DIET AND NUTRITION IN COLOMBIA*

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IT is impossible to make a detailed study of the status of nutrition in Colombia and determine the exact diet of the people because of the lack of information on the subject. No statistics are kept of the production and consumption of food articles, with the exception of meat and sugar. Therefore nobody knows what quantities of milk, bread, eggs, cheese, butter, fruits, vegetables and legumes are consumed annually. These figures could easily be obtained in the larger cities, but not in rural sections where there are no facilities for so doing.

In spite of the little information available, it can safely be stated that the Colombian diet is deficient as regards quality, standards, and method of preparation; and that it is altogether too uniform.

The quality may be considered acceptable in many parts of the country. Bogotá and most of the higher cities have an abundant and wide choice of foods which are scarce in mild and hot climates, such as milk, bread, cheese, fruits, vegetables and legumes. The market-place in Bogotá is superior to those in European cities in its richness and variety; but this advantage is wasted because of the dietary habits of the people, who lean toward sugary foods and starches. The national diet is unbalanced, lunch and dinner consisting mostly of starchy products and ending with a sugary dessert which upsets the digestion.

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The Colombian method of cooking is also primitive and deplorable. The food is heavily coated with lard or fat, generally from pork or beef, and very hard to digest. To make things worse, there are no sanitary regulations or inspections to control the sale of food which, if eaten when adulterated or spoiled, may have serious consequences. This explains why in some areas—out in the plains, for example—meat is sold and consumed in a state of complete putrefaction. The markets of Támara and Ten, large towns in the cattle-raising area, sell 'marisco', meat from wild rodents (mostly *Echimy*s), piled up in thin slices. It is nothing more than albumin in a state of decomposition. The plains people also have no sense of the nutritional value of milk, which is a paradox, considering the fact that they are in cattle country.

The dietary standards of the rest of the country are no better. Ignorance and indifference prevail everywhere and, in brief, the following conclusions may be made with respect to the Colombian diet: (1) too many starches and sweets; (2) not enough albumin and fats; (3) not enough milk or milk products; not enough eggs; (4) not enough vegetables and fruits; (5) excessive consumption of alcoholic beverages in some regions; (6) not enough calories (should be at least 3,000); (7) poor quality of certain foods, and lack of drinking water in about eight hundred towns.

ORIGIN OF MAIZE*

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THERE have been three general theories regarding the origin of maize: (1) that it originated from pod-corn, *Zea mays tunicata*, which differs from normal maize primarily by a single dominant gene governing the development of a brittle, disarticulating rachis and the production of prominent glumes enclosing the seeds; (2) that maize originated from teosinte, *Euchlœna mexicana*, a wild grass native to Guatemala and Mexico, by direct selection, by large-scale mutations or by the hybridization of *Euchlœna* with a grass now unknown; (3) that *Zea*, *Euchlœna* and *Tripsacum*, the three American Maydœæ, have descended along divergent and independent lines from a remote common ancestor.

New evidence from cytogenetic studies at the Texas Experiment Station suggest that *Euchlœna* has had no part in the ancestry of maize, but is instead the product of natural hybridization of *Zea* and *Tripsacum*. *Euchlœna*, which is intermediate between *Zea* and *Tripsacum* in many characteristics, differs genetically from *Zea* primarily by four segments of chromatin, all of which have genes with *Tripsacum* effects. Hybrids of *Zea* and *Tripsacum* have shown that there is some association between

chromosomes of the two genera and that interchanges of chromatin may occur. The combined data agree in pointing to the comparatively recent origin of *Euchlœna* as the result of natural hybridization of *Zea* and *Tripsacum*.

With *Euchlœna* eliminated from a role in the origin of maize, it is reasonable to assume that maize originated as a mutation from a wild pod-corn once indigenous, and perhaps still to be found, in the lowlands of South America. The primary centre of domestication probably occurred in the Andean region of Peru and Bolivia.

The hybridization of *Zea* and *Tripsacum* which occurred when the two genera were brought into contact with each other in Central America gave rise not only to the new genus *Euchlœna*, but also to new forms of maize which spread in both directions, almost completely replacing pure maize in all regions except the Andean. Cytological evidence on chromosomal knobs supports the view that almost all modern maize varieties are contaminated with *Tripsacum*.

The evidence from history, geology, palæobotany, archaeology, ethnology, morphology, genetics, and cytology appears to be in harmony with this new interpretation.

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