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DIET AND HEALTH IN AN ACCULTURATED TRIBE

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During my 7 months field work among the Šerente in Central Brazil I set out to discover how much they had been affected by the malnutrition that is notoriously prevalent in this region. As a dietician I was interested in seeing how much these highly acculturated Indians had been influenced in their diet and eating habits, and with what consequences.

Let me first make clear what I mean by »malnutrition« in this part of Brazil. I use the term here to indicate that the Brazilians along the Tocantins river do not get enough vitamins, minerals or salt, because the basis of their diet consists of meat—often dried meat—rice, black beans and manioc flour. Those who can neither hunt their meat nor afford to buy it usually have no alternative but to eat even more of the starchy substitutes, like rice or manioc flour. This is not because fruit and vegetables cannot be grown here in sufficient quantities for the comparatively small population. Indeed a wealth of wild fruits are to be found in the area. The population simply prefers a heavy diet. The rare man, who does grow a few vegetables, is considered something of a phenomenon and is known for many kilometers in all directions.

When we had been for some time in the Gurgulho, our first village, we decided to see if a formal diet investigation could be carried out. We discussed our project with the chief, and he called the villagers together and explained our intentions. We showed them the domestic balance we had brought with us and promised to put it at the disposal of the village if they would co-operate with us. This service was more important than it might seem, for the villagers in the Gurgulho earned what money they could by the sale of foodstuffs, especially coconuts, and their perpetual complaint was that they were swindled on the weight, as they lacked a balance of their own. In addition we discussed and agreed on the rewards we would offer to secure co-operation, and decided upon the first two houses where we would carry out our investigation. Accordingly I appeared in the first house just before dawn on September 21st, and asked them if I might weigh anything that they were going to eat. But they only showed

me very small portions, and most of the things were only brought out after I had asked after them. In the other house they would not, at first, show me any of their food at all, but after some consideration they decided to let me weigh various items. Later on I enquired when they thought they might eat again, and was told that it would be at noon or at nightfall. Subsequently I was often told that they would not eat again at all that day. It thus got harder every day to weigh the food in the houses, which were supposed to be co-operating in the experiment. The main reason for this—the fact that the Šerente are reluctant to share food with anyone at all—is discussed below. But it was also due in large measure to the character of the Šerente, who have been found, both by us and by other investigators¹ to be suspicious and intriguing. They never fully understood our motives for the experiment, however much we chatted with them about it, and grew daily more distrustful, feeling that we were »doing them down« in some way that they could not comprehend. Finally some of them were convinced that we undertook the investigation in order to be able to tell the emperor in Rio (sic), or at least the Brazilian Indian Protection Service, that their tribe was so well off that it needed no further assistance.

I have described the circumstances of the investigation in detail in order to give an idea of the difficulties we were up against, and of the type of data on which my findings are based. I persevered with these weighings through a period of 5 weeks and in five different households. Finally I had to give up and base my tables on my own observations as to what food-stuffs were brought into the various huts, and on what I could see being prepared and/or eaten. It must therefore be understood that my conclusions are based on these observations, and not on exact weights and measures.

In general the main meals are eaten at sunrise and sunset, but also whenever else there is abundant food in the house. This means, in practice, that most men eat at dawn and dusk, and spend the day either on their plantations or procuring food in some way, usually on their not very successful hunting expeditions. On the other hand the women and children eat the whole day long if they have anything, in a succession of snacks both in their own huts and in those of their neighbours, whether these latter happen to be at home or not. Here I must mention one of the most prominent characteristics of the whole tribe. They are, men and women alike, passionately interested in food. The staple topic of conversation in a Šerente village is what food can be expected in the hut, what food others have brought in, and what other people are going to eat. Immediately anybody comes into the village with a carrying basket full of food the whole village streams into his hut to beg a portion of its contents. The owner of the basket is virtually obliged to distribute most or all of it, for two reasons. Firstly, it is considered improper to refuse outright a relative's request for food. Yet the

Šerente kinship terminology is very broadly classificatory, so that the majority of the village are bound to be any given person's relatives². Further, a refusal to distribute largesse might be a bad investment, in case the tables should be turned and the owner of the basketful himself refused food at some other time. Nowadays, though, the Šerente resent this obligation to distribute food, and shirk it when they can; partly in order to guarantee themselves a saleable surplus, and thus comparative prosperity, and partly because they have been taught by neighbouring Brazilians that such large scale sharing is both foolish and a sign of barbarism. They are therefore careful either to hide or to gobble the contents of their food baskets, so that they may plead that they have no food at all if asked for it. I have many times been out on fruit gathering expeditions with the women, and when we had been especially successful we would go 4 or 5 kilometers out of our way in order to be able to come back into the village as unobtrusively as possible and slip straight into our hut. These considerations naturally made an investigation of Šerente diet even more difficult.

There is no doubt, however, that in the old days the prime article of food was meat, and even to-day meat is their favourite delicacy. All other items are regarded as mere substitutes for meat, which is the only real food. An Indian will say »I am starving. I have not eaten meat for days«, even if he has crammed himself to bursting point with maize cobs or fruit. It is the irony of the Šerente situation that they are now forced to go short of meat in the middle of the meat-producing region of Brazil, in an area where the Brazilians themselves buy it very cheaply and live on little else. But the Indians own very few cattle and depend on game, which the influx of cattle raisers and smallholders has made very scarce. It is perhaps dangerous, though, to generalise about the whole tribe. There are only about 330 Šerente left, but they are divided into four larger villages and one tiny community, so that their means of subsistence depend largely on their immediate neighbours and the conditions these create. In the Gurgulho, for example, the villagers could go 230 km over a 14 day period before making a large kill. They would get small animals like armadilloes on the way, but these hardly fed the huntsmen let alone their families. On the other hand this village has plenty of fish and coconuts, though the Indians have not overcome the Gê tribes' lack of interest in fish, and do not eat as much of it as they could. In the Baixa Funda, a village on the Rio do Sono, there was always sufficient meat, and usually plenty of produce in the plantations, though not so much fish—apart from the tiddlers that the children were forever catching, roasting in embers and eating. In the Baixão, which is about 28 km from the small town of Tocantinia, there are no fish and meat is scarce, but the Indians are in the habit of going into town or at least to the neighbouring Brazilians to buy food. Finally in the Boqueirão, which is only 10 km from Tocantinia, game is virtually extinct,

and the Indians buy, beg, or barter most of the extras they require: chiefly meat again.

Nevertheless I observed that the broad outlines of the Šerente diet in the various villages were the same, though there were local variations in the quantities of the various items consumed. These variations do not affect the general level of nourishment, except perhaps in the Boqueirão, which is the most sophisticated and the least productive of the Šerente villages. Unfortunately we were not able to spend sufficient time there to complete our investigations. The principle items of diet in the other three villages are:

meat
 sweet manioc, prepared as a vegetable
 bitter manioc, made into manioc flour
 rice
 maize
 beans
 coconut fat, in the villages near the Tocantins
 bananas

The tables I kept showed that through the greater part of the year their diet is sufficiently varied to prevent serious unbalance. This does not mean that they vary their food. On the contrary, they eat what they have for as many days as it takes to finish it, or until it goes so bad that it makes them ill, and then they procure something else. Over a period of about a month however this provides a balanced diet. The items already listed, for instance, cover, in the long run, their requirements of

protein and carbohydrates	as well as	calcium
vitamin A		iron
vitamin B		phosphates.
vitamin D		
vitamin E		

In this connection their practice of cooking fish in embers and eating them, scales and all, as well as of cooking meat in the same fashion, or in earth ovens, and eating it with the carbon deposit on it, is an important source of minerals, and has already been suggested as an explanation of how the Gê tribes managed aboriginally entirely without salt. The Akwẽ-Šavante, who formed one tribe with the Šerente until they moved westwards in the middle of the last century, as often as not refuse salt even to-day, despite the efforts of Brazilians to get them to like it. On the other hand they insist on roasting their meat, which they eat with the ash, earth and all. The Šerente to-day buy or beg salt, but this is almost certainly because they have been taught to like it by Brazilians, and, more im-

portant still, because they are now obliged by the scarcity of game to salt and store the meat of a big kill or a very occasional slaughtered steer.

It will be seen that the two most important deficiencies in this table are vitamin C and iodine, which they receive in insufficient quantities only. The lack of iodine was undoubtedly responsible for the frequent instances of goitre. In the three villages under discussion there was 6 cases of advanced goitre in an adult population of about 110. Vitamin C is however supplied by the fruits, which are a very important item in Šerente diet—not only for their nutritive value, but increasingly for their calorific value as well, whenever meat and agricultural produce is scarce. Twice a year there is a season of about 2 months, when the fruits of the burití palm are ripe and to be had in abundance, and this is the fruit which has one of the highest vitamin C contents in the world. Furthermore there are, at different periods, a whole series of fruits available, on which the Indians gorge themselves. There is the cajú fruit, whose nut, rich in vitamin B and fats, is later baked and eaten; there are mangoes, limes, and occasional oranges, as well as bananas, yams, melons and watermelons among the cultivated species; there is a wealth of palm fruits, which ripen at different times; and finally there are a number of important species, such as pusá, oití, and piquí, a fat musty-tasting fruit that is cooked and eaten stewed in large quantities when meat is short.

It is my opinion that the Šerente maintain a higher level of general health than is commonly believed, at least in official circles in Brazil, and they are a great deal healthier than their Brazilian neighbours, which is certainly due to the fact that they still gather fruit in quantities many times greater than do the Brazilians of the region. Similarly, they are always on the look out for wild honey, which is considered a great delicacy. The men sometimes subsist on honey and little else, while out hunting, and it is collected and brought back to the villages whenever anybody has the energy to do so. The local Brazilians, on the other hand, seldom go out in search of it, and usually only have it when they can buy a bottle of it from an Indian, unless they live right out in the backwoods and are used to fending for themselves. That my husband and I suffered seriously from malnutrition and anaemia during our stay among the Šerente was solely due to the fact that they shared whatever food we could procure, while going to great lengths to avoid giving us any themselves, even if it had been bought and paid for. With the exception of goitre, I was unable to establish the existence of any deficiency diseases among them. Both men and women are well built and do not suffer from bone deformations, nor from excessively bad teeth, though the dentition of the local Brazilians is very bad, few of them reaching 30 years of age with even a majority of their own teeth left. There were only isolated occurrences of skin infections, due to lack of

hygiene rather than to diet deficiencies. Finally the cases of tuberculosis, about 3 in all, which I saw, are certainly due to contact with the Brazilians, and a lack of understanding of the nature of the disease, rather than to malnutrition.

These conclusions are the direct opposite of what is currently believed about the Šerente, both among the local Brazilians and in the Indian Protection Service itself. The Brazilians believe that the Indians live on the verge of starvation because they are lazy cultivators, who would rather perform feats of endurance on the hunt or in their log races than the humdrum task of tending a clearing under a hot sun. Besides they regard it as self evident that all Indians must live in the squalor of barbarism, and the Indians encourage these ideas by their moans about how badly off they are, how the cattle breeders have driven away all their game etc., which they follow up by perpetual begging. The Indian Protection Service also believe that the Indians are both lazy and destitute, because the Šerente never have any other dealings with this agency except to complain and to beg for increased government assistance. It is significant in this respect that if the petitioner is bought off with a suit of clothes or a gun he usually forgets about the «assistance» that he has come to demand on behalf of the others.

Thus those people who accept the Šerente's own evaluation of their difficulties have misunderstood the nature of the Indians' problems, which are not primarily nutritional at all. They are neither starving nor, as far as our investigations permitted us to establish, undernourished. This is partly because food habits are less susceptible to acculturative influences than other cultural complexes, as Spiro has pointed out³, and partly because they could not wholly adopt the Brazilian style of eating, even if they would, because of the financial difficulties involved. But, though the Šerente cannot afford to eat as the Brazilians do, they have acquired other tastes which require money for their satisfaction. They like spirits and coffee, which incidentally is an essential part of hospitality in this part of Brazil. They smoke more tobacco than they can grow. They need salt. They want clothes and cooking pots, powder and shot, fireworks, when they have a celebration, and, of course trinkets for their wives. The principle commodity they can sell to get these articles is food. Only one village made any regular income out of the sale of skins. Some men, more adaptable than the others, have worked out other sources of income, such as the man in Boqueirão, who raises pigs; on the day he slaughters one he buys liquor on credit, borrows rice, hires a drummer and an accordion player and gives a dance for the neighbouring backwoodsmen. They buy his *cachaça* (a raw, sugar-cane spirit) by the nip, and his pork and rice by the plateful, and on the proceeds he pays for the party and makes a handsome profit. However, the majority of Šerente must pile up a food surplus by hook or by crook, if they are to earn any money. Even if they have no surplus, they will sell part of their harvest anyway to earn some money, and

often be forced to buy it back at a higher price later on, and thus run into debt. This phenomenon seems to be common to all people who are trying to make the change from a subsistence to a surplus economy. It has, for instance, been described in almost identical terms by Richards and Widdowson among the Bemba in North Eastern Rhodesia¹. The results of this tendency have already been described. A Šerente feels his obligation to his kin as an irksome and outmoded tie, and in shirking them he hastens the process of social disorganisation within the community. Once the principle of reciprocal food exchange is denied, then the whole social structure of the tribe is undermined. These exchanges were most important in the economic and ceremonial life of the aboriginal Šerente. Economic assistance, in the fields or on the hunt, was often paid for with cooked food. Ceremonial services usually involved payment in cooked food also. Nowadays traditional ceremonies are, for several practical reasons, being attenuated or abandoned. Thus, it is increasingly difficult to call the tribe together for joint ceremonies in any one village, because the hosts are unwilling to provide the necessary food for their guests, and these can no longer simply go out and hunt it without too much difficulty. We witnessed a name giving ceremony, where the guests threatened to depart almost as soon as they arrived for this very reason, and were only persuaded to stay by a gift of food from us. At the same ceremony, one of the chiefs nearly caused a scandal by having no food to provide for the criers, who had actually bestowed the names, and once again he appealed to my husband to provide some. Finally the masqueraders, who should have appeared in great ant-eater masks and »stolen« some special portions of food and danced away with it, refused to perform. The food put out for them in payment of their services was insufficient.

At the same time, two other factors make life increasingly difficult for the Šerente. It is harder and harder for them to obtain meat in the traditional way —by hunting. Meanwhile, the young women are less and less inclined to do the hard work of going out fruit gathering, or breaking coconuts, if they can satisfy their wants more easily, in other words by begging, buying or stealing. Now the shortage of meat, as I have already shown, is a psychological, rather than a nutritional problem, being caused by the exaggerated significance attached to meat as »the only real food«. Also the alternative to hunting it is to work harder in the plantations, or more consistently at stockbreeding in order to

1) make it unnecessary to eat so much meat because of the increase in other products,

2) earn enough money to buy supplementary meat, where needed.

This the Šerente are, for the most part, unwilling and unable to do, because of their rooted aversion to agricultural work. So the crux of the problem is, once again, the difficulties experienced by a primarily hunting and gathering people,

who are forced by the ecological squeeze to go over to an agricultural economy. The Šerente are in reality troubled neither by diet deficiencies nor bad health; their problems are sociological and psychological.

¹ NIMUENDAJU, CURT. *The Šerente*. Los Angeles 1942. p. 80.

² MAYBURY-LEWIS, DAVID. *Kinship and Social Organisation in Central Brazil*. Proceedings of the 32nd International Congress of Americanists, Copenhagen 1956. p. 123-135.

³ SPIRO, MELFORD E. »Acculturation of American Ethnic Groups«. *American Anthropologist*, Dec. 1955, vol. 57, no 6, part 1.

⁴ RICHARDS, A.I. and WIDDOWSON, E.M. »A dietary study in North Eastern Rhodesia«. *Africa*, vol IX, 1936. p. 181.