote{This refers to the Ollas Infantiles (literally, "children's kettle of stew"), founded in Santiago about 1908. The society Ollas Infantiles eventually had 20 Ollas in the working quarters of the city, feeding 2,500 children in public and private schools. A mixture of toasted wheat meal and sugar, cooked in boiling water, was the main dish. It is possible that the 1908 gotas de leche were connected with this program. (Nelson, Ernesto: "El alimento en la escuela-la cantina escolar y sus derivados," Informaciones Sociales, Lima, June 1939, p. 667.) An even earlier Chilean effort was the Casa Central de Alimentación, Educación e Higiene, founded in Valparaiso in 1894 by the Sociedad Protectora de la Infancia (organized in 1889). It furnished about 120,000 rations a year and cared for some 500 children, according to a 1911 report. (Ferrer, P. L.: "Higiene y Asistencia Pública en Chile," 1911.) Chile had a Congreso Nacional de Gotas de Leche in 1919.} appears to have been the one
founded in Argentina in 1902, which was followed by those in Chile (1904), Cuba (1911), Brasil (1916), Colombia, Ecuador, Paraguay, Peru, Uruguay (1929), Venezuela, and others. Mexico in 1933-34 opened a School of Physical Rehabilitation (Escuela de Recuperación Física) in which nutrition received special attention. There were health schools, open air schools, and similar institutions in Buenos Aires, La Paz, Rio de Janeiro, Santos, and Montevideo (1913). The first preventorium for children who had been exposed to tuberculosis was opened in Banfield, Argentina, in 1919 (at the initiative of Aráoz Alfaro), and the first in Uruguay in 1912 (auspices of the tuberculosis society). Brazil, Chile, and other countries also have preventoria. The modern agricultural schools for delinquent and problem children, such as the Venezuelan Instituto de Pre-Orientación at Los Teques (operated by the Consejo del Niño) also pay careful attention to nutrition.

Cantinas and Refectorios maternales.—Cantinas for mothers, at which food, clothing, medicines, and even financial subsidies are distributed to mothers to enable them to care for their children at home, have been established in a number of countries—Argentina (before 1924), Chile, and others. Refectorios or lunchrooms (often supplying medicines as well) for mothers and their pre-school children, have been opened in Argentina, Peru, Uruguay, and elsewhere.

School lunchrooms and canteens.—Nearly all Latin American countries now have regular school lunch programs, administered by the Ministry of Health or that of Education, sometimes in cooperation with municipalities, school boards, parents, and special councils. Often (as, for instance, in Argentina, Colombia, and Mexico) the school garden supplies much of the produce for the school lunch (see below), and additional supplies may be brought from home by some children, while parents assist in the preparation of the actual lunch or in garden work, increasing the sense of cooperation and responsibility, and affording an opportunity for educational demonstrations. The school lunch movement began about 1926, gradually replacing the Copa de Leche (see above).

Present programs include those of: Argentina (in 1939 it was estimated that 628,709 Argentine school children received some sort of school meal provided by private or official institutions: 181,226 attended school lunch rooms or comedores escolares; 92,739 received a plate of mazamorra—boiled corn, frangollo or locro—stew; 264,904 received at least 200 grams of milk daily; 38,467 received a jar of warm mate; and 51,373 were given bread); Bolivia (some children now receive an "inadequate" school breakfast, but development of a real program is planned); Brazil (certain States, such as Bahia and São Paulo, have been especially active. A national law provides standards for school lunch programs); Chile (free

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34 Founded Jan. 29, 1934. In 1934, 1,300 children benefited from it; and the number was growing. (Proc. Sobbio, C. E., "Memoriam," VII Pan Amer. Child Cong., Vol. I, p. 1006.)

35 Refectorio is used in Argentina to refer to the institution created by Escudero of the National Institute of Nutrition to furnish all types of aid—medicine, medical care, food, etc., except actual hospitalization.


37 Report of Ministry. See Note 23.

38 "Bol. Inst. Puericultura, 1938-41. In 1936 the State of Sao Paulo reported that there were lunchrooms in 220 State schools (Secretaria da Educação e da Saúde Pública: "Annuario do ensino do Edo. de S. Paulo, 1938-39," 655 pp., p. IX.)
breakfasts were furnished in certain Chilean towns in 1930. The budget for school lunches was increased from 1 million pesos in 1939 to 6 million in 1940; during the latter year, with the cooperation of the Department of Nutrition, municipalities, and school aid boards, the popular restaurants, of which Chile had 33, furnished 1,500,000 rations to school children. In 1940 it was reported that about 58,000 children received school breakfasts.\(^4\) Colombia (local and private programs date back to 1914. In 1939, about 30,000 children received free breakfast or lunch, the programs being administered locally with financial aid from the national government; approximately 1 million dollars were spent by national and local governments in that year. Two thirds of the programs were in four of the 14 Departments.\(^4\) Costa Rica (by 1927, Costa Rica had cantinas escolares, to furnish food, clothing, and other supplies); Cuba (\(^1\) has furnished free lunches for about 20 years’);\(^4\) Ecuador (a law was passed in 1938 providing for the establishment of school lunches; in Quito, school children were given free lunches in 1927);\(^4\) Haiti (in 1937 it was reported that some school restaurants had been established, in different parts of the country, with funds from the Government Lottery, and others were supported by the President);\(^4\) Mexico,\(^4\) Paraguay (the Ministry of Health in cooperation with municipalities, the latter turning over 15% of municipal revenues for the purpose, has organized School Lunch Commissions—Comisiones Pro-Comedor Escolar, which, by the end of 1940 were functioning in more than 80 rural towns);\(^4\) Peru (had a lunch program by 1935. In 1940 the Refectorios Escolares of the Instituto Nacional del Niño furnished 2,412,796 meals to school children in 13 localities);\(^4\) Uruguay (had school lunches by 1926; in 1940 there were 652 school lunchrooms feeding 34,646 children);\(^4\) and Venezuela.\(^4\)

Popular restaurants.—Bolivia, Brazil, Chile, Mexico, Peru, Uruguay, Venezuela, and other countries have established comedores populares or restaurantes populares, serving balanced meals at low cost—usually in densely populated, impoverished centers, or in places accessible to large numbers of children.

\(^{15}\) Report of Dr. Garcés to the IV Pan American Conference of Directors of Health (Bol. Of. San. Pan., Mar. 1941, p. 244), and other references in Relática.


\(^{21}\) In 1940, breakfasts were being given Mexican children in 20 localities (2000 breakfasts) by the Secretary of Public Assistance in cooperation with mothers’ clubs, teachers, etc. About 70% of the children receiving breakfast were of school age, the rest, pre-schoolers, and the meals were served in schools, child centers, etc. (Sra. Asistencia Pésb.: “Informe, 1940-41,” Gustavo Baz, Mexico, D.F., 190 pp., pp. 18, 131, 121.) A recommended menu was 250 cc. of milk, 20 grams of sugar, 15 gr. of oats, a fried egg, and a banana.

\(^{22}\) Bol. Min. Salud Pub., No. 1, Aug. 1940, pp. 29, 46. The first lunchroom was opened April 8, 1940 in San Lorenzo de Campo Grande, and about 50 more are in operation. Parents and other persons have contributed where municipal and national revenues were not sufficient. Industrial firms have helped establish lunchrooms for children of their employees. It is proposed to have the preschool children come to school one day a week for a combined kindergarten-mother's education class, during which nutritional and other defects will be studied and cared for. A typical menu included a large plate of stew (locro) with 150 grams of meat, biscuit (galleta) or mandioca, and a dessert of fruits. The cost was $3.25 c/l for each student, or about one cent U. S.

\(^{23}\) Report of Ministry. See Note 15.


\(^{25}\) In April, 1940, an experimental comedor escolar serving 12 Federal schools was opened by the Consejo Venezolano del Niño. Some 72 children were given meals, after investigation of their health and family circumstances. (“Informe del Consejo Ven. del Niño, 1939-1941,” p. 39.)
workers. Uruguay was a pioneer in this field, and placed great emphasis on the educational functions of the *comedor*. In some of these institutions, particular attention is given to children; for instance, only persons with families are admitted to the family restaurant or *comedor familiar* opened in Mexico City in November, 1941. In Peru, there are *refectorios maternales* (see above) attached to the *comedores populares*, for furnishing of food, medicines, and other supplies to mothers. In both Chile and Peru, the popular restaurants cooperate in the school lunch campaigns.

**School gardens.**—The school garden movement is rapidly gaining in popularity in Latin America, and its value from both educational and nutritional standpoints is realized. School gardens are said to have been required by one of the Argentine provinces as long ago as 1850; they were suggested in 1931 at the *Primer Congreso Nacional de Alimentación Popular* (First National Nutrition Congress) in Chile; and recommended by the IV Pan American Conference of National Directors of Health, Washington, 1940. Among the countries at present most active in this field are Argentina, Brazil (for instance the State of São Paulo reported 355 school gardens in 1935-37), Chile (which has school gardens as part of its agricultural education program), Colombia, Cuba, the Dominican Republic (which in 1940 had gardens at 635 of its rural schools), Guatemala, and Mexico.

**Nutrition clinics.**—The first nutrition clinic in Latin America appears to have been the one planned in 1926 and inaugurated in April, 1928, as part of the School Medical Service in Buenos Aires. It was followed by the establishment of a special nutrition clinic in the *Casa del Niño* or child health center of Montevideo, Uruguay, in 1929. The Uruguayan clinic has two sections, a diet clinic with outpatient facilities, and a boarding section or infant home where children needing special care and diets may remain for as long as necessary. The Institute of Nutrition of Argentina also has nutrition clinics. A nutrition and endocrine clinic was established in the São Paulo School Health Service in 1938; and a clinic for diseases of the digestive system and nutrition was opened in 1934 in the Polyclinic of that city. Peru's *Clínica de nutrición para pre-escolares*—Preschool child nutrition clinic—established in 1938, had 151 children registered in 1940. Argentina, Chile, and other countries also have nutrition clinics attached to health centers or hospitals.

**Nutrition institutes.**—The National Institute of Nutrition of Buenos Aires (founded in 1928 as a municipal institute), the *Instituto de Alimentación Científica del Pueblo*, of Uruguay, and similar institutions, while not devoted exclusively to child nutrition, are nevertheless greatly concerned with it. It is interesting to note, as an example of inter-American cooperation, the fact that Bolivia and

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50 *El Universal*, Feb. 17, 1942. The *comedor* has a capacity of 1500, and operates Monday through Saturday. Families are enrolled, and before admission, are given a medical and dental examination; those with contagious diseases are not admitted and those with dental defects must have them corrected at the free clinic annexed to the *comedor*. The weekly quotas per family run from 1.80 to 3.00 pesos. A very few free tickets are given, under rigid supervision. The *comedor* is cafeteria style, but there are waiters to help the children. See also *Sra. Asis. Pib.*: "Informe, 1940-41", p. 18.

51 Report of the Ministry. See Note 23.


57 Conversely, other institutions, such as Brazil’s *Instituto Nacional de Puericultura*, Peru’s *Instituto del Niño*, and Venezuela’s *Instituto de Puericultura*, not primarily nutritional, devote much attention to the subject.
Paraguay recently sent physicians to Argentina's Institute of Nutrition for special training in preparation for positions in the national nutrition institutes to be organized in their own countries. Brazil has two Institutes of Nutrition, connected with the Universities of Rio and Sao Paulo.

**National agencies.**—Nearly every Latin American country now has a national division (in the health department or ministry), council, or institute of nutrition: Argentina (Instituto Nacional de la Nutrición; Comisión Nacional de Ayuda Escolar; provincial commissions and institutes); Bolivia (División de Nutrición of the Ministerio de Trabajo Salubridad y Prevención Social); Brazil (Serviço Central de Alimentação, Ministerio de Trabalho, 1940); Chile (Consejo Nacional de Alimentación, Min. de Salubridad, Prevención y Asistencia Social, 1937); Columbia (Consejo Nacional de Alimentación, 1940); Costa Rica (Consejo Nacional de Nutrición, 1940); Guatemala (Comisión de Alimentación, 1940); Mexico (Comisión Nacional de la Alimentación, with state and local committees; Oficina General de Higiene de la Alimentación); Paraguay (Sección de Nutrición, Ministerio de Salud Pública); Peru (Sección Técnica de Alimentación Popular); Uruguay (Comisión Nacional de Alimentación Correcta, 1929; Instituto de Alimentación Científica del Pueblo), and of course, the Nutrition Committee of the Pan American Sanitary Bureau, as the international body, may be mentioned.6

Related in nature are the Milk Commissions, including those of Cuba (Comisión Técnica de la Leche), Chile (Consejo de la Industria Lechera, 1939) and Venezuela (Comisión Permanente de la Leche, 1939). The semi-official Inter-American Committee for the Dairy Industries, 232 Madison Avenue, New York, may also be mentioned.

**Congresses.**—Nutrition, including that of the child, has been an important subject of discussion at Pan American Sanitary Conferences and Conferences of National Directors of Health, due in great part to the work of the late Dr. Justo F. González, of Uruguay. At the latest Pan American Sanitary Conference (X, Bogotá, 1938), a considerable section of the report of the Pan American Committee on Nutrition was devoted to problems of child feeding. Other Congresses, both national and international, have been devoted entirely to the subject of nutrition. The III International Congress on Nutrition was held in Argentina in 1939. Reunions of other kinds, such as the Pan American Child Congresses have also considered the problem of nutrition. The First Inter-American Congress on Indian Life, meeting in Patzcuaro, Mexico, in 1940, adopted recommendations on nutrition (XVII, recommending free school lunches and the organization of popular restaurants; and XXVII, recommending special study of problems of native diets).62 Congresses on milk have also been held (Argentina, Guatemala, Venezuela).

The subject of child nutrition is so closely linked with other fields—nutrition proper, child welfare in general, wages, education, public health—that a survey of it becomes, as Tennyson said of Experience, "an arch, where through gleams that untraveled world." But even this brief review will, it is hoped, afford some indication of what has been and is being done in Latin America concerning this vital problem.

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A glance through the reports on nutritional disorders, dental caries, deficiency diseases, and milk consumption, as reflected in the Boletín de la Oficina Sanitaria Panamericana for the last 14 years (See especially the Crónicas or reviews on Alimentación, Carencia, Puericultura, Leche, and individual deficiency diseases; also, Moll's summary on "Natalidad, Mortalidad Infantil, y Mortalidad Puerperal en las Américas," Bol., June 1930, p. 654) will give an idea of the child nutrition problem. Almost without exception, gastro-intestinal disorders are responsible for the greatest number of infant deaths under one or two years of age; the percentage varies from 11 to 80, but appears to average between 25 and 50. Examination of selected groups of school and pre-school children reveal mal-nutrition and avitaminoses of varying degrees in from 16.26 to 90%, and dental caries in from 20 to 92%, also in varying degree. The consumption of milk in all Latin American countries is admittedly too low, and this factor is considered to be of great importance in regard to the gastro-enteritis rate.

In considering the statistics below, summarized from the Boletín, it must be kept in mind that some of the percentages are based on studies of children in hospitals, clinics, or children's homes, and may not be representative of the whole child population of the country.*

Argentina.—Aráoz Alfaro in 1931 attributed 80% of the infant deaths in Argentina to digestive and nutritional disorders, pointing out, however, that the percentage dropped to as low as one in some parts of Buenos Aires. Of 18,294 infant deaths from 1922-1926 in that city, 33.5% were due to digestive disorders; in 1940 the proportion had fallen to less than 20% (total infant deaths, 2,281; deaths from gastro-enteritis under two years of age, 518). During the same year, of 115,388 children examined in the maternal and child health centers (throughout the country) of the National Department of Health, 11,556 or 10% suffered from diseases of the digestive system. In Rosario, gastro-intestinal diseases were responsible for 52.1% of deaths of children from six to 12 months, 1900-1925; by 1931 the percentage had dropped to 18.8 of infant deaths. In Tucumán in 1922-26 the proportion was 37.3% of infant deaths. In Córdoba Province in 1937, the total number of infant deaths was 3,758, and of deaths from diarrhea-enteritis under two years, 1,247; in Santa Fe city there were 341 infant deaths, and 98 deaths (all ages) from diarrhea-enteritis.

Chance in 1932 reported that examinations of some 140,000 children in 1925 showed 70% with dental caries. Calmette found 81% of caries in 50,000 school children in Buenos Aires Province in 1933-34, and reported that 17.5% came to school very poorly fed and that 3% had neither breakfast or lunch. Escovorri and Notti observed about 1937 that 60.8% of 1,000 Mendoza school children were underweight and 19.8% overweight.

Argentina's milk production was estimated at three billion liters in 1936 (250 liters per capita); the amount consumed directly was 600,000,000 lt (50 lt per capita or 0.12 lt per capita per day), the rest being made into butter, etc. In

* The term "infant deaths" refers to deaths 0-1 yr.; milk consumption figures are for fresh milk rather than condensed or powdered milk.
CHILD NUTRITION

Buenos Aires city, 787,271 liters were consumed daily (about 0.39 l per capita), of which 300,000 were pasteurized. (See also Bol., June 1935, p. 568, report on milk consumption of other Argentine cities.)

Deficiency and nutritional diseases reported in children in Argentina have included goiter (82.4% in school children in some provinces where the iodine content of food and water is low, especially Salta; others have reported 100% in some localities); urolithiasis (Barbuzza and Notti described 24 cases seen in Mendoza, 1918-1935; Repetto found four cases in 4,500 children in Buenos Aires; Oyuelo found four in 7,215; Macera and Messina, five among 25,138 cases 1911-19; Maidagan in Rosario saw nine cases in 12 years); and rickets (said to be rare; López Pondal has said that only isolated cases with light symptoms have come to his attention).

Bolivia.—It has been reported that 90% of the Bolivian population suffer from chronic avitaminosis. In Potosí in 1939 there were 971 infant deaths, and 85 deaths (all ages) from gastro-enteritis. Lara Quiroz about 1932 declared that rickets is rather common in middle class and miners' children of Potosí (attenuated form). In Cochabamba in 1930 and 1931 the amount of clinically evident rickets was low, and the cases seen were mostly from the city.

Brasil.—In Rio de Janeiro from 1903-1926, 40% of infant mortality was due to diarrhea-enteritis, and in 1937 and 1938 Fontenelle found the same percentage. In the same year, de Almeida and de Freitas attributed 27.6% of pre-school mortality to it. In Niteroi, 1927-28, diarrhea-enteritis was responsible for 38% of infant deaths; in Manaus in 1938, for 50.3%. In Recife in 1941 there were 2,600 infant deaths, and 1,779 deaths from diarrhea-enteritis under two years; in Porto Alegre, 1,263 and 756; in Fortaleza, 1,371 and 1,351.

Bourrel said that milk consumption in Rio de Janeiro in 1939 was less than 100 cc per capita (another estimate, 1935, was 137 cc). In October, 1939, the city was consuming 6,313,554 liters, or about 11 gm. per capita daily. São Paulo city was reported in 1941 as consuming about 150,000 liters per day (about 0.12 l per capita). In 1938, Curitiba consumed 13,000 bottles of milk daily, about 65 gm per capita.

Goiter has been reported from most of Brazil. Rickets has been reported, in children living under very unfavorable conditions, but is said to be not common.

Chile.—In 1925, 10.8% of infant deaths in Chile were attributed to diarrhea-enteritis, and in 1929, 14.7%. In a study of groups of infants in 1927-28, 28.2% of deaths were found to be due to digestive disorders. In 1929, 89% of 150 Valparaíso children had dental caries; Urrutia S. reported 44% of 1,007 children aged 1-18 in Concepción as having poor teeth, whereas but 19.8% had good teeth; Silva and Louvèl in 1929 found 40% of 2,238 children examined had poor teeth. Honorato about 1934 found "4th degree" caries in 40% of children in one institution, in 38% of children in another, and in 74% of those in a home for vagabond children.

Coutts and Morales, studying 111 Santiago homes in 1931, found that in 30, with 57 children under five, no milk was consumed; in 25 without children under 10, the members consumed an average of ½ liter each; and in 56 homes with 107 children under five and 316 adults, the milk consumption was 118.1 ce daily per person, which meant that if the children got all of it their share would be 2½ liters. Only 15 homes received enough milk for the children.

Scroggie has pointed out that to the effects of deficient nutrition are often added those of over-crowding, poor ventilation, and lack of sunlight—an observation which would also apply to many other countries. In Valparaíso in 1928 the annual milk consumption was estimated at 44 liters per capita; in 1936 that of
Santiago was said to be 50.7 liters. In 1939 the milk production in the Santiago area was reported as 90,000 liters daily, or about 1/2 glass per person. Landa in 1940 stated that the milk production of Chile was 227,762,000 liters (50 per person yearly), which, after deducting quantities used for butter and cheese, left about 27-30 liters of fresh milk per inhabitant per year, or 82 cc daily. Egg consumption was 2.5 gm., fish 1.1 gm., fruit, 1 gm., butter 1-1.2 gm., and cheese, 1.9 gm. per capita.

Goiter has been reported in parts of Chile, such as O'Higgins Province. Alessandri et al. described 19 cases of pellagra observed in four years (1934-1937, 13 of the cases in the final year) in the Santiago vicinity. Low salary was indicated as an underlying factor in about eight cases and alcoholism in another eight. Calcium and phosphorous deficiency have been reported in connection with dental caries (see above).

Colombia.—In 1920, 34.6% (325) of infant deaths in Bogota were due to diseases of the digestive tract; in 1927, 15.6% of deaths in children under one year, and 16.2% of deaths of children under two, in Colombia, were attributed to the same cause. In 1939, there were 45,423 infant deaths in the country (excluding certain territories), and 15,615 deaths from diarrhoea-enteritis (1003 in Bogota), most of which were undoubtedly in children. From 1928-1932, 34.37% of infant deaths were reported due to gastro-intestinal affections, and from 1925-1934, 30%.

In Bogota (330,000 inhabitants) in 1938, 13,772,943 bottles of milk (723,002 pasteurized) were sold (about 3,200 daily). Some milk was also sold by other sources, not registered with the Food Inspection Department. Medellin, population 175,000, consumed 2,297,560 liters of milk in 1929.

Goiter is common in certain areas of Colombia. Bejarano has pointed out that in Colombia there are social groups in fairly comfortable circumstances which are nevertheless poorly fed, due to lack of nutritional education. This is of course true of other countries as well.

Costa Rica.—In 1927, 41.9% (2,266) of infant deaths in Costa Rica were caused by gastro-intestinal disturbances; and in the Province of San José, the proportion was given as 54.8%. In 1931, Saenz estimated that 23.33% of deaths in Cartago were due to diarrhoea-enteritis. In 1939 there were 1,554 deaths from diarrhoea-enteritis in children under two. Of 14,746 children examined in 1937 at the San José child health center, 4% suffered from gastro-intestinal disorders. The daily milk production in Costa Rica (630,000 inhabitants) was estimated at 62,000 liters in 1937.

Sprue has been observed in Costa Rica, but Pupo was not able to find a definite connection with nutrition. Poña Chavarria and Rotter reported an “avitaminosis edema” which began to appear at the end of 1933, probably as a result of the depression; 31 of the 43 cases studied were under five years of age, and the mortality was 39.5%.

Cuba.—From 1902-1913, the infant mortality in Cuba varied from 50.2% (1912) to 25.8% (1903); in 1924 it was 56.7%. In 1935 the rate per 100,000 population for infantile diarrhoea-enteritis was 87.18. Martinez Fortun, in pointing out that diarrhoea-enteritis is the most important cause of infant deaths in Cuba, has reported that the rate per 100,000 of the whole population has sometimes exceeded 300 (as in 1920). Habana (500,000 inhabitants) was reported in 1935 as consuming 150,000 liters of milk daily, of which 60,000 to 70,000 were pasteurized. Deficiency diseases reported included pellagra (Castellanos described in 1937 a “pellagroid-beriberic syndrome” seen in poor children, especially Negroes), beriberi (Abalfe and Escobar in 1941 reported nine cases in infants, and said the disease was fairly common) and rickets (of 596 children entering one ward of the children's Hospital, only three showed clinical symptoms of rickets, and among more
than 1,000 examined in the outpatient clinic, only 10, which would make the
incidence of the disease in Habana about 1 or 2%; all were Negroes or mestizos,
although rickets has been seen in white children also).

Dominican Republic.—In 1927, 83.4% of infant deaths were due to diarrhea-
enteritis; in 1939, 21%.

Ecuador.—About 1935 the Red Cross reported that 47% of infant deaths in
Ecuador were due to gastro-enteritis. In 1940, there were 1,822 infant deaths in
Guayaquil, and 997 deaths from gastroenteritis in children under two years of age.
Cabrera in 1932 reported that scarcely 30% of Quito working-class families drink
milk, and that the quantity is not over 1 liter per person; Cañeres in 1931 reported
that 40% of the children from 10 months to two years of age did not have milk.
In 1928 Quito (175,000 inhabitants) was reported as consuming 22,000 liters daily
(1,000 pasteurized); in 1931 the pasteurizing plant was furnishing about 3,000
liters a day. Rickets is said to be rare in Ecuador; among 1,500 children attended
in two years at a hospital in Quito, only one case was found. Goiter is prevalent
in certain areas.

El Salvador.—In 1927 there were 2,061 deaths from diarrhea-enteritis among
children under two in El Salvador. In San Salvador, 42.4% of infant deaths in
1929 were due to diseases of the digestive tract. In 1935, 17% of deaths under
two years were from diarrhea-enteritis. In 1940 in San Salvador there were 781
infant deaths, and 355 deaths from diarrhea-enteritis (children under two). In
1937 Romer reported that pellagra is not rare in El Salvador, and described two
cases, referring also to Calvo, who had seen more than 100 cases. The age of the
patients was not stated. Palacios reported cases of sprue in 1924, 1925, and 1927,
and from 1931 to 1936, some 15 cases (mostly in young people).

Guatemala.—From 1922-1926, 39.4% of deaths among children under five years
of age were due to diseases of the digestive system. Of 10,000 children examined
about 1928 (ages 6-14), 92.9% had caries; 23.2% of the bad teeth had to be ex-
tracted (61.5% milk teeth). The percentage of caries in boys was 53.5; in girls,
46.5. Sprue was not reported in Guatemala until 1916. Pacheco Luna observed
6 cases in three generations of the same family; one was cured by dietary treat-
ment.

Haiti.—Sylvain in 1941 estimated that 79% of the deaths of children under one
year of age in Haiti are due to gastro-enteritis, largely because of the use of
inadequate substitutes for mothers' milk. Athrepsy and avitaminosis were
responsible for 8.5% of deaths under one year. During 1940 there were 78 deaths
from diarrhea-enteritis in children under two, in the Haitian hospitals, and
28 deaths outside the hospitals. Milk consumption in Haiti is low, and many
rural inhabitants do not use it. It is always boiled. Rickets is said to be rare,
but spasmophilia relatively common, in Haiti.

Honduras.—During 1926, 279 deaths reported in children under two in Hon-
duras were attributed to diarrhea-enteritis. There were 4,330 infant deaths in
Honduras in the fiscal year 1938-1939, and 699 deaths from diarrhea (age not
stated) during 1939-40. Rickets is said to be rare, but avitaminosis (B) is com-
mon in children; Membreno about 1940 reported 10 cases with a 20% mortality.
Caries is said to be common, especially in white children.

Mexico.—During 1922-1925, 15.7% of infant deaths were said to be due to
diarrhea-enteritis. In Orizaba in 1941 there were 181 infant deaths, and a total
of 403 deaths from diarrhea-enteritis (all ages); in 1939, 206 and 338. The
total number of deaths from diarrhea-enteritis (all ages) in Mexico in 1937 was 83,511
(437.6 per 100,000). Escontría in 1928 reported that 47.2% of 765 children ex-
amined at a clinic were undernourished, and Mazzotti found 62% of 1,000 children
at a clinic undernourished, with gastrointestinal disturbances, 16.26% of them
revealing marked avitaminosis. Castañeda examined 8,000 children about 1937, finding only 50 of them well nourished; he stated that about 90% of the children attending child welfare centers are undernourished.

Milk consumption in Mexico City about 1936 was said to be ½ liter per capita. In that year the Federal District was reported as consuming 125,124,987 liters (78,136,529 certified and 46,988,458 pasteurized), or about one liter per capita. In 1938 the District consumed 132,420,253 liters of pasteurized and certified milk (½ liter per capita daily).

Goiter has been reported in Mexico and the incidence is high in some regions. Ruiz in 1938 reported that pellagra was frequently seen in the country (ages not given). Opinion varies as to the amount of rickets, though the consensus appears to be that it is not common. Sprue has been observed in Yucatán, as has xerophthalmia (Carrillo ranks it as the second most common nutritional disorder there, pellagra being first. The principal victims are children two to three years old, and mortality runs about 16%). Carrillo has described "culebrilla" or tetter as found in Yucatán, and considers it due to a diet almost exclusively of corn. Other conditions reported include gallstones (Silva observed 21 cases in children one to 11; Carrillo Gil reports that every year from six to eight cases of urolithiasis in children are seen in the Yucatán hospital; he has found vesical stones in children with xerophthalmia).

Nicaragua.—Diseases of the digestive tract are reported to be the most important cause of infant deaths in Nicaragua.

Panama.—In 1928, 26.1% of infant deaths in the Canal Zone, Panama City, and Colon, were due to diseases of the digestive tract. In 1939 there were 76 deaths from diarrhea-enteritis in Panama City and 55 in Colon (ages not given).

Paraguay.—During 1914-1925, 23.45% of infant deaths from one to five years were due to diarrhea-enteritis. In 1933 in Asunción, 11% of deaths under one year were due to gastro-enteritis. In 1940 there were 1,174 infant deaths in Paraguay, and 313 deaths from diarrhea-enteritis in children under two. Milk consumption in Asuncion in 1936 was reported as 17,733 liters daily, about 12% of which was inspected and 8% pasteurized. Scurvy was reported in 1934 in the Paraguayan army during the Chaco war, but it was not stated whether children in some parts of the country were also affected.

Peru.—From 1918-1921 in Lima, 39% of infant deaths were due to diarrhea-enteritis, as were 31.2% of those in Callao. In 1928 the proportions were 32.8 and 31.3%. Yori, studying 134 children (7-17) found 55.22% undernourished and 79.1% with dental defects (10.4% very marked), in 1933. About 1936 he reported that 56.43% of a group of 651 middle-class school children were undernourished, either from lack of vitamins or from metabolism disturbances. Suárez found 0.18% rickets among some 32,000 children in Lima in 1933, and 0.16% in 1934; percentages for spasmophilia were 0.11 and 0.09. Sprue has been reported in Peru.

Uruguay.—In 1927, diseases of the digestive system were responsible for 24.7% of infant deaths in Uruguay; for 28.3% of those in 1928, and for 26.9% of those in Montevideo in the latter year. For 1921-1925 the percentage as given by Bauzá was 39. In Montevideo in 1940 there were 1,236 infant deaths, and 423 deaths from diarrhea-enteritis in children under two, and in Uruguay in 1938, 3,521 and 1,972. Schiaffino in 1930 reported that examinations of three groups of kindergarten children revealed 18, 18.5, and 13.7% with debility and anemia and 75, 91, and 76% with caries. Saldán found that of 102 children (3 to 6) attending a nutrition clinic, 36 were underfed, 36 had poor quality meals, and 26 had poorly arranged meals (irregular hours, etc.). In 1928 school medical examinations revealed dental defects in 20% of the 23,600 children examined. Hormaeche,
Carrau, and others have studied infantile diarrheas, and Zerbino in 1940 reported that 41.9% of enteritis and 12.6% of diarrheas in children were due to *Salmonellae*. Among 39,386 children observed in Montevideo clinics 1926-1936, 38 cases of thyroid disturbance were found. Rickets is said to be uncommon in Uruguay.

**Venezuela.**—In 1924 there were 2,946 deaths in Venezuela from diarrhea in children under two, and in 1927, 2,826. In Caracas there were 253 deaths from this cause in children under one. In 1935 there were 234 deaths (all ages) from diarrhea-enteritis in Caracas. In 1940 there were 16,234 infant deaths, and 3,225 deaths from diarrhea-enteritis in children under two. Goiter is prevalent in certain areas of Venezuela. Rickets is said to be rare. Franco in 1939 reported 25 cases of avitaminosis in Caracas children.

**NOTE**

Additional information on child welfare, including nutrition, will undoubtedly appear in the transactions of the VIII Pan American Child Congress (held in Washington in May, 1942).
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