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THE FOLK VIEW OF NATURAL CAUSATION AND DISEASE IN BRAZIL AND ITS RELATION TO TRADITIONAL CURING PRACTICES[1]

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RESUMO - Entre 1973-1974, 51 famílias, procedentes de todas as regiões do Brasil e residentes duma "agrovila" da Transamazônica, foram entrevistadas em referência aos conhecimentos de saúde, nutrição, e vários estados de saúde mais comuns. A saúde ginecológica e da gravidez, doenças infantis, a malária, e doenças cutâneas representaram os problemas mais freqüentes. Fora o trauma, estas foram as mais sérias entre os colonos nessa época. Os sintomas reconhecidos, a etno-medicina, as plantas medicinais e o regime de comidas prescritos são elaborados. Dois temas centrais são as crenças referentes ao estado do sangue nessas doenças, e como o sangue reflete a nutrição, o comportamento do indivíduo e o estado de saúde. A classificação de comidas, remédios, e eventos na vida cotidiana em categorias de "frio" ou "quente"; "reimoso"ou "saudável" nesta etno-etiologia explica o uso de receitas e regimes tradicionais, tanto como a aceitação dos vários medicamentos da medicina "moderna" e remédios desconhecidos de outras regiões. Em contraste com muito da literatura da "medicina popular", o foco é aqueles sintomas e a etiologia nas quais a comunidade reconhece estados "normais", e que não impliquem a necessidade nem de curas mágicas nem de benzedeiros. A diagnose entre as causas naturais e as que são consideradas "não-naturais" são descritas para vários estados de saúde. Está incluída a história desse sistema etno-etiológico, em comparação às outras crenças das populações rurais na América Latina. Também a comunidade da agrovila e suas origens, e as fontes e padrões de uso dos serviços públicos e privados de saúde são descritos. A falta de sucesso em certos casos poderia ser explicada pelo uso de medicamentos, seguindo o sistema etno-etiológico do povo rural. Nestes instantes, a aplicação dessa informação é evidente para profissionais na área de saúde pública.

PALAVRAS-CHAVE: Brasil; Amazônia; Saúde; Medicina tradicional; Plantas medicinais; Medicina popular.

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ABSTRACT - In 1973 and 1974, 51 families, residents in an agricultural colony ("agrovila") on the Trans-Amazon Highway but originally from many different regions of Brazil, were interviewed about their knowledge of health, nutrition and several more common health problems. Gynecological and pregnancy problems, childhood illnesses, malaria and skin diseases were the most commonly encountered health problems. Aside from traumas, these problems were the most serious confronting the colonists during the study. Recognized symptons, ethno-medicine, medicinal plants and dietary taboos are presented. Two central themes are the beliefs about the condition of the patients' blood and how the condition of the blood reflects the individual's nutrition and behavior. The classification of foods, medicines and everyday events in the categories "cold" or "hot", "debilitating" ("remoso") or "healthful" in this ethno-ethology explains the use of traditional medicines and treatments, as well as the acceptance of various modern medical treatments and of remedies unknown in other regions of Brazil. In contrast to much of the literature on "popular medicine", the focus here is on those symptoms and the etyology in which the community recognizes "normal" states of health, and that do not call for either magical cures of faith-healers. The diagnosis of natural causes and of causes considered "non-natural" is described for various states of health. A discussion is included on the history of this ethno-etymological system in comparason to the other beliefs of rural Latin-American populations. Alsso the community of the agricultural colony and its origins, and the sources and usage of public and private health services are described. The lack of success in certain medical treatments may be attributable to the use of folk medicines. In these cases, such knowledge is of evident value the public health professionals.

KEY WORDS: Brazil; Amazon; Health; Traditional medicine; Medicinal plants; Folk medicine.

INTRODUCTION

Knowledge about disease and curing has not increased at a steady rate, nor has this knowledge been dispersed equally to all areas of the world. Some Practices once considered to be based on "scientific truth," and unbiased observation have been abandoned as useless superstition, and wherever better techniques for observation have arisen, there has been a steady decrease in the need for magic to control the "unknown" (Wagley 1964:215, 252). However, if man's understanding of cause and effect is constantly changing, when is it proper to use magic, and when are natural rather than supernatural causes for disease accepted?

In this context, folk science might be defined as those practices which primarily rely on natural explanations for events, and which, through long empirical observation of events and manipulation of common materials a predictable outcome can be reasonably assured. Folk science tends to go no further than natural, observable and apparently controllable events. Western clinical medicine differs from this approach in degree rather than theory. Its more refined and exact methods of experimentation and observation of events goes one step further and tests ideas about causal events in order to generate new knowledge. If, on the other hand, a patient continues to worsen, despite scientific examination of the problem and all known cures, the distressed sufferer may turn to a magical or supernatural explanation and solution. Phenomena such as faith healing, in a variety of guises, are well known even in the most technologically oriented societies.

The distinction between magic and folk science is a central issue in the description of folk curing and medicine. In this study, the parameters of this distinction are explored in a newly-formed rural community in Brazil. The community presents a cross-section of folk medical beliefs from all areas of the nation, as its residents have emigrated from numerous small towns and cities to colonize Brazil's last frontier: the Amazon. The goals of this research were also furthered by the availability of modern medical facilities allowing a case study of the interaction of folk and modern medical practices (Colson & Selby 1974:245). In order to understand the concepts behind the colorful practices, illnesses recognized by the folk system must first be defined, including the age-sex groups affected and the perceived causes of each disease. Only then can these beliefs be related to the world view of the people, and conditioning variables which are taken into consideration in these diagnoses. These are all factors which influence a community's reaction to medical innovation.

The distinction between magical and non-magical folk curing practices has been outlined in several studies of rural Brazil (Pierson 1954; Galvão 1955; Araújo 1959:63-96; Wagley 1964 and Loyola 1987). Harris (1971:250-255) in his *Town and Country in Brazil*, for example, states that while most of the magico-religious activity in his community revolved around illness,

> *... strictly speaking, it is not in the realm of the occult that the disease-conscious townspeople make their strongest bid for health. In the case of sickness, and in all matters concerning health, the average townsman is more likely to rely on a ... non-occult procedure, rather than ... on a prayer, ... magical acts or other measures involving the supernatural or occult. (Harris 1971:255)*

Wagley's (1964:252-254) study of a traditional Amazonian community also provides many examples of a secular, or folk science approach to health. However, his more isolated, riverine community seemed to adhere equally to both natural and occult explanations for illness. While modern medical innovation and explanation had been accepted by many people of Itá, magic and religious cures had not been discontinued nor totally replaced (Wagley 1964:252-254).

Harris (1971:244) proposes that the relative emphasis of one or the other approach varies with the size and relative isolation of the community in question; that is the availability and familiarity of alterative cures and explanations explains the increasing displacement of reliance on magic. Malinowski lends a different perspective to this discussion. He explains the use of magic not only in terms of man's lack of understanding of an event, but also the emotional value of the result (Simmons 1955:58). Magic, he says, is used when success is emotionally important to the group, and there is great uncertainty as to the outcome of a health event. When natural explanations and available empirical techniques fail, magic provides a sense of control and needed optimism (Malinowski 1935:435-451). Thus both magical and empirical techniques deal with cause and effect and each attempts to manipulate the causative factor. In the former case, however, the cause is believed to be of the supernatural world (Benedict 1938:638).

The folk science approach to illness is familiar to all rural Brazilians, and natural causative explanations are initially sought in diagnosing and treating disease. In accordance with Malinowski and others, it will be shown that supernatural explanations are substituted if secular explanations and available cures fail (Ackerknecht 1946:470), particularly where strong emotional content, such as the health of a child, is concerned.

A detailed discussion of common illnesses, disease agents, diagnosis and therapies recognized in the secular world of the Transamazon colonists is offered as a contribution to the existing literature. The folk explanations of naturally caused diseases and their effects on the body are discussed in terms of the antiquity of these practices and the relation of such practices to modern health programs. The data were gathered through interviews with colonists and local health practitioners in an attempt to define the way people think about disease, and to record it in

their own terminology. The health concepts and folk terms which emerged are also compared with similar patterns found in other areas of Latin America.

Thirdly, neither the secular, nor the supernatural forms of folk curing were quickly reestablished in this new planned community. The new settlers even preferred modern health care over traditional treatments when the former were readily available. The reversal to folk secular, as well as magical, cures is examined in light of the relative effectiveness and accessibility of the "modern" facilities in the area.

WHAT IS FOLK MEDICINE?

How might "folk medicine" be defined? One of the most widely applicable definitions is that offered by Saunders (1954:144-146), who states that folk medicine includes those health practices performed by the majority of adults in the community. While local specialists exist, their prognosis and cures are well known to everyone. Therefore, their greatest service is that of professional diagnosis in difficult cases. As in other areas of folk knowledge, folk medicine and health related practices are rooted in tradition, are passed by word of mouth, and are well integrated with other aspects of folk belief (Saunders 1954 and Clark 1959:1). Folk medicine also serves a variety of purposes in the culture, apart from relief of physical suffering. The illnesses a culture recognizes may re-enforce the local system of values, provide an outlet for culturally abnormal behavior, or reflect one's social role and status (Kenny 1963:282-283; Clark 1959:199 and Foster 1958:17)

Natural and Supernatural Explanation in Folk Health Systems:

Knowledge of human anatomy and physiology, of course, depends on how familiar a culture is with the internal workings of the human body. Folk medicine in isolated societies is often the system which is particularly focused on diseases long endemic to the population. These long-suffered diseases have lost their virulency as more people have built immunity to them but they still exact a high toll in morbidity and lost productivity (Alland 1970:140; Fábrega & Silver 1973:210; Santos Filho 1966:15 and Ackerknecht 1946-472-473). These practices provide

the best utilization of locally available medicinal resources and are usually concentrated on those physical problems which are most common, have the most visible symptoms, and which are usually non-fatal (Alland 1970:88). Over time, successful cures are perpetuated and re-enforced while less successful treatments are eliminated from the cultural repertoire. However, marginally effective recipes may be retained simply because most people tend to recover anyway, and new medicines are accepted as long as they conform to existing conceptual categories (Adams 1953:70-71; Harwood 1971:1155; Logan 1973:390). The definition of disease, then, depends on what the people recognize as possible pathogenic agents. Two broad categories of disease agents might be termed natural and supernatural causes.

Diseases that are believed to be caused by natural agents vary from culture to culture. Whereas the germ-theory has become the primary explanation for infectious illness in clinical medicine for example, other cultures might include such phenomena as a "dirty stomach," "bad airs," or the "wrong" combination of certain foods. These natural agents are regarded as common, but avoidable, factors in everyday life (Erasmus 1952:414). Naturally induced diseases are recognized by specific sets of symptoms, whose onset can be traced to a recognized pathogenic agent which the patient has encountered in the recent past. Once such agents have been identified, a cure from the normally available pharmacopeia is then called for.

Within the category of supernaturally induced illness, a further variety of explanations for disease is encountered (Adams 1953:23-33; Alland 1970:138; Clark 1959:164; Foster 1953:219). First are maladies attributed to punishment by a divine being for spiritual or social transgressions and encompass such concepts as soul loss, spirit possession, or soul-robbery (Pierson 1954:281; Simmons 1955:60; Alland 1970:116; Galvão 1955:91-111; Wagley 1964:222). The cures for such ills generally include a recognition of the entity's power over man, and a subsequent appeasement or magical formula to return the spirit to its normal state (Middleton 1972:487-492; Carstairs 1955:112). Such episodes are considered life threatening due to the direct intervention of an offended deity, and religious leaders are essential in helping the patient resolve these crises (Fabrega & Silver 1973:134; Bock 1969:297).

A second type of supernatural disease involves a conflict of expected social roles or values (Redfield 1950:309-313). The most common examples include illness resulting from such social tension and involve beliefs in witchcraft and the "evil eye." In the first, community members who are considered "marginals" or "outsiders," yet who have a valuable role in the society, are often accused of "anti-social" practices such as causing illness, sterility, or even death (Fortes 1969:179-183). "Evil eye," on the other hand, may result from unhealthy sentiments such as envy or mal-intent (Foster 1953:207; Simmons 1955:62; Campos 1955:168).[2] The diseases and cures of such "social" ills not only pinpoint areas of conflict within a population, but often provides an outlet for anti-sympathetic behavior or feelings in a small, integrated community (Clark 1959:198-199 and Kenny 1963:281-284).

Thirdly, we have what might be described as "emotionally" induced illnesses. These exhibit psychosomatic symptoms and may or may not be attributed to contact with other supernatural agents. The most frequently cited example is the concept of *susto* or "fright" found throughout Latin America[3] (Simmons 1955:62; Gonzalez 1969:226 and Foster 1953:211). Others might include "embarrassment" *(chucaque)*, "anger" *(colerina)*, "jealousy" *(celos)*, and post-partum grief *(sobre parto)* (Simmons 1955:61-62). Other maladies which cannot be explained directly in terms of witchcraft or breakage of taboo, are treated magically as well. These may involve cultural concepts of evil or violence, such as snakebites or knife wounds (Araújo 1959:65). The prevention and cure of such illnesses revolves around the use of amulets and charms, and special verbal formulae (Malinowski 1935:435-451 and Pierson 1954:287).

In most cultures, supernatural causes and cures are sought when the patient's symptoms do not conform to the accepted set of symptoms that are expected from "natural" causes. Symptoms may appear suddenly and unexpectedly and are acute in nature. If a natural disease

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[2] Foster (1953:207) and Simmons (1955:62) report that "evil-eye" is often given unintentionally by a person with a "strong" or contaminating glance. In Brazil, however, evil eye has the connotation of mal-intent and the prayers to cure it put the powers of good over evil (Campos 1955:168).

[3] *Susto* results from encountering an apparition, which always involves soul loss, or from a sudden and unexpected experience such as being startled by ... falling, ... loud noise ... which may or may not involve soul loss (Simmons 1955:61).

agent cannot be traced in the patient's history, and the malady does not respond to naturalistic cures, the patient may then be taken to a specialist who will determine the "supernatural" agent at fault (Ackerknecht 1946:468-473). As discussed earlier, an appeasement of supernatural powers gives the curer a greater sense of control in a situation that holds many unknowns (Simmons 1955:58; Araújo 1959:64 and Erasmus 1952:414).

Diagnosis and Curing:

Regardless of whether a particular illness is interpreted as naturally or supernaturally induced, most folk medical systems allow for two interacting factors within a disease: an internal factor within the body of the patient, and a factor which is external to his physical self. This "dual-factor" system has been described in several folk systems, and re-enforces the ancient concept that disease results from imbalances found between people and their relationships with the physical and spiritual worlds (Lynch 1969:209; Opler 1963:33; Santos Filho 1966:15; Kiev 1968:43; Adams 1953:17).[4]

Once the natural and supernatural disease agents recognized by a folk system have been described the reasonings behind the various folk cures can be better understood. Folk medicine does work on an empirical basis, that is, symptoms are critical to diagnosis of cause and their physical changes are noted carefully. Many symptom-oriented disease taxonomies in fact reflect that symptoms *per se* are the criteria for naming the "disease" and choosing remedies to relieve these specific symptoms (Frake 1964:194; Hohenthal 1959:90-91 and Alland 1970:116). Thus perceived symptoms, in most folk etiologies, while they may be indicative of some underlying condition, are usually treated as if they were the principal malady to be dealt with. Remedies for such symptoms are experimented with over generations until reasonably effective cures are obtained, utilizing a frequency-interpretation of the

[4] This may be a simplification of the Hippocratean idea of *ketosis* where factors of one's environment and one's own susceptibility must be calculated in determining the course of the disease. This in modern terms may be equated with the factors ol 1) a noxious disease agent, 2) lack of some internal biological balance, and 3) stress, produced by the environment (Galdston 1954:13-20).

number of successful cures obtained by any one treatment (Foster 1958:18 and Erasmus 1952:422-423).

"Illness" in most folk constructs is often behaviorally defined, e.g., not being able to function in one's expected daily role (Kenny 1963:283; Saunders 1954:148 and Nurge 1958:1158). Therefore, many folk systems do not label persons as seriously ill until they are incapacitated as normal working adults. Minor problems are treated at home over a long period before the patient considers seeing a specialist about his now serious "illness" (Foster 1958:34). As in many societies being ill for "too long" a time eventually brings lack of respect from one's peers, many patients do not give in to early symptoms by seeking a specialist, as this is considered evidence of moral, as well as physical, weakness (Clark 1959:195).

In summary, folk health systems are those systems of knowledge which form a part of the local adult's understanding of the interaction of his body with his environment. This knowledge is transmitted orally, as part of a long-standing survival strategy found in a particular environment. It uses the resources which are readily available, and for most common maladies, at relatively low cost to the user. The body of information which makes up the folk health system is enmeshed not only in the broader world view but includes ideas concerning disease agents, human anatomy and physiology, and successful treatments. As new information and materials filter into the local culture, the relative importance of different health problems and various remedies are constantly being re-tested and re-evaluated. Where new cures are shown to be empirically effective, they are categorized in conformance with the prevailing conceptual system. A folk health system is an important aspect of the culture's adaptation to its environment, and provides for maintainance of a coherent, consistent view of health and relations to others (Redfield 1950:141 and Alland 1970:40).

Why study "folk" disease constructs?

A better understanding of folk medical systems is of practical value both to anthropologists and health service providers. Knowledge of a folk health system reveals not only what the community considers to be its major health problems, but also reveals its nutritional habits, child care, and specific economic activities. At times, public health efforts fail because of a faulty recognition of the community's level of

understanding of health problems, or misinterpretations of the perceived health priorities of that community (Cassel 1955:20). Often when modern medical facilities become available, there remains a popular distinction between illnesses which can be treated by these resources and those which must be treated by the folk system. The latter includes illnesses which folk systems predict that practitioners "do not understand", and, therefore, cannot cure. This implies that until modern practitioners can explain modern disease theory to their patients in the latter's own terms and their cures are as acceptable and accessible as folk cures, some diseases will always remain isolated from "modern" Western medicine (Foster 1958:18; Simmons 1955:67; Saunders 1954:150; Pierson 1954:290; Erasmus 1952:416 and Alland 1970:116).

Furthermore new innovations fail simply because of the economics of subsistence in many folk communities. There may be little social or economic gain in accepting the innovative cure or practice in place of the traditional folk approach. Often folk cures are used because they are readily available and inexpensive and/or correct use of modern methods is poorly understood and undermines the community's confidence in their success. (Alland 1970:158 and Fabrega & Silver 1973:145). These themes will be highlighted in the description of the Transamazon colonization project and its traditional health system, which are discussed in the following pages.

THE COMMUNITY SETTING

The secular view of illness among rural Brazilians was described through the use of a community study. The research site was a nucleated settlement of forty-eight houses, a Transamazon Highway *agrovila*, part of a vast project begun in 1970 which attempted to solve many of the socio-economic problems of Brazil (Moran 1981:77-79). The highway linked the Northeastern cities of João Pessoa and Recife to the interior towns of Marabá, Altamira and Itaituba, as well as the northern and southern regions of the country, via its connection with the Belém-Brasília Highway (Figure 1).

The massive push to colonize and claim this area of the Amazon resulted in part from one of the worst of the cyclical droughts which ravaged the Northeast region of the country. The government decided

to provide "land for the landless" to relieve the economic situation of these Northeasterners while meeting an equally important goal of integrating the "sparsely populated" Amazon to the rest of the nation (INCRA 1972:8).

The *agrovila* under study, here called "Vila Roxa," is populated by forty-eight families who have come from eleven different states of the various "culture regions" of Brazil (Table 1),[5] and were offered one-hundred hectares of land, government-built houses, medical facilities, farm credit, schools, and technical aid if they would only settle the area.[6] During the period of study, October 1973 to October 1974, these families resided in this planned. nucleated settlement. Four other families were included in the *agrovila* sample due to kinship and social ties, and lived in individual homesites along the main highway. Further description of Vila Roxa can be found in Moran (1975, 1981).

Only five inter-related nuclear families existed in Vila Roxa families, most consisted only of parents and their young children, with the possible addition of one non-nuclear relative. Five families had grandparents residing nearby, but all these older members were relatively isolated from the social life of the *agrovila* as they lived on the individual farm lots, or were new to the community.

This community is located equidistantly between Altamira, a traditional town along the Xingu River, which provided Vila Roxa with hospital, pharmacy and market services,[7] and the *agrópolis* "New Brazil" which served as a colonization administration center.[8] The *agrovila* had been in existence for three years. Many of the earliest settlers first lived

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[5] The culture regions used in this study are similar to those outlined by Wagley (1965:126-130), with some modification. Wagley defines six cultural-geographical regions of Brazil. Here they are further combined to form four categories: North, South, Northeast, and Central-West. The following states and territories are included under the regional divisions: North--Pará, Amazonas, Acre, Maranhão, and Roraima: South--Paraná, Rio Grande do Sul, São Paulo, and Santa Catarina; Northeast--Rio Grande do Norte, Sergipe, Piauí, Ceará, Pernambuco, Paraíba, Alagoas, and Bahia; Central-West--Goiás, Minas Gerais, and Mato Grosso, Rio de Janeiro, Guanabara, Espírito Santo, Distrito Federal.

[6] For a more detailed discussion of the history and development of the Transamazon colonization project, see Kleinpenning (1975) and Moran (1975, 1981).

[7] The town of Altamira also serves as the administrative center of the *municipio* or county of Altamira.

[8] INCRA *(Instituto Nacional de Colonização e Reforma Agrária)* is the federal colonization agency. Other agencies dedicated to extension services, credit, and storage of production are also based in this large planned town.

Table 1 - Previous State of Residence and Religious Affiliation of Vila Roxa Families

Region Number of Families	States	Religious Affiliation
Northeast (16)	R. Grande do Norte (10) Ceará (2) Bahia (1) Pernambuco (1) Paraíba (1) Piauí (1)	Catholic
Central-West (8)	Goiás (1) Minas Gerais (7)	Catholic
North (7)	Pará (6) Maranhão (1)	Catholic Protestant
South (19)	Paraná	Catholic (6) Protestant (13)

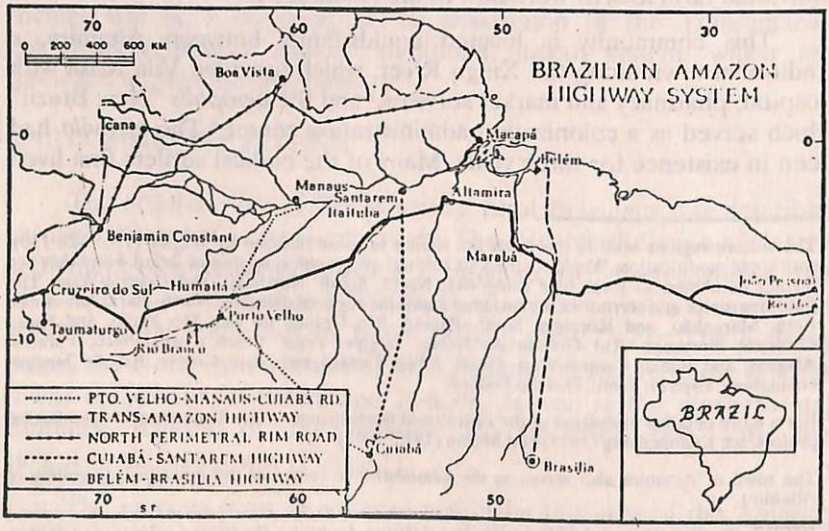

Figure 1. Brazilian Amazon Highway System. Soure: Charles Wagley, Ed. 1974 *Man in the Amazon.* pp. 292.

in a neighboring camp for transient colonists while they awaited housing. The shelter still existed and was constantly populated by new families during the study. More residents from this crowded temporary shelter tended to be hospitalized with bronchial infection and gastroenteritis, than those who lived in the more open *agrovila* (Table 2). Living conditions for colonists vastly improved when they moved to the *agrovila,* including a separate and more spacious living quarters,[9] a private latrine, and treated water piped to each household.

In general, household hygiene was good, considering the limited resources of the people and the dusty/muddy conditions (depending on the season) of the Transamazon region.[10] Very little accumulation of garbage occurred and livestock was kept out of the household compounds. Of the nine families who kept pigs in the *agrovila,* all kept the pens well away from the houses and were careful to clean the pens regularly.[11] Household water spigots made frequent bathing an easily kept habit, and clothes are frequently washed and ironed. Bedding consisted of washable hammocks or sometimes homemade beds, with mattresses stuffed with dried banana leaves, straw or other available material. The latter may prove a potential environment for disease-carrying insects.

Pests which were present in the yards and households included roaches, spiders, chiggers, blackflies, houseflies, mosquitoes, and, on occasion, lice.[12] While Chagas disease insect vectors, Triatomine bugs., had been noted in the region, household infestation had not been

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[9] The houses are all a standard size regardless of the size of the family which does cause crowding in a few instances. The houses are poorly constructed allowing easy access for insects and rats.

[10] In the dry months of July to October the red clay of the region becomes a fine, free-flying dust, which is constantly stirred by highway traffic. During the rainy season the clay becomes a sticky mud. The agrovila is fortunate, however, in that it is located at a high point and drains easily when the rains stop. Therefore, it has remained free of the stagnant waters and malaria so prevalent in nearby agrovilas located on the watershed of the Irari River. Colonists at greatest risk for malaria were those whose lots were nearest the Iriri River, and who lived most of the time out on the farm, rather than in the agrovila.

[11] The keeping of pigs was actively discouraged by the nurse's aide who resided in the community. As a health precaution she demanded the animals be kept on the farm lots, but as many of the lots were far away, or inaccessible during the rainy season, some colonists established pigpens which were hidden in the brush behind the homes.

[12] Blackflies (Simulidae) were present in the latter part of the rainy season, as were mosquitoes. Houseflies were prevalent in the driest months (July-October). The blackfly threat to health consisted of itchy bites which often caused swelling and local hemorrhages. When scratched open they can also degenerate into infections, or may in some cases result in leishmaniosis.

Table 2 - Hospital Admissions During 1973: Vila Roxa and The Temporary Camp

Age Group	Type of Illness	Number of Cases Vila Roxa	Camp
Infants	Respiratory infection	1	1
0-12 months	Gastrointestinal infection	1	2
		2	3
Children	Respiratory infection	0	2
1-18 years	Gastrointestinal infection	0	2
	Malnutrition	0	1
	Other	2	1
		2	6
Adults	Respiratory infection	0	0
18 years-over	Gastrointestinal infection	0	0
	Reproductive problems	1	3
	Other	1	5
		2	11
		Total 6	20

These data were derived from FSESP hospital admission files, courtesy of Nigel Smith, University of California. The agrovila represents the resident families, while the camp had a very mobile population of about thirty to forty families which resided in the camp for varying lengths of time over the study year. This limits direct comparability of disease rates between the two sites, for this period.

reported in the period of study. More persistent were the ever-present rats *(Ratus ratus)* due to open construction of houses and the stored bags of harvested rice and beans within them. While the farmers recognized the health hazard this creates, they did not trust their crops to be stored at the communal warehouse, and their lots were too distant to leave the harvest unattended. Some attempted to secure fifty-gallon drums to serve as storage containers but these were relatively rare and costly.[13] Food for consumption, however, was carefully guarded in whatever container is available.

[13] A used oil drum cost an average of US$7.

While certain health hazards did exist in the region, there are also health services which attempted to combat them. First is the water tower which provided treated water pumped from a deep well through a plastic (PVC) pipe to the front of each house. Some colonists piped the water to the rear kitchen and bathing areas of the house. Before this system was established in 1973, colonists walked one kilometer to the nearest stream for bathing, washing and drinking water. There was also a Public Health Service (FSESP) health post[14] since June, 1973, a oneroom clinic, with an examination couch and a few first-aid supplies. A nurse's aide who resided in the community staffed the post and was responsible for home visitations, prenatal check-ups, immunization programs, and simple first-aid. The nurse's aide was not allowed to prescribe medicines, and post medical supplies are often limited to gauze, mercurochrome, Gentian violet, and tetanus vaccine[15].

Weekly visits to the health post were made by a FSESP doctor, who reviews persistent conditions unsuccessfully treated by the nurse's aide, writes prescriptions, and refers patients to Altamira if necessary. He also extracts teeth, or takes blood tests and fecal samples to be examined in the Altamira hospital laboratory. The nurse's aide records the doctor's observations and prescriptions in the file kept on each patient. She does not keep a comparable record on treatments prescribed by herself.

The agrovila is also home for a Health Service ambulance driver. While he serves more than 100 kilometers of the Transamazon region, he frequently stops at Vila Roxa to see if people need transportation into town, as well as transporting emergency cases to the hospital at night. Emergency transportation is also provided by the INCRA appointed mayor and by staff from the neighboring agricultural experimental station.[16]

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[14] FSESP stands for Fundação Serviço Especial de Saúde Pública.

[15] Because of the policy that no requests may be made before supplies run out, there were periodical shortages. During the rainy season, medical supplies are sorely lacking even in the town of Altamira. Most pharmacists do not like to import medicines by boat, and air transportation is expensive. The Public Health Service also receives its supplies from the South. Due to the time needed to process requests, replacement of supplies is often slow in both government and private clinics. In addition, fuel for the water tower pump also could not be re-ordered until an empty tank could be refilled, resulting in periodic use of nearby streams for water supply.

[16] The station was run by the Instituto de Pesquisas e Experimentação Agropecuária do Norte (IPEAN).

Other health-related services include hygiene and nutrition lectures by local social workers at the agrovila's 'Mothers' Club.[17] These courses in basic aspects of cleanliness, food preparation, birth control methods, and the value of household gardens were well attended. Twice a year another health organization, SUCAM,[18] sprayed each house with DDT in an attempt to control malaria-carrying mosquitoes. Lastly, the Health Service made regular checks on the water system, health post, and latrines. At the end of the study period, new concrete floored latrines were built to replace the older ones. In addition, a small brick building was being constructed to serve as a two-bed maternity clinic. This was to be staffed by a midwife and regularly visited by a doctor.

The health facilities found in the town of Altamira included numerous pharmacies, local missionaries, and the *Projeto Rondon*,[19] which sold or dispensed pharmaceutical goods and performed simple examinations. INCRA and the *Sindicato* (workers' labor union) offered their own doctors and dentists for the use of colonists and union members, and when simple supplies were available they were dispensed gratis. The Health Service maintained a small hospital, with basic but modern x-ray and laboratory equipment, and an out-patient clinic. There were also two private general practitioners and two dentists (SESI 1974)[20]. Finally, Altamira also catered to folk practitioners with herb vendors in the local market, faith healers, and Afro-Brazilian possession cults.

The agrovila itself was fortunate to have such a variety of health facilities. To a great extent these facilities and a low incidence of serious illness and mortality[21], reflects the advantages of the agrovila's physical

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[17] The social workers belong either to INCRA or ACAR (*Associação de Crédito e Assistência Rural*). The INCRA workers were concerned primarily with census keeping and housing assignments. The ACAR workers were assigned to promote community development. They were instrumental in establishing a Mother's Club, and in giving lectures on the above mentioned topics. Such lectures, however, rarely raised above the level of common sense, and many colonist wives felt insulted by such simplicity.

[18] *Superintendência do Controle da Malária* (Malaria Service).

[19] *Projeto Rondon* is a program where young university students from such professions as law, medicine, engineering, and social work donate school vacation periods to providing specialized services in rural areas.

[20] While the cost of an appointment with a private physician was prohibitive (Cr$50 or US$7), this was often preferred to what the colonists believed to be hasty and insufficient attention from government medical personnel.

[21] Only two deaths were recorded during the period of study, both children under the age of five. Asthma and croup were listed as the respective causes of death. Hospitalization generally involved women in childbirth and children with respiratory infections.

location. Only 23 kilometers from the hospital and pharmacy facilities in Altamira, transportation, though sometimes expensive, was always available. This section of the Highway was well maintained and remained in passable condition throughout the year. The mobile Health Service units therefore reached the agrovila with their services even in the rainy season. Vila Roxa was exceptional in its access to medical care and transportaton services.[22]

THE FOLK MEDICAL SYSTEM AS SEEN IN VILA ROXA

Historical Antecedents

Of the three cultures which formed Brazilian society, Iberian, African and Amerindian, it was the first which had the greatest influence on the secular and supernatural viewpoints in current "natural" folk medicine. In the early contact period, the Jesuits acted not only as missionaries but were for many years the chief source of academic and practical medical personnel (Holanda 1960:147). Many, in fact, "learned in the field" as they quickly realized how vulnerable the once-isolated Indians were to European induced diseases.[23] In writing about the diseases suffered by the Indians, Martius (1939:23-54) describes the natives as "having a low quantity of blood, ... they are of a lymphatic nature ... their illnesses take a long time to develop ... and are rarely acute ... the Indian dies gradually and with indifference". The early Iberian settlers also had bouts of typhoid, smallpox, and dysentery to deal with as well. The Jesuits ministered to both the missionized Indians and the European immigrants.

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[22] Other agrovilas, located on transecting side roads, were not so fortunate. Hilly terrain, distance, and unpassable roads puts health programs beyond the reach of their seriously ill. These distant agrovilas also lack a resident nurse's aide. Given the lack of services, inhabitants of *"travessão"* agrovilas moved to their lots, and traveled to Altamira whenever they required medical attention.

[23] Diseases that were endemic to the native population included: yaws *(bouba)*, goiter, skin lesions, dermatoses, and "fevers" (Santos Filho 1966:16) and some unidentified forms of dysentery and respiratory ailments (Holanda 1960:146). Diseases which were introduced through contact with Europeans and Portuguese-imported African slaves included: smallpox, measles, malaria, yellow fever, leprosy, filiarisis, tuberculosis, *bicho do pé (Tunga penetrans)*, gonorrhea and syphilis (Santos Filho 1966:46-57).

Compounding the lack of trained personnel, and diseases of epidemic proportions, was the lack of a fresh drug supply from Europe. Shipments often came late and medicines so old they were unusable (Holanda 1960:151). Having more intimate contact with the indigenous population, the Jesuits studied New World plants as possible replacements for the scanty store of European medicinal supplies. The influential role of the Indian shaman *(pajé)* was eventually limited as the Jesuits took over the traditional healing and religious activities of the Indians living in the missions or *aldeiamentos.*[24] During this time the missionaries actively sought information on various native plants and experimented with them. The results were analyzed and recorded by the Jesuit responsible for the mission pharmacy (Holanda 1960:148).

The confusion came about early as Indian medicines "were chosen by the Jesuits as seemed best, but conforming to the science and superstition of the time (i.e., of the Jesuits)" (Holanda 1957:38). That is, the whole range of botanical goods was not adopted *in toto.* Rather, herbal remedies were screened by the Jesuits as to what was suitable, in their terms, for the types of ills cured by, then current, Iberian medicine.[25] One might presume a bias against many items, used specifically for what the Fathers recognized as ritual or magical purposes. The adopted native plants were given descriptive Old World names and humoral attributes (Holanda 1957:89), presumably in accordance with the diseases for which they were used. However, the majority of native medicines which had some real physiological effect performed a purifying or purgative action (Smith 1957:83), a curing approach was well known and highly appreciated in Iberian medicine. This stems from the Greco-Roman theory that the doctors' greatest role was to aid the body in its own natural purging tendencies (Taylor 1922:108). Thus many native American additives to the folk curing techniques are powerful roots with strong purging powers such as emetics, blood purifiers, diuretics, and purgatives, while the European contributions consisted of leafy plants with tonic qualities (Campos 1955:32).

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[24] Aldeiamentos were mission villages run by missionaries, who offered the natives a measure of protection from Portuguese enslavement (Wagley 1964:36).

[25] A similar function was performed by the Franciscans in colonial Mexico. The native plants were classified into hot-cold categories, which in turn were taught to the Indian healers. Such writers as Sagahún, Monardes, Augustín de Farfán and Juan Càrdenas contributed to this work (Aguirre 1963:262-263).

Native plants then made up the biggest arsenal for fighting disease in the early days of Brazil.[26] While some authors argue that the use of native American plants was extremely important in colonial healing (Holanda 1957:89), others point out that only one hundred or so of over four-hundred plants in use at that time were of New World origin (Campos 1955:33). While the Jesuit herb lists, the *Coleções de Receitas,* were later used by incoming pharmacists, barber-surgeons, and physicians, the latter also brought their own European manuals with them (Holanda 1960:148). Such works as Garcia de Ortas, *Colóquios dos simples* (1563) have been noted by Santos Filho (1966:36) as a widely used guide to medicinal preparations. This and other pharmaceutical texts used during the fifteenth and sixteenth centuries were based on Latin, Arab, and Hebrew medical authors (Oliveira Marques 1971:151-152; Carvalho 1928:72-73). Not only were the adopted American plants iberianized, but the medicine practiced and prescribed was directly influenced by Greco-Roman-Arabic writers. The non-clerical practitioners of early Brazil consisted largely of exiled Jews and Jewish descendants who had studied the medical arts in Portugal. At that time they were among the few of Portuguese society who could read the Hebrew and Arabic translations of Galen and Hippocrates, and who could accept the "repugnant" manual work of a physician (Santos Filho 1966:27; Holanda 1960:149).

In addition to herbal remedies, the Portuguese medical heritage also met with many other familiar Indian practices. Both cultures incorporated blood letting, to one degree or other. The Indians bled inflamed areas by means of scarification (Campos 1955:28), while the Portuguese used lancing and applied leeches (Santos Filho 1966:39). Both recognized the need for bone setting, amputation, and closing of wounds (Holanda 1960:146), and utilized sweating and purging actions to purify the body of disease.[27] Each culture also restricted the diet during illness. The Indians were recorded to have rested and fasted in their hammocks (Salles 1971:18), while the Portuguese followed their

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[26] Such plants *cará, urucú, malva, cana fistula, mastruz, poaia, ipecacuahna, jaborandí, jenipapo,* jalap, castor bean, pineapple, *quina,* tabacco, cotton and cecropia were in common use by the Indians (Santos Filho 1966:23; Holanda 1957:113; Salles 1971:19, 51; Martius 1939:235).

[27] Salles (1971:18) indicates that the native population practiced sweating as both a ritual and a medicinal mechanism, by drinking *guaraná (Paullinea cupana),* or utilizing a sweat-bath.

humoral concepts, and consequently, avoided foods usually consumed under other circumstances (Oliveira Marques 1971:21-22). Amulets and prayers to protect against supernatural ills were also used by each culture (Holanda 1957:94, 103).

Both the native and the Portuguese populations attributed some illness to natural causes, and others to supernatural or magical punishment (Santos Filho 1966:15, 44; Holanda 1960:146; Queiroz 1984). However, the Indian contribution to supernatural or magical beliefs of the folk medicine of Brazil has in general been fairly weak, except in the more isolated Amazoninan communities. This is due to the aforementioned reinterpretation of native cures by the early Jesuits and other colonists to fit European ills. Secondly, and perhaps more importantly, the Brazilian Indians' first contacts with Europeans often ended in devastation by disease, rather than prolonged cultural exchange.[28] In the riverine settlements of the Amazon, the *caboclo* mestizo population continues not only the Amerindian household and subsistence technology, but also certain beliefs in the supernatural beings which inhabit the forest, and relationships man should promote with his forest home (Wagley 1964:224-241). Elsewhere in colonial Brazil, African slaves were soon brought in to replace the Indian laborers on the coastal plantations (Freyre 1967:156). The African contribution to folk medicine has principally been the psychological release found in the trance-possession cults which have been continued in Brazil.

In general, however, the supernatural beliefs of all non-Iberian cultures have become synchronized with aspects of Portuguese folk Catholicism. In contrast to other areas of Latin America, Brazil's rural peasantry is not made up of racially or culturally pure populations.[29] Its tri-racial stock has long been integrated, thereby minimizing the differences, and promoting synchronization in otherwise disparate approaches to folk curing.

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[28] This has also been noted by Aguirre (1963:265) in colonial Mexico.

[29] Simmons (1955:60) has pointed out that the belief in supernatural punishment in the form of illness is greatest in areas of high concentration of Indian population in Latin America.

Sources of Traditional Curing in a 1970's Transamazon Agrovila:

Of the supernatural or secular explanations for disease, the folk beliefs of the Transamazon colonists centered on natural explanations for their illnesses. This naturalistic view of epidemiology meant that the colonists emphasized the physical individual in their cures, rather than more ephemeral qualities such as his sinfulness, soul-loss, spirits, or breakage of social taboos.

Interestingly, there were even few instances of *promessas* (vocos) made during the year of this study. In older communities, these vows of personal sacrifice or financial donation to a favorite Catholic saint are frequently offered during times of illness, or other family crisis (Araújo 1959:91, 93, 96; Wagley 1964:220-224). Occult treatments were only occasionally used in this area, and included social or magical explanations for illness. However, the incidence of these types of cures was rare and only seven such supernatural curing techniques were recorded. Perhaps one might explain such phenomena as being related to the newness of the community. Magico-social specialists were reluctant to advertise their skills in the new setting, until it was apparent that such skills were needed. Even after three years, few families know their agrovila neighbors and news of such specialized healing seems to have spread slowly. The Northeastern colonists were the first to request such aid.

The treatment of minor physical discomforts however were considered an everyday occurance and was widely discussed. Physical symptoms, such as pain, bleeding, discoloration of the skin, *etc.*, were of paramount importance not only in naming the disease and its agent, but also in prescribing and evaluating alternative cures. The patient's immediate past was scanned for common behaviors or exposure which might explain his current symptoms. The majority of colonists related causes of illness to natural, rather than supernatural forces. Cases will be outlined in detail in a following section. Briefly, these include a recognition of infectious contagion ("microbes"), weak blood, exposure to the natural elements, certain food combinations or excesses, contact with standing water, a sedentary life, an excessive exposure to heat, accidental traumas, and bites. These are similar to recognized disease agents which have been described for other areas of Brazil (Pierson 1954:281-288; Oberg & Rios 1955:357; Queiroz 1984: 64-70).

Once the patient's symptoms have been traced to one or more of the above causes, the problem was self-diagnosed, perhaps with confirmation from someone with greater experience, or a personal acquaintance who has experienced a similar problem. The consultant goes through the same process of examining the symptoms, and the patient's history. He or she may agree with the patient's self-diagnosis or probe for further information about other causes that the less experienced person might have failed to consider.

At this point the problem is treated with readily available products, to eliminate the specific symptoms, if not their cause. The treatment may consist of pharmaceutical first aid products, patent medicines, shots, herbal poultices or teas, change of activity, changes in food habits, and/or extra care in daily hygiene (see Appendices 1, 2, and 3). In only a few rare instances did the home treatments include massage, fumigation, cupping or sucking.[30]

Local practitioners:

In more traditional settings, women are usually instrumental in maintaining herb gardens, preparing medicinal treatments, and instructing others in their uses (Pierson 1954:290; Wagley 1964:248). Men, however, are often as knowledgeable about such treatments, and often know about non-domestic sources of medicinal plants. This applies even to "women's" medicines *(chás de mulher)*, which are used for menstrual problems, abortion and the birth process. Both men and women are careful to observe the location of potentially helpful herbs and materials, in case of future need.

There is little formal instruction about the techniques of folk curing, except perhaps, between mothers and daughters. This did not occur, however, until there was a perceived need for such information, and often occurred sometime between the daughter's marriage and the

[30] Cupping involves the use of a glass *(ventosa)*, often well heated, that is turned upside down over the affected area. The resulting vacuum pulls the skin up into the glass in a raised welt. This is supposed to extract the offending air or gas that is causing pain. The only examples of fumigation encountered in the agrovila was the burning on *alfazema (Ambrosia* sp.), to bring good luck to a new-born baby. Massage was only encountered in one instance of "blessing" a persistent headache. Extraction of other harmful matter was done by squeezing, as in removing pus from an abscess or a bite.

birth of her first child. Mothers expect their before firt pregnancy daughters to be disinterested, the daughters often feign ignorance of such household knowledge, even when the opposite is true. Such is the role expectation of unmarried women in this community: if there is no family to raise, there is no need for such information to be given and no interest expected on the part of the daughter. As the daughter continues to have children, her relationship with her mother becomes especially intense, as the latter serves as an information source on childhood illness and nutrition and the reproductive problems of the new mother and wife.

Folk specialists in traditional settings include basically two types of curers. One is the *benzador* or blesser, who uses the prayer formulae of folk Catholicism, and magical feats to cure the non-natural illnesses of the community. The other is the *curandeira/parteira,* or midwife who is specialized in gynecological problems, and other illnesses of a more secular nature (Campos 1955:41).[31] In small communities these two categories may overlap. For instance, the midwife may utilize magical formulae to cure an infant of "evil eye," while a blesser may pray to the saints to intercede in cases of naturally-caused illness. The three-year old agrovila, on the other hand, did not have the opportunity to establish these traditional mechanisms, which are so central to the dissemination of medicinal information.

Limitations to folk-curing in the Transamazon colonization project:

Few colonists came to the Transamazon area with muti-generational family groups, and separation from parents and older relatives resulted in confusion as to whom one should consult for home-remedies. Such ambivalence is magnified by many factors. If the colonist woman is recently married, she has moved to the Transamazon area before acquiring the experienced advice of her mother. Many young mothers now lament their lack of attention to such matters saying, "Mocinhas não prestam atenção nessas coisas"(yong ladies don't cave abont sudi thing any more). Others were given "quick courses" in folk curing by their mothers before leaving. This may be the case for older

[31] Campos (1955:41) points out that in addition, there may also be a *raizero* or root doctor, who specializes in the collection and selling of medicinal products. This type of vendor may be linked to African influences.

women, too, as multiple moves of these families over the face of Brazil broke up mother-daughter relationships early in the family history.

Some colonists in the past were fortunate to have had more prolonged economic and physical access to modern medical facilities, particularly colonists from urban areas. Such individuals have forgotten or never used many traditional herbal remedies. Former-urban women trusted pharmaceutical goods and a doctor's advice as much as traditionally isolated women trust their herbal cures and curandeiras. In the Transamazon frontier, however, private physicians' fees were prohibitively expensive, and pharmaceutical goods were costly or even unavailable. In such instances, herbal cures became an economic necessity, but without full knowledge or belief in their value. Finally, herbal lore was also constrained as many colonists did not bring seeds or cuttings to start medicinal gardens in their new homes. This is partially explained by colonization agency advertisements which promised free professional medical care to colonists.

Many rural women, if given a choice, preferred to go to a doctor rather than rely on home remedies. This was true even of those who had lived for many years in the isolated areas of Pará, and were among the first to seek a doctor's help and pay for patent medicines, regardless of the ailment. Professional services were particularly sought for infants, minor children, and the family breadwinner whenever economically possible. The colonists placed "poor health" as the leading contraint to their success as a colonist (Moran 1981:164), even though the agrovila farmers lost an average of only 11.5 days/year to illness or injury, mainly due to the debilitation of malaria (Moran 1981:193).

While health and first-aid services were indeed provided by the Public Health Service, several of the families often felt disillusioned with this care, yet could not afford to go to a private physician. For economic reasons, many returned to home-made remedies. On the other hand, many of these same persons were reluctant to start extensive herbal gardens around their houses, as they planned to move to their individual lots as soon as possible. Lastly, the social links between the agrovila families are relatively weak; few actually interacted with more than their immediate neighbors. Some informal bonds have been created between women who traveled together to the Amazon, or those who came from the same region. It was not long though, before the news of imported herb gardens began to circulate.

Emergence of a folk-herbal curing system in the agrovila:

The women who have become the herbalists in the agrovila are those who had a long experience with folk remedies and/or brought medicinal plants to the frontier area. They are not elderly: the average age of the new specialists is about thirty-five years. These women have raised several healthy children, some of whon are now approaching marital age. This in itself is interpreted as evidence of their skill in health matters. In the past three years, only six women have started extensive herb gardens: two from the Northeast, one from the Central-West, two from the South and one from the Altamira area itself. The latter, an elderly lady and native of the Altamira area, did not as yet serve as *curandeira,* even though she was thoroughly familiar with the wild plants of the area as well as the more generally accepted herbs. She, like many *paraenses,* lives isolated on her lot, away from the social life of the agrovila, which reduces the chance that other women call on her for herbal information.

These women do not sell nor advertise their herbal supplies. They wait until a family requests the use of a certain plant before offering it. As many of the borrowers are interested only in the immediate use of the plant, very few borrowings actually became transplanted in other household gardens during the period of study. This tendency is decreasing, however.

Herbal borrowing is delayed because borrowers are embarrassed to approach these little-known neighbors, and, in effect, make it known they are too poor to afford any other medication. In a situation of need however, there has never been any record of refusal. Sometimes the herb owner does not have the requested herb, and suggests another one, which the borrower may be willing to try simply because there is nothing else to use. In this way, herbs imported from the various regions of Brazil are slowly being introduced to new users.

As the news of these available herbal sources spread, people came from ever increasing distances to borrow from these six women. Even the nurse's aide disseminated such information. In one particular instance, when her supplies of anti-febrile shots had expired, she advised one mother to seek a local source of *sabugueiro (Sambucus nigrum)* to control the fever of a child with measles. Such acceptance from a

"trained" practitioner of course increases the status of the herb owner as a folk practitioner.[32]

The most commonly owned and used herbs are those of Old World origin; herbs familiar to most rural Brazilians (Appendix 1 for herbs and their origins). They are not region specific, and are see planted around the immediate vicinity of the house. Medicinal plants of New World origin are generally found around agrovila houses only if they double as a food source.[33] Otherwise, the latter are gathered or planted away from the agrovila, on the individual lots, and are usually those with strong purgative or emetic action.

This nearly complete physical separation of New World and Old World species may stem from the traditional fear of *coisas do mato* (wild products), or to prevent children from accidental intake. Even local, newer medicinal herbs, familiar to the colonists from Pará state, are feared and avoided by the newcomers. Medicinal herbs that were once wild plants to their Portuguese ancestors are still treated with respect. As we will see later, sickness is a time to avoid all unknown and wild products.

Two factors tend to hasten the incorporation of new plant sources. First, the men were more familiar than women with the non-household environment, as many lived out on their farm lots and returned home to the agrovila only on weekends. As they lost some of the anxiety of dealing with the forest, men reportedly learned of forest medicines. These were guarded with care, as often the farmers had no other medical supplies in their makeshift palm shelters.[34] The colonist might also bring cuttings of Old World plants to the lot to be established as a perennial herb garden for the families' future home.

The other force in acculturation of plants was children, particularly boys of nine to fourteen years of age. These children were allowed the

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[32] One woman in this group also has her own syringe and would administer shots to those who have brought vials of antibiotics, etc., from the pharmacy. Some prescriptions call for multiple injections, and having this woman or the nurse's aide give the injections saves a great deal of money as one does not have to return to the pharmacist.

[33] For example, *urucu (Bixa orellana)* and *goiaba (Psidium quajaza)*.

[34] Some of the plants observed to be planted by men were *mastruz (Chenopodium anthelminthicum)*, *batata de purga (Convolvulus operculatus)*, and *caapeba (Piper umbellata)*.

greatest freedom to roam, not only to visit at other homes, but also to explore the bush around them. They were instrumental in discovering known forms growing in the wild, and learned of new herbs from neighboring families. Many of the better herb gardens were stocked from such findings. Children were often more aware of what other neighbors had in their herb collections than were their mothers.

Central Concepts in the Folk View of Natural Causation

As in other folk medical systems, the Brazilian system presupposes that there must be an internal factor interacting with an external factor in order to produce a disease. Rural Brazilians take several natural conditions to be weakening agents, which deprive the body of its natural resistance to more external agents of illness. By these standards, one must somehow be weakened (internal factor) before one can succumb to a disease (external agent). The weakened body is not seen as a disease state *per se,* and is not usually treated because it has no readily recognizable symptoms.

As the definition of disease depends on perceived symptoms, the therapeutic rather than the preventive aspects of health practices are emphasized (Alland 1970:94). Such a "weakened" state is recognized, however, as a precursor and necessary component of any full-blown disease.

The role of internal versus external health factors:

1. Previous illness: Several weakening factors are recognized in lowering the body's resistance to disease. First, of course, is any pre-existing or recent illness, which further subjects the patient to more serious complications. Therefore if new symptoms emerge which differ from the previous ones, they are reclassified as a totally different disease. It is widely held by this community that simple, that is, non-debilitating or discomforting diseases tend to progress into more serious ones. This expectations reinforces the folk interpretation of clinical patterns of secondary infestions which frequently do exist. The internal factor in this case is the previous disease which has weakened

the body. The external factor then is the lack of proper care[35] or contagion that has allowed the patient to contract a conceptually different disease.

2. Diet: The colonists believe that if one's diet has been inadequate over an extended period of time, one's blood has become weakened and vulnerable to serious illness. This is especially true during periods of intense activity or attacks of intestinal worms. Inadequacy, however, is not only defined by actual quantities of foods, which must be substantial for hard working farmers, but other cultural preferences as well. Rural Brazilians tend to consider their simple food as somehow less healthful than the more expensive foods eaten by local elites. While preferring filling foods, many colonists believed their everyday fare "only served to fill the stomach," and did not really promote body growth.

In the folk view of the circulatory system, the food one eats is transformed by the stomach into elements which make up the blood. This is fairly close to modern medical theory and is found in many areas of Latin America (Kiev 1968:43; Adams 1953:15). Both viewpoints have historical antecedents in the writings of Galen who held that all four humors assimilated ingested foods and expelled waste products (Temkin 1973:89). As the blood is believed to serve both as nourishment to the parts of the body and as general transport system, its make-up and consistency are very important (Queiroz 1984:67).

3. Status of the Blood: If the blood is weakened from an inadequate diet, the blood thins, and does not have enough force to flow effectively through the body. Not only is the quantity and its forceful flow reduced in "thin" blood, but also when an actual loss occurs, such as in hemorrhaging or due to a large intestinal parasite load (Table 3). A person with weak blood is conceived to have little energy, "low blood pressure", and a tendency to chronic illness.[36] Palid children and

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[35] Proper care consists of foods that will help the body through the illness, extra care in hygiene, protection from changes in the environment, and medications that are considered appropriate to the specific symptoms at hand.

[36] Madsen (1955:132) has also recorded the belief that weakness comes from weak blood. He notes that the cure for this is to drink raw egg beaten with wine. A similar cure of egg and various herbs was suggested by the colonists. "High and low blood pressure" were frequently mentioned by colonists and were correctly linked to such clinical symptoms as headaches, pulse rate, obesity, nervousness, etc.

Table 3: Conditions of the Blood

Debilitating Factors	Status of Blood	Improvements
Previous State: - Previously ill. - Poor diet - Intestinal parasites parasites which "drink blood." - Loss of large quantity of blood (hemorragia)	- Sangue fraco (weak blood)	- Better diet, vitamin shots, iron tonics rebuild blood.
	- Blood continues to weaken, and "thin"; does not flow forcefully through the body. Impurities and body heat increase.	
Outside contamination: - *Sangue agitado:* from "heat" produced by hot weather, excess of insect bites. - *Sangue intoxicado:* from allergic reaction to certain" "strong" foods, drugs. - *Sangue sujo:* from history of venereal disease, a sedentary life, lack of sweat. - *Sangue reimoso* includes the above plus "reabsorbed" menses, or too many "hot" foods.	- Blood becomes contaminated from build up of impurities and excess body "heat". Blood becomes "thick" (*sangue grosso*) resulting in high blood pressure, nervousness, as thick blood pushes against the veins and tries to release the impurities.	- Take a cooling blood purifier. - Body pushes out heat / impurities via fever, pus inflammation, skin eruptions - Blood is cleaned by purgatives.
	- Long-term contamination begins to destroy the blood. Blood is now "*sangue fraco*". Leads to *doenças feias.*	

stoppage of the menses in women are also blamed on weak blood. In folk terms there just is not enough blood in the system to perform normal body functions.

The body is weakened through negligence of blood that is considered to be contaminated. Blood that remains contaminated over any length of time is believed to eventually behave like blood which has been improperly nourished. In the short run,. however, it has its own special characteristics. Blood can become contaminated or "agitated" for a variety of reasons, such as insect bites, or medicines/foods which produce allergic reactions.

Other circumstances contaminate the blood by "dirtying" it, such as having a venereal disease, by missing a menstrual period, or accumulating impurities by avoiding purifying, sweaty work. Finally, an excess of conceptually dangerous food, such as wild game, also tends to dirty one's blood.[37]

Such contaminated blood is considered to be too thick *(grosso),* a condition which conceptually opposes weak, thin blood. In this state, the blood again does not circulate as freely as it should, and the colonists believe such phenomena as nervousness and high blood pressure result from thick blood that is trying to "push out." Such blood is constantly seeking an outlet for the impurities and heat that build up in the system (BALBACHAS 1961:1, 11). For example: external factors such as accidental cuts may be transformed to inflamed wounds; small insect bites become pus-filled abscesses, or the minor cold symptoms of a small child evolve into an eruptive show of measles.

In summary, then, thick contaminated blood acts like a seething volcano. If a person is already sick, his condition will worsen, or delay in healing. If there is a relatively minor surface abrasion, the contaminants will erupt in any number of rashes, boils, and inflammations.[38] If, on the other hand, this circulating mass of impurities and excess heat is denied an exit, the blood itself will pay the price. It will become as weak and

[37] Such contaminated states of the blood are referred to by various terms such as *sangue agitado, sangue intoxicado, sangue sujo,* and *sangue remoso.*

[38] The Greeks also consider boils and pimples to be helpful as these aid in cleaning out the blood (Blum & Blum 1965:68).

thin as the blood which, by folk standards, has suffered from an inadequate food supply. Thus, the circle is closed by a third weakening factor which lowers the body's internal defenses to disease.

Between the two extremes of overly thick and overly thin blood, the status of blood in itself plays a major role in the Brazilian concepts of susceptibility and disease (Table 4). Interestingly, while community residents knew little about the interrelations between nutrition, infection, and the blood system, as described by modern science, their interpretations of nutritional status and health are relatively modern. Poor nutrition does make one prone to infection and acts to prolong an illness, and promote secondary complications. Nutrients are carried by the blood to the rest of the body (Silva & Baptist 1969:19 and Williams 1973:11-155, 332-342). Fever does help to kill infectious microbes, and inflammation and pus do in fact occur when the body is eliminating offending organisms and toxins (Alland 1970:81).

4. Hot/Cold imbalance: Another internal/external weakening agent is the notion of hot-cold imbalance. The hot-cold humoral dichotomy, found throughout Latin America, areas of the Mediterranean, North Africa, and India[39], was brought to Brazil by the Portuguese.[40] This conceptual system states that many aspects of the environment and conditions of the human body can be dichotomized as having an inherently hot or cold nature. In medieval times this system was taught in the medical schools of southern Europe and was based on the humoral doctrines[41]. Essential features from these early writings passed into the folk knowledge of Iberia.

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[39] For a history of the expansion of this theory in the New World, Foster 1953:203; Holanda 1960:145-160; Carvalho 1928:72-77; Kiev 1968:23-26; Martius 1939:51-53 and Oliveira Marques 1971:151-152.

[40] Several authors have noted this system in India (Carstairs 1955:120-134; Jelliffe 1969b:64; Opler 1963:32) and Greece (Blum & Blum 1965:87). Opler and Jelliffe contend the humoral theory stems from ancient Ayurvedic texts and was later adapted by the Greeks (Jelliffe 1969a:309).

[41] The theory of body humors was an early Greek system by which they explained both the internal workings of the body and behaviors exhibited by the body (Taylor 1922:20). The four humors consisted of blood, phlegm, black bile, and yellow bile (Foster 1953:208). These humors, plus three *pneuma* (nervous reactions, respiration and digestion) all were combined by Galen in an explanation of the body's combustion process (Taylor 1922:104). Each humor also had a combination of four aspects (hot, cold, wet and dry), and the various organs -shared such aspects, for example, the heart which is hot and wet. Saunders (1954:148) and Adams (1953:15) both point out that blood tends to predominate in Latin America. These humoral aspects are actually older than the theories of Hippocrates (Taylor 1922:14; Opler 1963:32). Examples from Guatemala (Logan 1973:392; Adams 1953:23-52), Mexico (Madsen 1955; Lewis 1951:357; Redfield 1950:93; Currier 1969:251) and Peru (Simmons 1955:62).

Table 4 - examples of disease agents and resulting cures

Disease	Internal Agent	External Agent	Symptoms	Cure
1. Malaria	- Weak blood (poorly fed)	- "Hot" stagnant water - Mosquito bite transmits "hot" water	- Violent, recurrent fever, chills, nausea (hot)	Antimalarials (Bitter, hot)
			- Liver pain	"liver medicine" (cool?)
			- Contaminated, weak blood	Vitamins (cool)
2. Measles (*sarampo*)	- Children are naturally weak - Weak blood	- "Hot *bafo*" (breath) - "Catch another's fever" - "Catch it from the air"	- Malaise, fever, red rash (hot)	*Sabougeiro* (hot)
			- Cough, congestion (hot)	*Espriteira* (cool?)
			- Nausea, diarrhea (hot)	*Hortelã miudo* (cool) *Capim Santo* (cool) or Guava leaf (cool)
3. Intestinal parasites (*vermes*, or *lombrigas*)	- Weak blood (poorly fed)	- Eating with dirty hands - Eating raw vegetables	- Thin, palid, "lack of blood"	Iron tonics (?) Vitamins (cool)

Table 4 - Continued

Disease	Internal Agent	External Agent	Symptoms	Cure
		- Walking barefoot - newly opened ground	- Cranky, nervous (hot)	*Capim Santo* (cool) *Poejo* (hot-cool)
			- Worms in feces, stomachache	*Batata de purga* (cool) *Hortelã grande* (hot/cool) *Mastruz* (cool?)
4. Stopped or scanty menstrual flow (*sangue preso / regra não quer descer*)	- Body "hot" from period	- Ate something "cold" - Exposure to cold	- Abdominal pain, headache, nausea, nervousness (hot)	*Poejo* (hot / cool) *Hortelã miudo* (cool) *Canela* (hot-cool) *Elevante* (hot / cool) *Hortelã grande* (hot / cool)
			- Scanty menstrual flow (cold?)	*Arruda* (bitter-hot) *Cena* (bitter-hot) *Quina* (bitter-hot) *Alfazema* (bitter-hot) *Mostarda* (bitter-hot) *Ortemisa* (bitter-hot)
5. Excessive menstrual flow (*hemorragia*)	- *Sangue remoso* (contaminated) - Body "hot" from period	- Ate an excess of "hot" foods	- Menstrual flow is heavy, dark, clotted, strong odor (hot)	*Maravilha* (cool) *Rosa branca* (cool) *Batata de purga* (cool) *Pega pinto* (cool) *Fedegoso* (cool ?) *Arruda* (hot)

Table 4 - Continued

Disease	Internal Agent	External Agent	Symptoms	Cure
6. Open, inflamed wound (*ferida inflamada*)	- Contaminated blood	- Previously closed wound is opened - Lack of care - Eat "hot" foods	- Becomes larger, pus, weeping, inflamed, sore (hot)	Mercurochrome Iodine (hot?) Alcohol (hot?) Absorbent powders (*pó secante*), *Agua oxigenada* (?) Vitamins (cool) *Batata de purga* (cool)

The humoral theory states that a balance between the four humors and their aspects must be maintained to keep the body in good health (Temkin 1973:87-88). Hippocrates established the practice of studying physical symptoms to determine which particular humors or aspects are out of balance. He, and later Galen, also established the treatment of such imbalances of hot or cold humors with foods and medicines of the opposite nature. Lastly, the improper digestion of foods was believed to create toxins which impaired the circulation of the four humors, and subsequently led to an excess of the hot aspect, in the form of fever (Taylor 1922:89; Kiev 1968:43 and Foster 1953:203).

Hot-cold imbalance then, refers to an internal upset of the hot or cold aspects, which leaves the body in an excessively hot or excessively cold state. In Brazil, the excessively hot state of imbalance is much more prevalent in the folk definition of disease than the problem of excessive cold.[42] This may be brought about in several ways. An excess of conceptually hot foods may be ingested, or the body overwarmed by sexual or strenuous activity. The body is also believed to be overly warm when it gets out of bed, or when it is exposed to a hot climate. Household activities, such as ironing and cooking, also tip the body's hot-cold balance. In all these situations, the persons natural harmony of temperature has been upset, therefore, it is vulnerable to injury from sudden external changes in temperature. Applications of the hot/cold dichotomy, to the use of food, medicines, and perceived states of heath are desribed for rural areas of the states of São Paulo (Queiroz 1984) and Pará (Maués and Maués 1977).

Threats to an overly warm body consist of introducing a cold item in the environment (Table 5). Some examples might include the eating of conceptually cold foods after hot ones, or exposing oneself to a draft of cool air after a heavy meal. Therefore, when the body is overwarmed by an increase of its internal heat, it is vulnerable to hot-cold shock and the symptoms which then result. The epitome of hot-cold shock seen in the Brazilian system results in a disease called *congestão* (or variously *constipação*). The examples given usually involve cases in which large amounts of "hot" foods were eaten, and then the diner was exposed to a

[42] The cold imbalance is found in other areas of Latin America, however, with greater frequency. Examples particularly have been studied by Foster (1953:205); Simmons (1955:62) and Currier (1969:259) for Mexico and Peru. Illnesses believed to be "cold" are respiratory ills, the chills of malaria, and internal pains such as rheumatism.

very "cold" item, such as bananas, ice water, or a cold bath. The patient feels the urge to vomit, but cannot. According to the folk explanations, all body flows are stopped, including the blood, urine, fecal matter, and air. This massive "congestion" of the system, unless recognized quickly, is said to be fatal. The only salvation is to administer a strong emetic and purge the body quickly of the offending food.

5. Vulnerable Stages of Life: The Brazilian version of the hot and cold dichotomy also stipulates that certain periods of the life-cycle involve hot-cold imbalance. These include infancy, the menstrual cycle, and postpartum periods, all of which are considered to be hot.[43] A similiar description of weakened or dangerous phases of the life cycle is given for rural Amazonian populations (Maués and Maués 1977), many of which replicate those described here. This, then, constitutes a fifth form of internal weakness and susceptibility, as all persons in these stages are highly prone to hot-cold shock and resulting disease. Therefore, their food, environment and medicine are carefully regulated to avoid increasing their natural heat, or shocking them with cold.

These five categories of natural disease factors are used to scrutize the human body and its signs. The individual, not his family group, is involved in the curing processes. His physical symptoms alone are central to the diagnosis and assignment of cures. His immediate past is searched for evidence of one of the five weakening agents that might have opened his body to other disease agents. In these, natural explanations revolve around the state of the blood, as it is affected by the balance of heat and cold in the system, or possible weakness due to a current illness. These then weaken the body internally, but often do not serve as the sole causes of the diseases recognized by rural Brazilians. In this system, conceivably one may exhibit no debilitating symptoms even though suffering from weak or contaminated blood. Some other factors can usually be pointed to as an external agent or condition which led to a certain set of symptoms (Table 5). The inter-relationships between these internal weakening agents and external disease agents will be elaborated in the following Chapter.

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[43] Brazilian mothers referred to new babies as "still warm from the womb." Logan (1973:387) also found children were believed to be "warm" in Guatemala, as did Madsen (1955:127). Such "delicate states" are also referred to by Wellin (1955:78) in his Peruvian studies.

Table 5 - Problems Caused by Hot-Cold Shock

Overheated State	plus	Cold Shock	Result
1. Menstruating woman		eats "cold" lemons or cold drink or walks in rain	Flow of menses is stopped (*sangue preso*)
2. Feverish child		eats "cold" papaya gets a cool bath	Fever is trapped in body (*recaída de febre*)
3. Eating a large meal		drink cold water take cold bath eat several cold fruits	Fatal if not purged (*Constipação*)
4. High fever of Malaria		drink sugar cane juice	Instant death
5. Drink coffee		drink cool water	Tooth decay
6. "Hot" infant in the teething process		use of a cool remedy in excess formula mixed with cold water	Teeth do not erupt properly
7. Newborn baby with unhealed navel		given cool herbal tea	Navel will not heal
8. Mother who is "hot" in postpartum		eats "cold" acid fruits given at hospital	Death
9. Menstruating girl		eats a mango	Death
10. Febrile person		exposed to mist or dew (*sereno*)	Worsens to pneumonia
11. Walk in hot sun to the health post		Given a cool injection.	Illness?
12. Physical exertion (woman)		caught in cool rain	Menstrual period becomes irregular
13. Wash dishes in hot water. Wash clothes in hot sun		rinse them in very cold water water splashed and on head	Pain and swelling Chest congestion.

COMMON HEALTH PROBLEMS IN THE AGROVILA: NATURALISTIC EXPLANATIONS AND CURES

As shown earlier, the basic folk science of the agrovila is derived from some of the earliest ideas in Western medicine. The central role played by the blood; the role of nutrition, the origin of fevers, and generalized infections; the notion of susceptibility and external changes in the environment, all formed the basis of modern medicine until Pasteur and others re-examined these phenomena in terms of microscopic disease agents.

While some of the colonists' explanations of disease appear simplistic, it must be conceded that such explanations are relatively sophisticated in light of their incomplete comprehension of the workings of these invisible agents. An individual is not sick unless there are visible or physical symptoms. At the same time, it was asserted that one does not have "microbes" if there is no visible "dirt."[44] Microbes were associated with dirty houses, soiled clothing, eating utensils, excrement, the air, and especially the soil. Areas newly cleared of vegetation with exposed soil were thought to contain more microbes than long settled areas. As the agrovila was both new and visibly dusty, microbes were certainly present.

Other carriers were not recognized, such as insects, vermin, water, or other human beings. These were only considered dangerous to health as potential carriers of visible filth. Therefore, microbes were known to be disease agents, but the colonists were not at all certain how they affected the human system, nor what diseases are caused by such entities. In the absence of the modern theory of infection, the colonists use the symptoms themselves in order to explain the physiological processes of an infectious disease.

Common Illnesses in the Agrovila:

Several types of health problems were common in Vila Roxa. Those which the colonists considered most important include accidental

[44] Wellin (1955:95) also illustrates this sentiment in Peru, and adds that public health nurses are disliked as "dirt-snoopers" by the local housewives. As the local women believe disease is caused by filth, the nurse's lectures on disease often creates hostility in those who take such pride in their clean homes. This reaction was also shown in the agrovila, and in fact, the nurse's aide did attribute some cases of illness to "... a falta de higiene" or lack of cleanliness in the homes.

Table 6 - Fsesp Hospital Admittance data (Altamira) 1971 - April 1974 Villa Roxa and Vicinity Patients[a]

Ages	Respiratory	Malaria	Gastro-Intestinal	Dehydration Malnutrition	Trauma	Poisonous Bites	Blackfly Hemorrhage	Reproductive	Other
0-4 years	10(2)[b]	1	4(9)[c]	7	-	-	1	-	7
5-9 years	-	1	-	1	-	-	-	-	5
10-14 years	1	2	1	-	1	1	1	1	3
15-19 years	-	3	1	-	1	-	1	-	2
20-24 years	2	1	1	-	1	1	-	2	4
25-29 years	1	2	2	-	2	-	-	8[d]	2
30-34 years	2	1	1	1	4	2	-	-	3
35-39 years	-	5	-	-	3	1	-	2	1
40-44 years	1	-	-	-	1	-	-	1	2
45-49 years	-	-	1	-	1	1	-	2	1
50-54 years	-	1	2	-	-	-	-	-	2
	19	17	22	9	14	6	3[e]	16	31

[a] This data courtesy of Nigel Smith, then a doctoral candidate in geography, University of California, Berkeley, taken from patient files at Altamira hospital. This chart includes patients from Vila Roxa, the temporary camp, and four nearby side roads.

[b] Two respiratory problems involved treatment for dehydration.

[c] Nine gastrointestinal infections were associated with dehydration.

[d] All cases were miscarriages or uterine bleeding.

[e] In the case of excessive number of blackfly bites, or individual sensitivity, patients may have an allergic reaction to the blackfly irritant, which results in surface hemorrharging, and in some cases, death.

trauma, malaria, problems of the reproductive system childhood diseases, and skin lesions. Such problems were worrisome due to their relative frequency and severity, and in fact, the first two represented the cases most frequently treated by the Public Health programs (Table 6)[45].

Folk curing, however, usually only dealt with four out of five of these maladies. Accidental trauma was mostly incurred by the men, during the hazardous tasks of clearing and burning of the fields. A severe injury involving the recognized breadwinner of the household, called for quick exodus to the hospital without any attempt at home curing.[46]

a. Malaria: Malaria was responsible for the highest rate of hospitalization for any disease in the Transamazon area. Until the 1970's, malaria in Vila Roxa was limited principally to men who lived on their lots during the week. Their families, who remained in the agrovila, or slept there at night, were less exposed to mosquitoes, given the high, well drained location of the agrovila. When families began to move out to the lots, the incidence of malaria rose among women and children. During the year of study, 20 per cent of the Vila Roxa families had at least one member who contracted malaria.

Many colonists contend that in order to catch malaria, one must have "weak" blood[47]. Secondly, malaria is believed to be externally induced by having walked in, been exposed to, or having ingested "hot" water. Hot water refers to any body of still or stagnant water, which feels warmer than the nearby flowing streams[48]. Other colonists include the mosquito vector as well, explaining that stagnant pools are full of rotting

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[45] The hospital does not admit children with measles, etc., but rather those with bronchial and gastrointestinal secondary infections which complicate these childhood diseases. Skin lesions are so common that they are usually treated at the agrovila health post.

[46] Only one man was hospitalized for injury during the study period. He never fully recoverd, and his wife took over the financial obligations of the family by gardening and taking in laundry. For further information regarding the incidence of trauma and malaria in the Vila Roxa area, Moran (1975).

[47] This is the explanation for why some farmers get malaria, while others do not. If the blood clear and healthy, one cannot pick up the disease from the standing water.

[48] The belief that warmed water becomes unhealthy is also found in Wellins (1955:78) famous account of water-boiling in Peru. The colonists also attribute catching colds to having drunk water that has been standing, or vegetables that have been heated by the sun.

material, which is attractive to mosquitoes. When the insects bite, they transfer some of this hot, rotted material into the bloodstream.

The direct or indirect exposure to the hotness of the water is said to increase the body's own stores of natural heat, and causes a violent fever. This fever is distinguished from other fevers because it does not go away with mild remedies, and keeps returning. While the classical medical description pictures the cyclical fever as returning at the same time each day, this does not happen in every case. Perhaps, this explains why the colonists did not include the element of cyclical periods of fever/relapse in their description of malaria.

As malaria symptoms are severe and highly debilitating, Vila Roxa residents wasted no time in getting a blood test, and the antimalarial pills given by the Health Service (FSESP). Most colonists did not attempt to cure malaria with home remedies when pharmaceutical products were provided *grátis (free)*. The Health Service, at times, had some problems giving the blood test for malaria because a colonist had taken anti-malarial pills (often borrowed from a neighbor), which suppresses the activity of the malaria plasmodium in the bloodstream. While ideally the blood tests were to be analyzed and returned within one day, it was often two to three days before the results were returned to the patient.

Once correctly diagnosed, the colonist often did not understand the complex instructions for taking the malaria medication. Due to supply shortages he may be given only a limited amount of medications, which forced him to come back to the health post. Within two or three days after beginning the antimalarial treatment, the violent fevers and chills sometime stop. As the folk system dictates that one has a "disease" only when there are symptoms present, the patient often stops taking the medication at this point. Compounding this pattern is the economic rationing of pharmaceutical products, in case one gets sick again. Anti-malarial drugs were expensive when purchased at a pharmacy, so again rarely was the full dose taken which would kill the plasmodium. So, true to cultural expectation, malaria did in fact return and the medicine is needed again.

When the symptoms subside and the colonist becomes mobile, he returns to his daily chores. He may take vitamin shots or tonics to rebuild his "weak" blood, and several vials of "liver medicine" for his

painfully enlarged liver[49]. In folk terms, the liver becomes painful because so much bitter malaria medicine has been taken and bitter items are considered extremely hot. This was the only recorded automatic utilization of largely placebo liver tonics. The only other instance of their use was one colonist who used a native plant, *caapeba (Piper umbellata),* when his liver bothered him after a heavy meal. In no other case of illness were liver tonics used along with other pharmaceutical prescriptions. No other medicine was considered as hot or bitter as antimalarial drugs. Only native *paraenses*, and northern *maranhenses* recognized local *quina (Quassia amara)* trees whose bark is used to combat strong fevers, and were the original source of quinine. This "hot" bitter medicine, however, is necessary to help "push out" the malarial fever. To take a medicine or food that is classified as "cold" at this time is said to invite death. The painful liver is blamed on the excessively "hot" medicine rather than the action of the disease itself.

b. Childhood diseases: The second most common health problem in the agrovila is the occurrence of infectious childhood diseases. In the study period (1974), a single measles *(sarampo)* outbreak affected a large portion of the children, most of whom were under five years of age. No distinction was made by the local categorization of German (rubella), or common "red" forms of measles.

Otherwise, childhood problems were limited to individual cases of intestinal worms, gastrointestinal infections, and respiratory ailments. As noted earlier, children are considered "weak" in infancy and early childhood, and such weakness is believed to promote the common childhood illnesses. The reasononing is that the child must be unusually susceptible from the ages of one to four because such diseases are never caught again in one's lifetime.

Along with being internally "weak," the children catch such illnesses from "breathing the hot breath of another sick child," catching another's "fever," or simply "picking it up from the air."[50] Discussions of

[49] As the malaria plasmodium invades the red blood cells, it extracts the methionine and other amino acids from the hemoglobin to synthesize new plasmodium. In this process, biotin, riboflavin, and calcium are also absorbed by the invader. Such protein and vitamin deficiencies then are later noted in the malaria patient. His blood does indeed require "rebuilding" (Jelliffe 1968:146).

[50] The idea of "hot breath" as a contagious force is also mentioned by Wellin (1955:92) and Foster (1953:205) for other areas of Latin America.

childhood diseases seemed to incorporate more modern notions of infectious contagion than any other health problem. This theory of contagion, however, rarely included any reference to *microbes* or viral/bacterial agents of disease. Mothers were thus unsure why immunization programs were helpful. Unfortunately many only recognized that the imunizations themselves often made the children feverish and ill. As most eruptive childhood diseases begin in similar ways, several mothers swore their children caught some diseases even after being immunized for them.

Similar symptoms, such as fever, runny nose, cough, and skin eruptions, caused many mothers to lump the various childhood ills as *"febrezinhas das crianças"* (little children's fevers), which included recognized *varicella* (chicken pox), *sarampo* (measles), and other respiratory infections. Using fever as a typical characteristic also classifies these ills as "hot." The child's weak blood is believed to accumulate impurities in it after being exposed to the contagious agent (listed above). As these impurities disrupt the regular flowing of the blood, fever accumulates in the body, which further "agitates" the blood. The fever in itself is seen as potentially helpful as it serves to push the disease out through the skin[51]. When the fever "breaks," it leaves the impurities on the surface in the form of a rash.

The therapeutic ideal at this stage is to help the fever to break out by the use of "hot" herbs such as elderberry *(Sambucus nigrum)*. This herb promotes sweating, which the mothers believe indicates a rise in body temperature. Sweating is usually followed by the eruption of the rash and a lowering of dangerously high body temperatures.

The most critical part of the treatment involves keeping this escaping fever out of contact with anything which is conceptually "cold," as it is feared the fever will recoil and reenter the body. Mothers actually reported seeing "the rash recede back into the body." The reentering fever lodges in various parts of the body, as in the lungs, intestinal tract, or the throat. This trapped fever, if left untreated, leads to pneumonia, severe diarrhea, croup, or even death. Such respiratory and intestinal complications were so common some mothers viewed them as part of the natural sequence of a childhood disease.

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[51] This supportive role of body heat, especially fever, is mentioned by Kiev (1968:43). In Mexico it is believed that heat keeps the humors moving, and helps to restore the imbalances that occur in the system.

The most infamous infection was believed to be measles and hospital records confirm this impression. Complications such as nausea, diarrhea, coughs, and pneumonia, were believed to follow the especially dangerous fever of measles. This is in accordance with the general folk theory that disease symptoms exhibit a natural progression. Childhood diseases were said to begin as "a little cold" *(gripezinha)*, or runny nose and malaise. Then the child exhibits fever, and in some cases the eruptive rash, which then reclassifies the disease as one of the "childhood fevers." If the fever reenters, it weakens the blood, and the patient contracts a *"doença feia"* (ugly disease). This is a general euphemism for diseases with severe symptoms, such as pneumonia, croup, "wild cough," and even tuberculosis. In the latter, the blood is believed to have become so weak as to turn watery[52].

After a child recovered from the severest symptoms, the mother may give him a blood purifier to "clean out any remaining impurities." Vitamin shots and tonics were used much for the same purposes as they acted to "cool" the blood, but also helped rebuild the child's "weak" blood. Vitamins and purging blood-purifiers (Appendices 1 and 3), both being classified as "cool," were avoided during the febrile stage of the illness for fear the coolness might drive the fever back into the body. At the same time, their purifying action tends to, worsen the skin eruption temporarily, according to folk belief. The mothers wish to spare the child any further discomfort, or unneeded risk. If a childhood fever "caused" nausea, diarrhea or chest congestion, the usual treatment was to also cool these hot maladies with conceptually "cooling" food and herbs.

If, on the other hand, gastrointestinal symptoms have not followed a febrile disease, it may be blamed on other "hot" agents. In such cases, exceptionally hot weather, sitting on the hot ground, having eaten too many "hot" foods, or even teething,[53] may be indicated as the cause. Most mothers reasoned that if they controlled the nausea with cooling

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[52] Harwood (1971:1154) in his study of hot-cold beliefs of Puerto Rican patients also notes that colds are believed to be potentially serious as they can cause a chain of illness, which may even result in tuberculosis.

[53] Most mothers asserted there is an illness associated with teething which most doctors deny. Classic symptoms include a small fever, some rash, nausea, and diarrhea. The fever is said to cause the other symptoms. Some mothers give a cooling purgative to "purge the teeth into erupting," while cooling the blood of the fever. Other mothers are more leery of this technique.

herbs, and feed the child "cool" easy-to-digest foods, the diarrhea problem would eventually fade away.

Major disagreements arose over physicians' treatment of nausea-diarrhea cases using a prepackaged glucose-salt (and often antibiotic) mixture, which was to be mixed in sterile water. Many mothers said they understood the doctors to give instructions that no other food be given except this *soro,* until the symptoms ease. As they watched their children lose weight and become listless, they would return to the doctor and insist he give a medication to control the nausea. That way she could feed the child "to give it strength and animation," while curing the diarrhea at the same time[54].

If the gastrointestinal symptoms appeared suddenly, could not be traced to any of the above causes and failed to respond to treatment, the mother may infer that her child had contracted the "evil eye." She may have tried familiar or even new herbal remedies to cure the symptoms. Perhaps the doctor prescribed *soro,* but to no avail. At this point, she may seek a blesser to cure the disease. The *benzador* in the agrovila[55] generally attributed the "evil eye" to an outsider who had envied the child, or even to the child's own parents, if they had experienced anger or resentment toward the child. Both are considered unacceptable social behavior. Treatment for *mau-olhado,* and a similar malady, *vento-caído,*[56] took place four times during the year of study. All cases involved infants of Northeasterner parents. Other cases of magical cures involved adults, whose symptoms did not conform to known patterns or respond to known medicines. Such ills involved persistent headache, a

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[54] Williams (1973:410, 370) perhaps illustrates the conflict of cures inherent in combined nausea-diarrhea cases. For nausea she suggests small frequent meals of dry, easily digestible foods, such as some carbohydrates. On the other hand, non-infectious diarrhea calls for a reduction of food intake, especially of carbohydrates and fats, and an increase of fluids. The Brazilian doctors seem more intent on controlling the diarrhea, while the mothers are more interested in the nausea.

[55] *Vento caído* is similar to the "fallen stomach" disease described by Foster (1953:211) and Kiew (1968:106-107). The disease results from a child's gasp of surprise, as in taking a sudden fall. This air becomes trapped inside. Parents blame themselves for neglect of the child. A full decription of "folk anatomy" in Brazil is given by Ibañez-Novión et al. (1977), and is useful in describing the possible system associated with reported symptoms.

[56] There were two blessers in the communities both mulattos who had married into one of the extended kin groups, from Minas Gerais.

rash on the lower leg, snake bite, and contact with a spider. Injury due to interpersonal violence or animals classified as "evil" often are interpreted as requiring more than common home remedies, perhaps a prayer or other magical resolution (Loyola 1987:39-40). In the agrovila, Pentecostal protestants did not participate in, nor request this type of cure, as they profess not to believe in them since their conversion to Protestantism. No specific food requirements or prohibitions were noted in the above cases, as has been noted elsewhere (Maués and Maués 1977:140).

c. Womens's Health: We now turn to health problems of the women of the agrovila, which principally involved the reproductive system. Herbal remedies associated with such problems accounted for one-third of the commonly used herbs. The majority of these were used for symptoms linked to the menstrual cycle.

Concepts about menstruation often seem the ultimate paradox in explaining the Brazilian hot-cold system. A menstruating women is classified as "hot," as are her menses. She is therefore weakened internally from this heat and subject to hot-cold shock. If a menstruating woman is exposed to a "cold" situation,[57] it is believed that her menstrual flow will stop, and become trapped in the body. Therefore, conceptually "hot" remedies are often given to counteract this cold shock, and release the menses, and include such "hot" herbs as cinnamon, senna or rue (Appendix 1).

Symptoms created by the trapped heat of the menses are subsequently classified as "hot" as well. Menstrual symptoms such as nausea, nervousness,[58] lack of appetite, abdominal pains, and headache, are attributed to this excessive "heat" and are relieved by a cooling remedy. This dilemma is particularly acute if the menses fail to appear when expected. To get the flow started, a hot remedy is needed, to calm

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[57] These are basically the same conditions listed for childhood diseases. If a woman eats "cold" fruits, she may find a white vaginal discharge following her period. This is referred to euphemistically as "white flowers" (*flores brancas*), and are believed to result from impurities in the blood, from eating a cold fruit at the wrong time.

[58] Nervousness and the resulting stomach disorders can also be calmed by herbal "tranquilizers" (*calmantes*), such as those listed in Appendix 1, or by cooling foods such as sugar cane juice, sweetened teas or vinegar. The latter has also been noted by Kiev (1968:136).

discomforting symptoms, a cool one is indicated. The "hot" herbs such as rue, *fedegoso (Cassia occidentalis),* senna, and *quina,* were used to encourage reluctant periods, and were also recognized by the women as potential abortificants, and have a bitter flavor, which would label them excessively hot, like antimalarial pills. No woman viewed the use of such herbs as a means of family planning, but rather as a way to "ensure the regular flow" of the menses. Only one woman was known to use such a monthly tonic of "hot" herbs. Others used them only if the period was late or scanty. Women advised against using these hot herbs one if is already certain of pregnancy, as hemorrhaging might result. At least this fear deters the use of such abortive medicines for excessively late menstrual periods (Balbachas 1961:163).

Generally, the "hot" remedy is taken first at the earliest sign of delay in the cycle. Then a cooling herb is taken if the other symptoms persist. Such an herb is also said to "regulate" the period. That is, it removes discomforting side effects, and calms an excessively heavy flow, should there be one. In some instances, herbs used for menstrual problems have a dual personality, such as *poejo (Mentha pulegium).* This herb is considered cool, as it has a mint-like fragrance, but it also leaves a piquant taste in the mouth when chewed, thus it is slightly "hot" too.

Theories about the menses are also linked to the internal conditions of the blood. If the menses appear dark, clotted, and flow heavily, the woman assumes her blood is too thick *(grosso),* and possibly contaminated in some way. In this case, she may take a cooling blood purifier to cleanse her blood. If the menses are scanty, or do not appear, she believes that her blood must be weak, either through an inadequate diet (as indeed may occur in true cases of malnutrition), or through continued contamination. The most common recourse is to fortify the blood with an iron tonic or cooling vitamin shots, while a hot herb may be used to "call down" the menses.

When a woman wishes to become pregnant, she may try to facilitate conception by taking a blood purifier, such as *pega pinto (Boerhaavia hirsuta?),* castor oil, or *batata de purga (Convolvulus operculatus).* These aid in clearing the system of impurities, and "cleansing the womb". During pregnancy she continues such use. According to informants, a woman continues to menstruate during the whole gestational period, but the menses are not allowed to escape. The

"extra" blood being recycled into the system makes the blood too thick to flow properly. This, in turn, leads to the build up of impurities and extra body heat. To remedy this, the woman may take a number of mild, cooling blood purifiers, to cleanse and "thin" the blood *(afinar o sangue)* (Appendix 3). Hot herbs and strong purgatives are to be avoided during pregnancy as they will cause the menses to fall, resulting in hemorrhaging and abortion. Colonist women took calcium and B_1 shots in the last month of pregnancy, also to "cool" the blood, and thus prevent excessive hemorrhaging during childbirth. Calcium does have a definite role in the clotting mechanism, and is often used clinically in the treatment of hemorrhages (Williams 1973:128), as well as as nutritional supplement for the mother and fetus.

Nearly all the expectant mothers of the agrovila consented to go to the Altamira hospital, rather than have their babies at home. The Public Health doctors especially encouraged this for mothers who were to deliver for the first time. The women themselves agreed that the first birth was always unpredictable, and that a doctor's aid might be needed. Even more experienced mothers felt the agrovila was a dangerous place to have a baby because of the excessive number of *microbes*, and visible dirt and dust. This was one of the few actual references made to the germ theory. Therefore, women preferred to entrust their fate to an unfamiliar, but presumably sanitary modern hospital.[59] There the deliveries were assisted by a trained midwife and supervised by a doctor.

Some fourteen women, all over age 20, out of forty-eight households bore children from November 1973-October 1974. Whether they returned to the hospital for future deliveries depends on their first experience. While some felt reassured by the extra cleanliness, others were angered by what they considered rough treatment, poor food, and unnecessary isolation from visiting family.

A new mother usually stayed two to three days in the Altamira hospital. Her infant was immunized against tuberculosis. The mother was given special instructions regarding the care of the infant's

[59] Only one mother had her baby in the agrovila during the year of study. She convinced the nurse's aide to deliver the child.

umbilicus,[60] including a kit of gauze and mercurochrome to continue treatment at home. The agrovila's nurse's aide makes a post-partum visit in the home to weigh the child, check the umbilicus, and give basic information on baby care. However, her advice about child care was often scoffed at by the agrovila mothers. The aide herself was single and had no children of her own.

The post partum period is one of the most intense times of personal hygiene and diet regulation in a woman's life. The new mother is seen as extremely vulnerable as her body is believed to be both excessively "hot" and "open", that is, extremely vulnerable to disease. The windows of her room are closed even in hot weather to protect the mother and her "hot" infant from drafts. She will spend two to three days in bed, lying on her side, with her legs drawn together. This position is thought to aid her body "to close". Even mothers who have been to the hospital will follow this routine when they return home.

The mother avoids excessively "cold" foods to keep from shocking her system (Appendix 2), and excessively "hot" foods to reduce the danger of "uterine inflammation". The foods she does eat in the first few days are light colored and bland, and usually starchy. These include specially bought cookies, crackers, oatmeal, and breads, with special teas and marmalades to accompany them. This is a time to be pampered. A woman may openly bemoan the high cost of such care, but she praises her husband's thoughtfulness in providing such a "good" diet.

This period of bed rest, securing extra household help, and regulating one's diet is referred to as *resguardo.* The length varies from thirty to fourty days. A woman may have hired help or asked a female relative to come and launder, cook, and houseclean for this period. The new mother avoids these heavy jobs until as late as possible. Ironing and cooking particularly are avoided, as they may cause heat to enter the womb, and thus cause inflammation. During the first week, it is common

[60] The health posts have a program of prenatal care which includes a gynecological examination, blood and urine analysis, and a series of three tetanus shots to help control umbilical tetanus. Most of the colonist women did not know what these shots were for, and many only appeared for their prenatal examinations during the ninth month of pregnancy.Some only had time therefore to receive one or two tetanus vaccines. No cases of umbilical tetanus appeared in the infants born during the period of study, however.

for the woman to take a patent medicine called *água inglesa*[61] to "clean out all the dirtiness left behind in the womb." Similar concepts on the role of the blood and hot/cold shock have been described by Queiroz (1984:69) for both the new mother and her offspring.

Most of the food prohibitions are similar to the ones followed during menstruation, only they are more rigidly enforced (Appendix 2). Almost all the women who had their children in the hospital noted that hospital food often included forbidden items. Some of them ate the foods anyway as they reasoned, "if anything went wrong, the doctor was right there to help." Older mothers warn, however, that these women will later pay for this carelessness by future reproductive problems. As the *resguardo* progresses, they slowly resume normal activity.

d. Skin diseases: These were so common that people, including the visiting FSESP doctor, began to view them as less than serious. This category included a broad range of complaints, from cuts and abrasions, to insect bites, rashes, and ulcers. Folk explanations about the reactions and developments of these surface problems again reflect the recognition of internal and external factors. As in the previous examples, the internal factors are greatly dictated by the status of the blood. Even during the course of a skin problem, changes in the conditions of the blood will be reflected in the outward appearance of the wound.

The line of distinction between internal and external contributing factors is less clearly drawn in the case of skin lesions than in any other malady. Perhaps the idea that the skin serves as a principal outlet for the blood impurities tends to confound the concept of internal and external factors. For instance, welt-like reactions, heat rash, and closed abscesses, were often directly attributed to some problem with the blood itself and included: insect bites, a reaction to the excessive venom injected by numerous bites, eating foods which were too "hot," allergic reactions to foods, having one's blood "agitated" from the hot climate, "microbes" from the soil, or having dirty blood.

Closed surface abscesses *(tumores, furúnculos)* on the other hand, were more likely attributed to an internal state such as syphilis, dirty

[61] Água inglesa (English water) is a very old remedy, as Salles (1971:51) lists this as one of the patent medicines sold in colonial Brazil.

blood resulting from a sedentary life, and poisons injected into the blood by the blackfly. The health post doctor, however, attributed them to "poor nutrition," which in folk terms would have caused weak blood. While staphlococcus infection was recognized as a "cause," the precipitating factor was the patient's nutritional status in his version. Skin discolorations *(manchas)* came from weak blood or food sensitivity. Other colonists, however, would include an external cause as well, such as contagion by another *mancha* or *microbes.*

Skin problems in the folk Brazilian system of classification are divided into an "open" or "closed" category, depending on whether a break in the skin surface is present. Closed surface problems include the itchy rashes, whelps, accidental burns, abscesses, and skin discolorations. Open skin problems may be a direct result of an accidental cut, or arise indirectly through the laceration, scratching or peeling of previously closed-surface phenomena. As is shown by Table 7, sensation, contagion, secretions, and size are all features which are used in diagnosing different types of skin lesions. By asking questions similar to those listed on the left, the colonists make distinctions between one type of skin problem and another.

Treating a skin problem then depends on the size and nature of the leision. Closed forms seem to receive a topical ointment designed to relieve certain symptoms such as itching. In this type of skin problem, it is believed that the body is actively trying to throw off some toxin, such as insect venom, and offending food, or impurities. This, of course, means that the blood is considered to be hot, and thus the rashes and abscesses also seem to be categorized as such. Itchy rashes are treated with cooling creams or herbal unguents. One example of such treatment would be the use of a penicillin ointment on a baby's simple heat rash, or the use of a hand cream on a case of *larvae migrans.* By folk definition, all creams have this cooling property, regardless of whether it is an antibiotic or cosmetic cream. Therefore, all are proper to use, as well as the cooling juices of mint, or other herbs.

Abscesses, on the other hand, are believed to be an accumulation of the impurities pushing out of the blood. The most frequent topical treatment was designed to "call" these impurities out of the body by astringent action, as in a poultice of cotton leaves. If these closed infections become opened by an external action, as in scratching an

Table 7 - Diagnosing and naming skin ailments

Diagnostic Question																		
Is the skin surface open or closed?	Open Surface							Closed Surface										
Does the ailment have any sensation?	Hurt/Irritation						Nome	Itch (*coceiras*)						Soreness		None (*panos*)		
Is it selt-contained or non-spreading?	Yes						No	Yes	No					Yes	No	No		
Is it contagious to others?	No						Yes	No	Yes		No					Yes	No	
Does it have blisters or secretions?								"picadas" (insect bites)	Yes	No	Yes		No	"queimaduras" (burns)	"tumor" (abscess)	"pano branco"	"pano vermelhos"	"pano preto (rare)"
Does is have a magical cause?											Yes	No	rashes/welts					
What is the size of the opening?	Small (*pereba*)				Large (*ferida*)		Large & spreading (*ferida brava*)		"sarna"	"empinge"	"cobreiro"	"bolinhas"						
Possible origins	open blisters	open rashes	bleeding bites	small wounds	large "perebas"	open abscesses	large wounds	"leshe"										

insect bite, or lancing an abscess, they then are recategorized into an "open" classification. Conceptually, they have become another type of skin problem altogether. The name of each open type lesion depends mainly on its size, although other symptoms such as infectiousness, pain, the tendency to spread, and the definition of its borders, all play a part in the diagnosis. Most of the latter symptoms, however, tend to apply to one of the three sizes of wounds, *perebas, feridas,* and *feridas bravas.*

Perebas refer to wounds up to one-half inch in length or circumference which have little weeping, and tend to form scabs easily. *Feridas* include those wounds up to about an inch in size, but which form scabs less easily than perebas, and are prone to inflammation, pus, and weeping[62]. *Feridas bravas* is the ultimate stage, and includes wounds larger than one inch to any full-blown ulcer. These last wounds seem impossible to heal. If the wound lacks any sensation, becomes increasingly broad and deep, and has no sharply definable edges, ferida brava becomes a euphemism for *leshe,* a contracted form of leishmaniosis.

When the first break in the skin's surface appears, there seems to be little worry about the internal impurities of the blood. It is simply assumed that they will escape through this opening. Rather the immediate concern seems to be to "cauterize" this open lesion with burning iodine, mercurochrome, or cotton leaf poultices, which are extremely irritating to open skin. Most colonists preferred to use the pharmaceutical products if available. These antiseptics comprise the most frequently used items at the health post. Every afternoon the nurse's aid busily reapplied these antiseptics and gauze dressings to the epidemic number of cases that appeared. It is believed, however, that a bandage is clean as long as there is no visible foreign dirt, and that an

[62] A dermatologist consultant for the Pan American Health Organization diagnosed some of the local perebas and feridas as forms of streptococcal pioderma, such as impetigo and ectzyma. These were often weeping or pus filled lesions around the head and face of small children. The ectzyma lesions could get to be quite large. The abscesses were caused by staphylococcus infections under the skin. Other streptococcal infections were believed to be causing open lesions as well. Small eye gnats (genus *Hippolytus)* may transmit the streptococci to other cuts and abrasions. These larger wounds were often mistaken for true leishmaniosis, even by pharmacists and physicians.

antiseptic remains effective as long as the characteristic stains persist[63].

As in the other health problems, the colonists felt that the skin lesions are very likely to turn into larger and more serious forms. At each stage of the open wound, it is reclassified and referred to by another term. The sequence of terms follows step by step, for instance, there was no skipping from a pereba form to a ferida brava form. However, the colonists believed that this progression from bad to worse can be stopped at any one of the stages.

This is contingent upon the proper topical care of smaller wounds, namely, the liberal application of antiseptics, hydrogen peroxide, and powders which dry up weeping wounds. The success of the topical treatment will depend, in turn, on the healthy status of the blood. The surface treatment is supposed to keep external impurities from entering the bloodstream through the wound; the second precludes the internal build up of such impurities. If either of these precautions fail, the blood will again respond by becoming contaminated and building up extra heat. These will be pushed through the open lesion in the form of redness, swelling, and pus. This sequence may actually be provoked by the use of the above medications: hydrogen peroxide, strong solutions of antiseptics, and especially the absorbent powders tend to irritate the skin and kill off the live cells lining the wound, which allows for even further bacterial invasion (PAHO, personal communication).

When the small perebas have turned into long lasting infected feridas, the patient often deems it necessary to take something to help his blood. Such herbal purifiers may include *batata de purga, caruá* (species unknown), or even *mastruz (Chenopodium anthelminthicum),* to help clean and cool the blood. More modern "blood purifiers" which have been thus classified include use of vitamin shots and antibiotics injections. Vitamin C shots are the most preferred for this purpose, and vitamin C does help in the defensive mechanisms against infection. Vitamin A and C deficiencies reduce the capacity of the white blood cells to consume and destroy bacteria (Silva & Baptist 1969:96). The

[63] Brazilian Indians utilized *jenipapo* (*Genipa americana* Linn.), and *urucu* (*Bixa orellana*) as protection against insect bites and as ointments for skin lesions. These produce the same purple and red stains as modern Gentian violet and mercurochrome (Salles 1971:19 and Santos Filho 1966:18)

colonists are also careful in cases of more serious wounds to avoid further heating and contamination of the blood, by eliminating very "hot" foods from their diet. Queiroz (1984) finds southern Brazilians classify antibiotics as "hot", and both antibiotics and vitamins are commonly self-prescribed remedies (Haak 1989). Vila Roxa residents are no exception to that practice, but at the time of the study, the colonists did not classify antibiotics as hot or cold, while vitamines were conceptualized as "cooling" to the blood.

As attention is focused on curing the visible symptoms of skin problems, many colonists often try to treat a lesion topically for one to two months, before seeking other cures. The blood purifying approach is only used later when smaller wounds fail to respond to topical treatment. Such cleansing actions may be avoided initially, as they are believed to temporarily worsen the outside symptoms when the blood's impurities are dumped on the skin. Vitamin shots or antibiotics were postponed as they were expensive, or the health post was in short supply.

Since the skin problems discussed here are extremely common, and generally do not interfere with daily responsibilities, they are not considered serious until quite late in their development. Only when they become persistent and unsightly do colonists worry that there "might be something wrong internally." Many are ashamed of the large ulcerated wounds, as these are conceptually linked with a history of syphilis, or other forms of "dirty" blood (Queiroz, 1984). The stigma of syphilis was frequently mentioned by the colonists, especially in reference to large abscesses and the wounds that later resulted. Many families who had avoided such problems clearly prided themselves as having "clean" blood. Interestingly enough, it was always assumed that fathers were the carriers of syphilis, and once "in the family," would constantly produce skin afflictions in the children and even grandchildren. In addition, female children were said to suffer for "the past of the father" more than male children. Those who did suffer from abscesses and large ugly wounds often found some other explanation, such as poor diet or change of climate for their problem. As Freyre (1967:70-72) points out, syphilis has long been a problem in Brazil.

The Role of Food in Health and Disease:

One common aspect in treating all these illnesses is the avoidance of certain foods. Therapeutically, this is the most common recognition of the blood's role in illness. As was mentioned above, other blood purifying techniques are generally postponed until the problem becomes disabling. Food, on the other hand, can be used to sustain the patient while helping to cure his illness. In folk terms, the foods that are chosen for sick people are "..light, easy to digest, simple but fortifying" (Appendix 2).[64]

Such foods tend to temper the overheated state of the infirm body. From the previous examples we have seen that most illnesses are categorized as hot, due to the fever and other symptoms that arise from weak or contaminated blood. As a corollary, the colonists believe that such heat, especially in the form of fever, weakens the digestive system, and common symptoms as nausea and diarrhea that follow fevers are indicated as evidence. Therefore, foods used in illness must not only help to bring the body temperature back into balance, they must also avoid taxing the weakened digestive system. While they cool and sustain the patient, these foods do not tend to satisfy hunger for very long, but then, illness often takes away a normal appetite.

Foods which are used during illness are not prepared in special "sickroom" forms. Rather, they conform to the same patterns that rural Brazilians recognize as light, snacking or "non-meal" fare. Conceptually, however, this is sufficient distinction to make the patient feel different from healthy people who can eat normal meals. Some of these non-meal foods are also used for feeding infants and small children[65].

As indicated in Appendix 2, the foods acceptable for the sick ideally are light in color and bland in flavor. Those foods which are "light in color" have outer skins or prepared forms which are relatively lighter than other similar products. One example might be the relatively lighter meat of chicken versus domestic duck. Some items are specifically avoided or singled out because of color, such as "black chickens" and black beans. Others are eliminated because of "redness" such as red

[64] These types of food are used at times whenever the body condition is considered to be "hot," and therefore weakens the stomach, such as arising from a warm bed, or strenuous activity.

beans or red colored bananas (São Tomé variety). Sometimes even game animals such as *paca (Caniculus paca)* and *cutia (Dasyprocta* spp.) which have delicate, light colored meats, are divided into edible and inedible forms by the use of color terms Madsen (1955:126) illustrates that colors such as black and red tend to be avoided in other areas of Latin America.

"Blandness" is also a subjective quality and refers to the relative tastiness of one food vis-a-vis another which is prohibited. The colonists themselves do not speak of blandness as a desirable quality, rather this characteristic has emerged through their avoidance of very flavorful, gamey or acid tasting foods. For instance, while preferred forms such as pears and apples may be tasty, they are not as strikingly flavorful as the deep-colored tropical fruits, which are avoided. In fact, dark coloring was often associated with stronger, or more distinct flavors. Sweet or non-acid fruits and vegetables, and milk products also tended to follow this rule. Similar criteria for avoided food have been cited by Queiroz (1984) and Maués and Maués (1977).

On the Transamazon Highway, transportation costs raise the price of most items imported from the south. Costly temperate zone fruits and vegetables, however have become preferred illness foods. A preference for expensive industrialized goods matches the colonists' idea that somehow these foods must be better and safer than commonly available foods[66]. Processed goods indicates an item has a marketable value, and is regularly sold at the Altamira market, and not normally produced by the agrovila families. This is usually correlated with whether or not an item is highly esteemed by the colonists.

A majority of the allowed fruits and vegetables are of European origin. Vegetables, especially of the cabbage family, were considered low prestige foods in medieval Portugal, and vegetables today play a very

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[65] A dichotomy is set up between foods that are suitable for a sustaining and satisfying "meal," as in the midday meal, and foods which are less filling for "non-meals," such as breakfast, mid-morning and mid-afternoon breaks, and supper. The foods used at non-meals are nearly the same as the ones used during illness, and serve the same purpose of cooling an overheated body whose stomach has been weakened.

[66] This same inference as to the relative values of foods and their consequent use or non-use during illness has been noted by Carstairs in India (1955:130) and Gonzalez in Guatemala (1969:220).

small role in therapeutic diets in rural Brazil (Oliveira Marques 1971:21-22). Like some of the medicinal herbs, perhaps these foodstuffs were eliminated from the conceptually acceptable foods used for illness by categorizing them as excessively "hot" or "cold." The term "reimoso", from "reima", meaning bad-humor, has come to be applied to those foods whose extreme hot/cold nature bars their use during illness or vulnerable life stages (Maués & Maués 1977).

Animals that are utilized in times of illness or weakened state ideally should be of domestic origin and bear no similarities in taste, or in appearance, to wild game sources. Even domestic meats are preferred from animals which are sexually non-functional, primarily chicken and young beef, usually from castrated or immature males (Maués & Maués 1977). Young kid is sometimes allowed, while pork, on the other hand, is fatty and comparatively more flavorful like game meats and is usually avoided. Common breeds of domestic pigs are often hairy and resemble the wild peccary. Certain game meats are used by colonists born in Pará, reportedly, because the game animals' physical appearance is small and smooth-coated, and their meat white and milder than other game, thus making them acceptable for patient use.

Other criteria are also important in deciding the acceptability of a food during illness. Leanness in meats avoids strong flavored, hard to digest fat, which may be difficult to ingest during illness. Other foods are avoided because they have strange physical characteristics. Most often this includes having a milky or slimy secretion, or a rough surface. The latter may include such a variety of forms as ruffled feathered chickens, spiny *maxixe (Cucumis anguria),* hairy okra, or armored turtles and armadillos. Traditional Amazonians also avoid fruit or animal sources whose coloration is outside the norm for that species or variety (Maués & Maués 1977).

In addition, foods which are forbidden during illness represent the extremes of the hot-cold continuum. Generally these include foods which grow wild, or are commonly available. They represent at times darker, or less processed forms than their expensive and acceptable equivalents. One example might be brown sugar, which is avoided, versus white granulated sugar which is not. Forbidden foods which are extremely "hot" include game meats, pork, and "rotten" vegetables, like members of the cabbage family. These vegetables are referred to as

"rotten" as they produce a strong odor when cooking. "Rottenness," as seen in the case of stagnant water, is considered to be very "hot".

Fresh fish, shellfish, acid fruits, sour milk products, forest fruits, and sour tasting vegetables are all classified as excessively cold. By extension, a third group includes fruits and vegetables which produce the milky or slimy secretions. One might deduce their classification as "cold" as most fruits and vegetables are cold. The secretions are also linked to raw milk by the colonists, which is classified as cold as well.

The hot-cold gradient is not only a continuum of relative "hotness" and "coldness," it can be interpreted in different ways by different colonists, depending on the origin of the patient, and the illness involved. As we have already seen, *paraenses*, who do a great deal of hunting, allow certain types of game to be used during illness. Other colonists regard all game meats as too "hot" and dangerous. In the case of fruits, colonists who once lived in urban areas ate the small *banana maçã (Musa* spp.) and papaya because it was sold in the market. To other colonists these are common, or nearly wild fruits that are considered too "cold" to use.

The use of such foods also vary with the amount of fever involved in an illness. Condensed milk, which has been "cooked" has been rendered "hot" and is fine for children who must "push out" a fever, but too hot for a post partum mother. Contrarily, *paraenses* consider the additional heat rendered by smoking a food to prohibit its use by new mothers, whereas salting a dangerous meat may make it useable by the patient (Maués & Maués 1977:134-48). Thus food preparation, according to more rural informants, may alter the basic nature of some foods.

At times colonists had difficulties labeling a food item as hot or cold. In these cases, classification was attempted by noting the use or non-use of such foods, or their particular characteristics, as reported by Currier (1969:258) in his Mexican study, and by Goodenough (1964:188) in the study of other ethnosemantic categories.

Clark (1968:67) proposes that the folk food use in illness is often geared to avoid deficiencies. It may be useful to examine the therapeutic value of such food practices. This is a reasonable question, as many of the same food items are used or avoided throughout the world

Table 8 - the hot-cold gradient as seen in foods

	Unacceptable Foods During Illness	Occasionally Acceptable	Acceptable Foods During Illness
Very Hot	*Anta* (tapir) *Jabutí* (land turtle) *Guariba* (howler monkey) *Porco do mato* (peccary) *Paca vermelha* (paca) *Cutia vermelha* (cutia) *Tatu* (armadillo) Duck Turkey *Galinha preta* (black chicken) *Galinha de Angola* (guinea hen) *Veado* (deer)		
Hot	Uncastrated Mature steer (beef) *Dourado* (oily fish) Sardines (oil pack, dried) Black Beans Domestic Pork Roasted ears of corn Couve (cabbage family) Cabbage Eggs[1]	*Paca branca* (paca) *Cutia branca* (cutia) *Veado* (deer) Domestic pork *Dourado* (fish) *Farinha puba* Brazil nuts Condensed milk	Castrated / immature beef *Maisena* (cornstarch) Fresh corn products Butter Coffee Condensed milk Garlic Kid Red beans Powdered milk

[1]Classification uncertain

Table 8 Continued

	Unacceptable Foods During Illness	Occasionally Acceptable	Acceptable Foods During Illness
Temperate			Boiled fresh milk Young / immature chicken Broths, soups Cheese *Farinha branca* "Mulato" beans White beans "Jaula" beans Onion *Traira* (fish) Bacalhau (dried cod)
Cool	*Batata* doce (Sweet potato) *Papaya* Bananas (*São Tome, comprida, peruá*) *Nhame* *Taioba* (taro) *Favas* (fava beans) Raw milk "Milk pumpkin" Okra *Chuchu* (chayote)	Pescada (fish, usually dried) *Batata doce* (sweet potato) *Laranja* (orange) Papaya Banana *maça* (small)	Rice Breads, cakes Macaroni, noodles Crackers *Batatinha* (irish potato) Sweet manioc tubers Apples Pears Carrots Green pepper *Mingaus* (paps/pudding) Lettuce "Caboclo" pumpkin Domestic tomatoes

Table 8 Continued

	Unacceptable Foods During Illness	Occasionally Acceptable	Acceptable Foods During Illness
Cold	Other fish Shell fish Crab Shrimp Pineapple *Coalhada* (yogurt) Vinegar Lemons *Jilo (Solanum gilo)* *Maxixe* Cucumber Mango Wild fruits Wild tomatoes Guava Watermelon Jack fruit		

(Swarmenathan 1968:85-123). Following the accepted diet, one's protein needs would be satisfied by light colored beans, domestic meats, and powdered milk. Most essential in the healing process are the sulphur-containing amino acids, such as methionine (Jelliffe 1968:194). These are present, along with B vitamins in several legumes (Silva & Baptist 1969:54). The meats and fish which are avoided are often fatty and therefore difficult to digest during periods of intestinal upset or liver malfunction. Williams and others have pointed out that high fat/low protein diets slow the healing process, whereas high protein/low fat diets help maintain one's resistance to infection (Williams 1973:581-582 and Keller & Kraut 1959:80-83). The accepted food list includes many refined and low bulk forms of carbohydrates, such as breads, pastas, cooked roots, manioc flour, and package starches. The body under stress, especially in the case of fever, needs a ready supply of calories during its stepped-up metabolism (Williams 1973:581).

Carbohydrates and sugars are also easy for the system to digest. The use of foods such as temperate fruits and vegetables may be explained as an extension of items used in a baby's diet. Highly processed, non-fat foods also cause less irritation to the gastric system. It might be hypothesized that because bland, non-acid fruits and vegetables are easily accepted by "delicate" infants, that Brazilians deem them safe for the sick[67]. In fact, if the full range of acceptable foods were eaten, sufficient vitamins, minerals and protein would be available. The problem which plagues the colonists, and other rural people of Brazil is that the acceptable items are often too costly to be used[68].

THE FUTURE OF FOLK CURING IN VILA ROXA

Facing the possibility of illness in a strange environment, away from family and friends, was one of the major psychological hurdles to cross before colonists moved to the Amazon. The decision perhaps was facilitated by the announcement that the Public Health Service would

[67] Few studies have been done on the therapeutic or harmful effects of various foods during stress. Even the food tolerance of infants is more varied than once believed (Williams 1973:394).

[68] Foster (1958:11) has noted that there is a general decline in nutritional status as people shift from complete subsistence agriculture to a cash income, due to the increased substitution of refined, prestige items in the diet.

have services waiting for them. Not only was the hospital offered as reassurance, but each agrovila was promised weekly visits by a doctor (Moran 1981:79).

This was much more than most people of Vila Roxa had ever had access to previously. Many openly admitted that their herbal cures were used "por necessidade." There were few doctors in many of the rural areas from which they had come (Tables 9 and 10), and cost was often as equally imposing a barrier as distance in consulting a physician. Ex-sharecropper colonists verified Margolis' observations that physicians would refuse to administer to plantation workers unless the land owner vouched for a patient's expenses. On the other hand, the owner might be unwilling to assume the debt for hired laborers, and the worker went untreated (Margolis 1973:114). "People use what they have when there is no doctor," one woman explained, "..the plants became our remedies." Weekly access to free professional care seemed an impossible dream.

Use of Physician Care:

The colonists prefer to have a doctor's care if they are at all concerned about a health problem. They respect the letter's greater education and status[69]. Given the educational gap, and great social class distinction between colonist and physician, the colonist behaves very deferentially in the doctor's presence, is reluctant to ask too many questions, or to speak when not spoken to.

The doctor, in fact, tends to be the last person the colonists consult during the progress of an illness. They have already consulted those with whom they are most familiar: their neighbors, the local folk specialist, and perhaps the pharmacist near the market place.

As Siegel (1958:474-475) points out in a study of public and private physicians, the Public Health doctors rarely live in the community in which they practice. Their influence on health matters stems from the formal institution which they represent, rather than individual contact or community leadership. Colonists initially felt obliged to use the Public

[69] This would seem to contradict Foster's (1958:24) idea that a social class gulf between patient and practitioner tends to promote lack of respect and mutual suspicion.

Table 9 - Number of Physicians per Region, Brazil 1966

Region	Number of Doctors	Doctors per 10,000 inhabitants of region	Doctors per 10,000 inhabitants of capital cities
North	905	2.9	8.2
Northeast	6,041	2.41	10.6
South/Southeast	31,924	10.96	28.5
Central-West	1,595	3.96	14.7
Total	40,465	4.82	13.8

From: Lacaz, Baruzzi and Siqueira, 1972:144-151.

Table 10 - Number of Hospital Accomodations, Brazil 1966

Region	Total Number Hospital Beds	Beds per 10,000 inhabitants	Public Hospital Accommodations	% of Total Accommodations
North	8,518	2.76	5,778	67.8
Northeast	38,798	1.54	819,520	50.3
South/Southeast	233,201	8.87	81,619	62.3
Central-West	9,763	2.56	3,513	36.0
Total	290,280	3.57	110,425	38.3

From: Lacaz, Baruzzi and Siqueira 1972:144-151.

Health facilities for fear of recrimination from the colonization authorities. This fear also led to uncertainty about how the public health doctor would react to "non-official" curing practices. If the doctor did not ask about previous attempts to cure the problem, the patient rarely volunteered the information. He was afraid of being chastized for using the "wrong" treatments which, obviously, had not worked.

Dealing with a Public Health doctor also presents other problems. As a handful of doctors are responsible for the needs of some three thousand colonists, and the population of Altamira, they have little time to spend on any individual case. Lines often formed outside the hospital's outpatient clinic. A doctor visiting in the agrovilas may have only an hour or two to spend at each stop. While the services are free, a colonist might lose a day of work waiting to see the doctor, only to return the next day after failing to be attended.

The hurried nature of the appointments is also unfamiliar to the colonist who is accustomed to the personalistic care of a folk or pharmacy practitioner. For instance, he expects the doctor to listen to his heart, and is appalled when the latter "forgets" to do so. Folk curers have the advantage of living near the patient, and often know him personally. They already know more or less what has been ailing him and take great pains to explain why the patient is ill, and how certain cures will help. The treatment is given immediately[70]. The doctors, on the other hand, must first ask how the patient is feeling. Secondly, the medical practitioner, unlike their folk counterparts, do not feel obliged to tell how they arrived at a diagnosis, nor how the medicine prescribed is going to effect a cure. The patient often goes away unsure of what his ailment is "called," or how the doctor thinks it developed.

How this severing of communication comes about is not entirely clear. Certainly the lack of time is involved. The patient may be reluctant to talk about his case history, and the doctor may have little time to ask. The social distance between doctor and patient also limits the flow of questions and answers. More importantly, several doctors voiced the opinion that the rural patient will not understand the explanation of his disease, and assume whatever health concepts are held to be the

[70] The advantages of a similar folk curer has similarly been described by Clark (1959:204-208).

products of superstition and ignorance. This attitude is clearly perceived by the colonists, and many return feeling "blamed" for their own ill health.

Use of Prescription Medications

The colonists were often misinformed about who should supply needed medicines. As several volunteer and special interest groups run clinics and pass out free sample medications, the people of Vila Roxa assume that the Public Health Service should do the same. During the period that the agrovila had a dispensary, the costs of medications were written off against each colonist's INCRA credit. No exchange of cash took place, which led many to believe the medications were free.

Now when they receive a prescription that must be filled at their own expense, they really begin to feel the doctor's care is a total waste. Not only do they not get an explanation for their ills, they get no relief for the symptoms. The low cash income of many colonists makes it impossible at times to fill the prescriptions when they are needed. Collections of such prescriptions are made, and put away until the money is available to pay for them. By the time they are filled, the patient has forgotten the dosage instructions, and the medication is no longer adequate for the complications that have since developed.

Since the colonists expect a pharmaceutical product prescribed by a doctor to be much more effective than simple herbs, they await miraculous changes in their condition. Such high expectations of pharmaceutical products has been recently decribed by Lefevre (1987:66). When such changes fail to appear, or do not meet expectations, a patient may abandon the medication as useless, and resolve never to consult the Public Health doctor again. Some then resort to private physicians. As the colonists put it, "when one is paying, the doctor must pay more attention to you." However, the same problems tend to occur, especially in the area of prescription drugs. Several colonists in Vila Roxa have lost confidence in medical personnel in general.

The Folk and Professional Curing Systems

Vila Roxa residents are certainly open to modern explanations and techniques. They listen eagerly to learn about contraceptives and other

birth control devices, and the nutritional values of everyday foods. They are willing to accept an injection over an herbal tea. Initially, they seem to have been much more receptive to physicians than other rural groups which have been studied. Younger colonists were willing to question traditional food taboos, and other health practices. Even elders ask the doctors' opinion about the value of such habits.

However, the colonists also value the attention, the easily understood explanations, and above all, the low cost treatments of folk curing. Because professional treatment has usually been postponed until an illness has interfered with a patient's work, costly medications are required to cure his problem. The cure may take a very long time to relieve the symptoms. The doctor's prescription may not seem any more effective than the old-fashioned herbal cures. The patient may even question the doctor's good judgement, because the prescription was given without any apparent "reason" or explanation.

Whereas the colonists had once used home remedies because a "real" doctor was not available, they continue such practices because the doctors are believed to be ineffective. The cost in terms of time, transportation, medications, and even private consultations, has become too great in comparison to the lack of expected visible results. The return to herbs and inexpensive pharmacy products is basically an economic adaptation in the rual frontier. The credit and initial salaries given by the colonization authorities has been withdrawn in many cases. Several colonists in Vila Roxa simply do not have the cash available for modern treatments. The fact that economic hardship has gone hand in hand with a return to traditional cures is recognized by the colonists themselves. One woman mused, "Yes, I guess you could say I have become a real *chazeira* (herbal tea user) since I have come to this area. I certainly never used as many teas before!" In a 1986 study, Bahia families expended one-third to one full day's salary per week for purchased medications (Haak 1989). The problem is certainly not limited to the frontier or rual areas of Brazil. Others have described the difficult choices Brazilian urban workers face when illness threatens (Marín, 1979).

At the time of this study nearly two-thirds of the families in Vila Roxa had started herb gardens and, by their account, the use of home remedies was becoming more frequent. This is in contrast to later studies

of established settlements in southern Bahia for example, where only 29% of those interviewed relied wholly or in part on home remedies (Haak 1989:150). Some were writing to their home states to have relatives send seeds and cuttings of familiar herbs. Traditional *parteiras* or midwives were being sought out by women who refused to return to the hospital and wished to have their babies at home. Nearly all the women interviewed had learned of at least one new herbal cure from their neighbors. Even the blessers were performing magico-religious cures for infants whose parents had never believed in such practices.

Such a reversal to traditional curing may undermine the success of the Public Health program in the Transamazon or other regions experiencing economic instability. Certainly it would be difficult to expect physicians to diagnose and prescribe in the folksy manner of a *curandeira*. On the other hand, nurse's aides, social workers, and trained midwives are available and could help to bridge the information gap[71]. Symptom description, already an integral part of folk curing, could be used to describe the early, if non-debilitating signs, which indicate illness. Improved nutritional practices might be approached through using the traditional beliefs about the relationship between food and blood. Simple folk knowledge of microbes and contagion could be further elaborated to encourage immunization programs, while reducing the exagerated expectations of purchased remedies such as antibiotics, the majority of which are inappropriately self-precribed by the patient. Some suggest pharmaceuticals, as quasi-magical consumer goods, provide a rare bridge to the overwhelming status differences in Brazilian society (Lefevre 1983:503). Resolving the use (or abuse) of these products may ultimately require addressing broader social and service inequalities. Meanwhile, in recognition of the subsistence basis of many family budgets, effective home curing practices might be studied and encouraged[72].

Conclusions

In summary, the crystallization of Brazilian folk medicine has come

[71] This was aptly documented by Simmons (1955:347) in a Chilean public health project, where nurses served as a communication link between lower class patients and upper class doctors.

[72] Nearly one-half of the new prescriptions written in the United States have at least one substance of natural plant origin (Schultes 1972:104). More and more studies are being performed to evaluate what chemical properties are present in traditional cures, such as the study by Ortiz de Montellano (1975:215-220) of plants used by Aztecs. For instance, substances such as tannin help stop the flow of blood. Papain from papayas aids in digestion disorders. The alkaloids and steroids of various purging roots can be equally effective for other ills (Hofman 1972:257 and Krieg 1964:122, 152).

out of the modification and deletion of health practices from several donor cultures. Items which were useful for known diseases were adopted by the dominating Portuguese culture. Others which were unfamiliar and could be replaced by known European counterparts were rejected. Four hundred years later a similar process has been followed by new pioneers. The Transamazonian colonists have chosen not only new herbs for common illnesses, but also unfamiliar modern medical preparations, in their expanding folk system.

In both the historical and the current case, the new items have been selected and categorized according to the Greco-Roman theories which still operate in Brazilian folk medicine. These pre-modern explanations of disease and its treatment have in fact become a part of the world view of rural Brazilians. They dictate dietary patterns and routine activities such as infant care, personal hygiene, and daily chores. As a conceptual system, it is incorporated in the everyday patterns of subsistence and survival. More importantly, it provides a foundation for the sucessful, or unsucessful, use of modern medical services. As Queiroz and Canesqui suggest, cultural and medical understanding of this system are equally necessary if social planners aim to improve services to under-served populations (1985).

Johnson (1971:9) has reminded us that "... not enough attention has been paid to ... how the people being studied think about their environment, and the challenge of surviving in it". It is hoped that this study, and others like it will broaden our knowledge of how rural Brazilians conceive of health and disease, and how such conceptions allow them to adapt to economic and institutional changes.

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BIBLIOGRAPHIC REFERENCES

ACKERKNECHT, E. 1946. Natural Diseases and Rational Treatment in Primitive Medicine, *Bull Hist Med.* 19:457-497.

ADAMS, R. 1953. *Un análisis de las creéncias y prácticas médicas en un pueblo indígena de Guatemala.* Guatemala, Instituto Indigenista Nacional.

AGUIRRE BELTRÁN, G. 1963. *Medicina y mágica: el proceso de aculturación en la estructura colonial.* México, D.F., Instituto Nacional Indigenista.

ALLAND, A. 1970. *Adaptation in Cultural Evolution: An Approach to Medical Anthropology.* New York, Columbia University.

ARAÚJO, A.M. 1959. *Medicina Rústica.* São Paulo, Companhia Editora Nacional.

BALBACHAS, A. 1961. *As Plantas Curam.* 12. ed. São Paulo, Missionária.

BENEDICT, R. 1938. "Religion". In: BOAS, F. (ed.) *General Anthropology.* New York, D. C. Heath, p. 627-665.

BLUM, R. & BLUM, E. 1965. *Health and Healing in Rural Greece.* California, Stanford University.

BOAS, F. (ed.) 1938. *General Anthropology.* New York, D. C. Heath.

BOCK, P. 1969. *Modern Cultural Anthropology.* New York, Alfred A. Knopf.

CAMPOS, E.1955. *Medicina Popular.* 2. ed. Rio de Janeiro, Casa do Estudante do Brasil.

CARSTAIRS, G. M. 1955. Medicine and Faith in Rural Rajasthan. In: PAUL, B. (ed.) *Health, Culture and Community.* New York, Russell Sage, p. 107-134.

CARVALHO, A. S. 1928. Medicina: A Literatura Médica até o Fim do Século XVI. In: SAMPAIO, A. F. (ed.), *História da Literatura Portuguesa Ilustrada.* Lisboa, Livraria Bertrand, p 64-78.

CASSEL, J. 1955. A Comprehensive Health Program among South African Zulus. In: PAUL, B. (ed.) *Health, Culture and Community.* New York, Russell Sage, p. 15-41.

CLARK, F. G. 1968. Food Habits as a Practical Nutrition Problem. *Wld Rev. Nutr. Diet.,* Londres, 9:56-84.

CLARK, M. 1959. *Health in the Mexican-American Culture.* Berkeley, University of California.

COLSON, A. & SELBY, K. 1974. Medical Anthropology. *A. Rev. Antrop.*, 3:245-262.

CURRIER, R. 1969. The Hot-Cold Syndrome and Symbolic Balance in Mexican-American Folk Medicine. In: LYNCH, R. L. (ed.) *The Cross-Cultural Approach to Health Behavior.* Wisconsin, Fairleigh Dickinson University, p. 255-274.

ERASMUS, C. 1952. Changing Folk Beliefs: The Relativity of Empirical Knowledge. *Sw. J. Anthrop.* Albuquerque. 8:411-428.

FÁBREGA, H. & SILVER, D. 1973. *Illness and Shamanistic Curing in Zinacantan.* California, Stanford University.

FORTES, M. 1969. *Kinship and the Social Order.* Chicago, Aldine.

FOSTER, G. 1953. Relationships between Spanish and Spanish-American Folk Medicine. *J. Am. Folklore.* 66:201-219.

FOSTER, G. 1958. *Problems in Intercultural Health Programs.* New York, Social Science Research Council.

FOSTER, G. 1960. *Culture and Conquest: America's Spanish Heritage.* New York, Viking Fund.

FOSTER, G. & ROWE, J. 1951. Suggestions of the Field Recording of Information on the Hippocratic Classification of Diseases and Remedies. *Kroeber Anthropol. Soc. Pap.* 5:1-5.

FRAKE, C. 1964. The Diagnosis of Disease among the Subanum of Mindanao. In: HYMES, D. (ed.) *Language in Culture and Society.* New York, Harper & Row, p. 192-211.

FREYRE, G. 1967. *The Masters and the Slaves.* New York, Alfred A. Knopf.

GALDSTON, I. (ed.) 1954. *Beyond the Germ Theory: The Role of Deprivation and Stress in Health and Disease.* New York, Health Education Council.

GALVÃO, E. 1955. *Santos e Visagens;* um estudo da vida religiosa de Itá-Amazonas. São Paulo, Companhia Editora Nacional, 202 p. (Biblioteca Pedagógica Brasileira. Série 5, Brasiliana, 284)

GONZALEZ, N. 1969. Beliefs and Practices Concerning Medicine and Nutrition among Lower Class Urban Guatemalans. In: LYNCH, R. L. (ed.) *The Cross- Cultural Approach to Health Behavior.* Wisconsin, Fairleigh Dickinson University, p.213-227.

GOODENOUGH, W. 1964. Property and Language on Truk: Some Methodological Considerations. In: HYMES, D. (ed.) *Language in Culture and Society.* New York, Haper & Row, p. 185-188.

GRIEVE, M. 1970. *A Modern Herbal.* New York, Dover, 2 v.

GRIFFITH, R. E. 1847. *Medical Botany.* Philadelphia, Lea & Blanchard.

HAAK, H. 1989. Padrões de consumo de medicamentos em dois povoados da Bahia (Brasil) *Rev. Saúde Pública São Paulo.* 23:143-51.

HARRIS, M. 1971. *Town and Country in Brazil.* New York, Norton.

HARWOOD, A. 1971. The Hot and Cold Theory as Used in Puerto Rican Patients. *J. Am. med. Ass.*, Chicago. 216:1153-1158.

HEATH, D. & ADAMS R. N. (eds.) 1965. *Contemporary Cultures and Societies of Latin America.* New York, Random House.

HOFMAN, A. 1972. Ergot: A Rich Source of Pharmacologically Active Substances. In: SWAIN, T. (ed.) *Plants in the Development of Modern Medicine.* Cambridge, Harvard University, p. 235-250.

HOHENTHAL, W. 1959. Classification and Treatment of Venereal Disease by a Brazilian Indian Tribe. *Kroeber Anthropol. Soc. Pap.* 20:89-96.

HOLANDA, S. B. 1957. *Caminhos e Fronteiras.* Rio de Janeiro, J. Olimpio.

HOLANDA, S. B. 1960. *História Geral da Civilização Brasileira.* São Paulo, DIFEL, v. 2.

HYMES, D. (ed.) 1964. *Languagein in Culture and Society.* New York, Harper & Row.

IBAÑEZ-NOVIÓN, M. A.; IBAÑEZ-NOVIÓN, O. C. & SERRA, O. S. 1977. O anatomista popular: um estudo de um caso. *Anu. Antropol.*, 77:87-119.

INCRA. 1972. *Altamira I.* Brasília, Ministério da Agricultura.

JELLIFFE, D. B. 1968. *Infant Nutrition in the Tropics and Subtropics.* 2 ed. Geneva, World Health Organization.

JELLIFFE, D. B. 1969a. Social Culture and Nutrition: Cultural Blocks to Protein Malnutrition in Early Childhood in Rural West Bengal. In: LYNCH, R. L. (ed.) *The Cross-Cultural Approach to Health Behavior.* Wisconsin, Fairleigh Dickinson University, p. 297-309.

JELLIFFE, D. B. 1969b. *Child Nutrition in Developing Countries.* Washington, D. C: Government Printing Office.

JOHNSON, A. 1971. *Sharecroppers of the Sertão.* Stanford, Stanford University.

KELLER, W. D. & KRAUT, H. A. 1959. Work and Nutrition. *Wld. Rev. Nutr. Diet.* London, 3:65-83.

KENNY, M. 1963. Social Values and Health in Spain. *Hum. Org., New York.* 21:280-285.

KIEV, A. 1968. *Curanderismo: Mexican-American Folk Psychiatry.* New York, The Free Press.

KLEINPENNING, J. M. G. 1975. *The Integration and Colonization of the Brazilian Portion of the Amazon Basin.* Nijmegen, Institute of Geography and Planning.

KREIG, M. 1964. *Green Medicine: A Search for Plants that Heal.* New York, Rand McNally.

LACAZ, C.; BARUZZI, R. & SIQUEIRA, W. 1972. *Introdução à Geografia Médica do Brasil.* São Paulo, Edgard Blucher.

LEFEVRE, R. 1983. A função simbólica dos medicamentos. *Rev. Saúde Pública São Paulo.* 17:500-503.

LEFEVRE, R. 1987. A oferta e a procura de saúde imediata através do medicamento: proposta de um campo de pesquisa. *Rev. Saúde Pública São Paulo.* 21:64-67.

LESSA, W. & VOGHT, E. (eds.) 1972. *Reader in Comparative Religion.* New York, Harper & Row.

LEWIS, O. 1951. *Life in a Mexican Village: Tepoztlan Restudied. Illinois, University of Illinois.*

LOGAN, M. 1973. Humoral Medicine in Guatemala and Peasant Acceptance of Modern Medicine. Hum. Org. New York. 32:385-395.

LOYOLA, M. 1987 Medicina popular: Reza e Curas de Corpo e Alma. *Ciência Hoje* 6:34-43.

LYNCH, R. L. (ed.) 1969. *The Cross-Cultural Approach to Health Behavior.* Wisconsin, Fairleih Dickinson University.

MADSEN, W. 1955. Hot and Cold in the Universe of San Francisco Tecospa, Valley of Mexico. *J. Am. Folklore.* 68:123-139.

MALINOWSKI, B. 1935. *Coral Gardens and their Magic.* London, Allen & Unwin.

MARGOLIS, M. 1973. *The Moving Frontier.* Gainesville, University of Florida.

MARIN, M. C. M. 1979. Alternativas de Trabalho e Estratégias de Consumo de Operários numa Grande Cidade Regional. In: LOPES, J. S. et al (eds.) *Mudança Social no Nordeste.* Rio de Janeiro, Paz e Terra.

MARTIUS, VON, K. F. P. 1939 *Natureza, doença, medicina, e remédios dos índios brasileiros.* (1944) São Paulo; Companhia Editora Nacional, 286p. (Biblioteca Pedagógica Brasileira. Série 5. Brasiliana, 154).

MATA, M. E.; CARVALHO, W. R. & CASTRO E SILVA, M. T. 1973. *Migrações Internas no Brasil: aspectos econômicos e demográficos.* Rio de Janeiro, IPEAE/INPES. (Relatório de Pesquisas).

MAUÉS, R. H. & MAUÉS, M.A.M. 1977. O Modelo da Reima: Representações Alimentares em uma Comunidade Amazônica. *Anu. Antropol.* 77:120-47.

MIDDLETON, J. 1972. The Cult of the Dead: Ancestors and Ghosts. In: LESSA, W. & VOGT, E. (eds.) *Reader in Comparative Religion.* New York, Harper & Row, p. 487-492.

MORAN, E. 1975. *Pioneer farmers of the Transamazon highway: adaptation and agricultural production in the lowland tropics.* Universikty of Florida. Tese de doutorado.

MORAN, E. 1981. *Developing the Amazon.* Bloomington, Indiana University, p. 77-96; 158-212.

MOREIRA, F. 1971. *As Plantas que Curam.* São Paulo, HEMUS.

NURGE, E. 1958. Etiology of Illness in Guinhangdan. *Am. Anthrop.,* 60:1158-1172.

OBERG, K. & RIOS, J. A. 1955. A Community Improvement Project in Brazil. In: PAUL, B. (ed.) *Health, Culture and Community.* New York, Russell Sage, p. 349-376.

OLIVEIRA MARQUES, A. H. 1971. *Daily Life in Portugal in the Late Middle Ages.* Wisconsin, University of Wisconsin.

OPLER, M. 1963. The Cultural Definitions of Illness in Village India. *Hum. Org.,* New York. 22:32-35.

ORTIZ DE MONTELLANO, B. 1975. Empirical Aztec Medicine. *Science.* 188:215-220.

PAUL, B. (ed.) 1955. *Health, Culture and Community.* New York, Russell Sage.

PIERSON, D. 1954. Sickness and Its Cures in a Brazilian Rural Community. *CONGRESSO INTERNACIONAL DE AMERICANISTAS,* 31. Anais: 281-291, São Paulo. Ed. Anhembi.

QUEIROZ, M. 1984. Hot and Cold Classification in Traditional Iguape Medicine. *Ethnology.* 23:63-72.

QUEIROZ, M. & CANESQUI, A. M. 1985. Contribuições da Antropologia e Medicina: uma revisão de estudos no Brasil. *Rev. Saúde Pública São Paulo.* 20:141-51.

REDFIELD, R. 1950. *The Folk Culture of Yucatan.* Chicago, University of Chicago.

SALLES, P. 1971. *História da Medicina no Brasil.* Belo Horizonte, G. Holman.

SAMPAIO, A. F. (ed.) 1928. *História da Literatura Portuguesa Illustrada.* Lisboa, Bertrand, v. 3.

SANTOS FILHO, L. 1966. *Pequena História da Medicina Brasileira.* São Paulo, São Paulo Editora.

SAUNDERS, L. 1954. *Cultural Differences and Medical Care: The Case of the Spanish-Speaking People of the Southwest.* New York, Russell Sage.

SCHULTES, R. 1972. The Future of Plants as Sources of New Biodynamic Compounds. In: SWAIN. T. (ed.) *Plants in the Development of Modern Medicine.* Cambridge, Harvard University, p. 103-124.

SESI em ação na Transamazônica. 1974. *Ind. Produt.:* 76-80, jun.

SIEGEL, B. 1958. Social Structure and the Medical Practitioner in Rural Brazil and Portugal. *Sociologia.* 20:463-476.

SILVA, C. & BAPTIST, N. G. 1969. *Tropical nutritional disorders of infants and children.* Illinois. Charles C. Thomas.

SIMMONS, O. 1955. Popular and Modern Medicine in Mestizo Communities of Coastal Peru and Chile. *J. Am. Folklore.* 68:57-71.

SMITH, C. K. 1957. Disease Concepts and Plant Medicines in Latin America. *Kroeber Anthropol Soc. Pap.* 16:82-83.

SMITH, N. 1976. *Transamazon Highway: A Cultural-Ecological Analysis of Settlements in the Lowland Tropics.* Berkeley. University of California. Department of Geography. Tese de doutorado.

SWAIN, T. (ed.) 1972. *Plants in the Development of Modern Medicine.* Cambridge, Harvard University.

SWAMENATHAN, M. 1968. The Nutrition and Feeding of Infants and Pre-School Children. *Wld. Rev. Nutr. Diet., London,* 9:85-123.

TAMBS, L. 1974. Geopolitics of the Amazon. In: WAGLEY, C. (ed.) *Man in the Amazon.* Florida: University of Florida. p. 45-87.

TAYLOR, H. 1922. *Greek Biology and Medicine.* Boston, Marshall Jones.

TEMKIN, O. 1973. *Galenism: Rise and Decline of a Medical Philosophy.* Ithaca, New York: Cornell University Press.

WAGLEY, C. (ed.). 1964. *Amazon Town: A Study of Man in the Tropics.* New York, Alfred A. Knopf.

WAGLEY, C. 1965. Regionalism and Cultural Unity in Brazil. In: HEATH, D. & ADAMS, R. N. (eds.) *Contemporary Cultures and Societies of Latin America.* New York, Random House, p. 124-136.

WAGLEY, C. 1974. *Man in the Amazon.* Florida, University of Florida.

WELLIN, E. 1955. Water Boiling in a Peruvian Town." In: PAUL, B. (ed.) *Health, Culture and Community.* New York, Russell Sage. p. 71-103.

WILLIAMS, S. R. 1973. *Nutrition and Diet Therapy.* 2. ed. St. Louis, C. V. Mosby.

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Appendix 1

Medicinal herbs: their origins and uses

Name	Scientific Name	Origin	Where Available	Use	Classification	Users
Açafrão (saffron)	*Crocus sativus*[5]	Old World[5]	Home	"Clears throat of measles."	Hot	South
Alfavaca (basil)	*Ocimum basilicum*[4]	Old World	Home	"Kidney problems" diuretic, baths for fevers.	?	N. East Central-West
Alfazema (lavender)	*Ambrosia* spp[3]	Old World	Drug-store	Fumigation, tea for infant colic[a], emenogogue[b], abortive.	?	N. East
Algodão (cotton)	*Gossypium arboreum*[3]	New/ Old World[1]	Home	Inflammation, cauterize cuts, heals rashes.	?	South C. West N. East
Alho (garlic)	*Allium sativum*[2]	Old World	Store	Fever of colds.	Hot	N. East
Arruda (rue)[2]	*Ruta graveolens*[4]	Old World[1,2]	Home	Emenogogue, abortive, earache.	Hot	All
Batata de purga (bindweed[2] or jalap)	*Convolvulus operculatus*[4]	New World	Lot	Purgative, blood purifier, emenogogue, congestion, worms, teething.	Cool	N. East
Boa-noite (periwinkle)	*Vinca major*	?	Home	Cough, phlegm, asthma.	Cool	N. East

Appendix 1 Continued

Name	Scientific Name	Origin	Where Available	Use	Classification	Users
Caapeba	*Piper umbellata*[3]	New World	Lot	"Liver ailments."	Cool?	North N. East
Caatinga de mulata	*Leonotis neptaefolia*	New World	Home	Headache	?	North
Cajueiro (cashew bark)	*Anacardium occidentalis*	New World	Lot	Inflammation	Cool?	North
Canela (cinnamon)	*Cinnamomum* spp.	Old World[2]	Drug-store	Emenogogue, calms menstrual symptoms.	Hot/ Cool	South
Caruá or (folha santa)			Home	Cough, heals rashes.	Cool	N. East
Capim santo	*Cybopogon nardus*[3]	?	Home	Root-fevers, uterine inflammation. Leaves-colic tonic, stomach-ache.	Root-Hot Leaves-Cool	All
Cebolinha (green onion)	*Allium cepa*[5]	Old World	Home	Tranquilizer	Cool	C. West
Cena (senna)	*Cassia acutifolia*[2] or *Colutea arborescens*	Old World[2]	Drug-Store	Emenogogue, abortive.	Hot	N. East
Elevante	*Acanthospermum australe*[3]	?	Home	Emenogogue, menstrual ills, fever, inflammation, stomach ache.	Hot-Cool	South

Appendix 1 Continued

Name	Scientific Name	Origin	Where Available	Use	Classification	Users
Erva cidreira (sweet balm)	*Melissa officinalis*[3]	Old World[2]	Home	Indigestion, constipation, diarrhea.	Cool	All
Erva doce (anis)	*Pimpinella anisium*[3]	Old World[1]	Home/ Store	Baby colics, "cleans stomach,"[c] tranquilizer.	Cool	All
Espriteira			Home	Congestion of colds.	?	N. East
Favacão			Home	Purge, emenogogue, abortive.	Hot	South
Fedegoso	*Cassia occidentalis*[4]	Old World[5]	-	Purge for indigestion, emenogogue.	?	N. East
Fumo (tobacco)	*Nicotiana tabacum*	New World	Lot	Rids skin of burrowing larvae/insects.	?	N. East
Gingibre (ginger)	*Zingiber officinalis*[3]	Old World[2]	Home	Hastens birth, relieves birth pains.	Hot	All
Folha de goiaba (guava)	*Psidium guajava*	New World	Home	Diarrhea.	Cool	North South
Hortelã grande (marsh mint)[2]	*Mentha sativa*[2]	Old World[2]	Home	Emenogogue, vermifuge, inflammation.	Hot-Cool	All
Hortelã miudo (green mint)[2]	*Mentha viridis*[3]	Old World	Home	Emenogogue, cools symptoms of period, stomach ailments, baby colic, calmant.	Cool	All

Appendix 1 Continued

Name	Scientific Name	Origin	Where Available	Use	Classi-fication	Users
Jatobá	*Hymencae courbaril*[4]	New World	Lot	Heat rash, congestion.	Cool	North C. West
Jurubeba	*Solanum paniculatum*[4]	New World[1]	Home	Stimulates bile.	?	South
Limão (lime)	*Citrus limonum*[4]	Old World[1]	Home	Rind-fever Juice-tranquilizer.	Rind-hot Juice-Cool	All
Flor de Mamão (papaya flower)	*Carica papaya*[4]	New World[1]	Home	Congestion, stomach ache.	Cool	South
Mamona (castor bean)	*Ricinus communis*[4]	Old World[1]	Home	Purgative, boold purifier for conception, congestion.	Cool	N. East
Mangericão	*Ocimum minimum*[3]	Old World	Home	Earache, colds, nausea.	Cool?	N. East
Mangerona (wild marajoram)	*Origanum marjoranum*[3]	Old World	Home	Pain.	?	North
Maravilha	*Mirabilis* spp.	?	Home	Excessive menstrual flow.	Cool	South
Marcela		?	-	Indigestion, nausea.	Cool	N. East

Appendix 1 Continued

Name	Scientific Name	Origin	Where Available	Use	Classi-fication	Users
Mastruz (wormseed)	*Chenopodium anthelminthicum*[4]	New World[1]	Lot/ Home	Worms, heals cuts.	Cool	All
Mostarda (mustard)	*Sinapis chinensis*[3]	Old World[1]	Home	Emenogogue.	Hot	South
Ortemisa (camomile)	*Anthemis noblis*[4]	Old World[2]	Home	Emenogogue, abortive.	Hot	South
Pega pinto	*Boerhaavia hirsuta?*[4]	?	Lot	Blood purifier.	Cool	N. East
Pião roxo	*Jatropha curcus*[3]	Old World[1]	Home	Pain.	?	N. East/ South
Picão	*Bidens dentata*[3]	Old World[5]	Home	Herbal bath for baby.	Cool	South
Poejo (pennyroyal)[2]	*Mentha pulegium*[4]	Old World[2]	Home	Emenogogue, calms menstrual symptoms, tranquilizer.	Hot/ Cool	South
Proma		?	Home	Stomach ache, liver.	?	North
Quina (quinine tree)	*Quassia amara*[3]	New World[1]	Lot	Malaria fever, abortive.	Hot	North
Rosa branca (rose)	*Rosa alba*	Old World	Home	Stops excessive menstrual flow.	Cool	N. East
Sabougeiro (black elder)	*Sambucus nigrum*[4]	Old World[1]	Home	Fever of measles.	Hot	All

Appendix 2

Forbidden foods

Name	Light Color	Bland	Sweet or Non-acid	No secretions	Domesticated	Smooth Appearance	Lean	Market Goods	Small or Immature	Hot-cold Gradient	Highly Esteemed	European Origin
Wild tomatoes	+	-	-	( )	-	+	( )	-	+	cold?	-	-
Jiló	(-)	-	-	( )	+	+	( )	-	+	cold?	-	-
Malagueta peppers	( )	-	-	( )	+	+	( )	+	+	hot	±	-
Vinegar	+	-	-	( )	( )	( )	( )	+	( )	cold	+	( )
Tacacá sauce[a]	+	-	-	( )	( )	( )	( )	-	( )	?	-	-
Raw milk	+	–	–	( )	( )	( )	( )	-	( )	cold	-	( )
		–	–							extremes		
Banana São Tomé	-	-	+	( )	+	( )	( )	-	-		-	-
Banana *peruá*	+	-	+	( )	+	( )	( )	-	-	cold	±	-
Pineapple	+	+	-	-	+	-	( )	-	-	cold	±	-
Watermelon	-	±	+	-	+	( )	( )	-	-	cold	-	-
Lime	-	-	-	( )	+	+	( )	-	+	cold	±	+
Mango	-	–	–	–	–	+	( )	-	-	?	±	-

Appendix 2 Continued

Name	Forbioden foods											
	Light Color	Bland	Sweet or Non-acid	No secre-tions	Domes-ticated	Smooth Appear-ance	Lean	Market Goods	Small or Im-mature	Hot-cold Gradient	Highly Es-teemed	Euro-pean Origin
Cupuaçu[b]	?	-	-	-	-	-	( )	-	?	cold?	-	-
Açaí[c]	-	-	( )	( )	-	( )	-	-	-	?	-	-
Cajá	-	-	-	( )	-	+	( )	-	( )	cold?	-	-
Guava	-	-	-	( )	±	+	( )	-	+	cold?	±	-
Passion fruit	-	-	-	-	±	( )	( )	-	+	cold?	+	-
Jack fruit		-	( )	-	±	-	( )	-	-	cold?	-	-
	-	-	-	-				-	-			-
Anta[d]	-	-	( )	( )	-	+	-	-	-	"hot"	?	-
Paca "vermelha"	_	_	( )	( )	-	+	+	-	+	"hot"	?	-
Cutia vermelha	-	-	( )	( )	-	+	+	-	+	"hot"	?	-
Porco do mato (peccary)	-	-	( )	( )	-	-	-	-	-	"hot"	-	-
Tatu (armadillo)	-	-	( )	( )	-	-	-	-	+	"hot"	-	-
Guariba (howler monkey)	_	_	( )	( )	-	-	-	-	-	"hot"	-	-

Appendix 2 Continued

Name	Forbioden foods											
	Light Color	Bland	Sweet or Non-acid	No secre-tions	Domes-ticated	Smooth Appear-ance	Lean	Market Goods	Small or Im-mature	Hot-cold Gradient	Highly Es-teemed	Euro-pean Origin
Shrimp	-	-	( )	( )	-	-	( )	-	( )	"cold"	±	-
Crab	-	-	( )	( )	-	-	( )	-	+	"cold"	-	-
Turtle	-	-	( )	-	-	-	-	-	-	"hot"	-	-
Dourado (fish)		-	( )		-	-	-	-			-	-
Zurubí (fish)		-	( )		-	-	-	-			-	-
	-	-			-	-	-	-		extreme		-
Duck	-	-	( )	-	+	+	-	-	-	"hot"	±	+
Turkey	-	-	( )	( )	+	-	-	+	-	"hot"	-	-
Black chicken[e]	-	?	( )	( )	+	-	-	-	?	"hot"	-	+
"Ruffled"[f] chicken						-						
Guinea hen	-	-	( )	-	+	-	-	-	-	"hot"	-	-
Boi (beef)	-	-	( )	( )	+	( )	-	+	-	"hot"	+	+
Pork[g]	-	-	( )	( )	±	-	-	-	-	"hot"	?	+
Sardines	-	-	( )	-	-	-	-	+	( )	"hot"	?	+
	-	-				-	-		-	extremes		

Appendix 2 Continued

Name	Forbioden foods											
	Light Color	Bland	Sweet or Non-acid	No secre-tions	Domes-ticated	Smooth Appear-ance	Lean	Market Goods	Small or Im-mature	Hot-cold Gradient	Highly Es-teemed	Euro-pean Origin
Farinha puba[h]	-	-	-	( )	( )	-	( )	-	-	"hot"	-	-
Milho assado (roasted corn)	-	-	( )	( )	+	-	( )	-	( )	"hot"	-?	-
Taioba (yautía)	-	+	( )	-	-	-	( )	-	( )		-	-
Nhame	-	+	( )	-	-	-	( )	-	( )	cold	-	-
Sweet potato[i]	+	-	+	-	+	-	( )	-	-	cold?	-	-
Couve[j]	-	-	( )	( )	+	( )	( )	-	-	hot?	±	+
Cabbage	-	-	( )	( )	+	( )	( )	+	-	hot?	±	+
"Milk pumpkin"	-	?	( )	-	+	( )	( )	-	?	?	±	-
Maxixe[k]	( )	-	-	( )	+	-	( )	-	+	cold?	±	-
Cucumber	-	-	-	-	+	-	( )	-	-	cold	-	+
Okra	-	?	( )	-	+	-	( )	-	( )	?	-	-
Chuchu (chayote)	+	+	( )	-	+	-	( )	-	+	?	-	-
	-	-		-		-		-				-

Appendix 2 Continued

[a]*Tacacá* sauce is made from the prussic acid squeezed from the bitter manioc. It has a sour taste.

[b]*Nhame (Dioscorea* spp.), *taioba (Xanthosoma* spp.), sweet potato (*Ipoema batata*) Other vegetables and fruits also have a sticky or milky secretion: *cucumbus (Cucumis sativus),* "milk" pumpkin (*Cucurbita* spp.), papaya (*Carica papaya*), watermelon (*Citrullus vulgaris*), *chuchu (Sechiam edule),* mango (*Mangifera indica*), *cupuaçu* (*Theobroma grandiflora*), okra (*Hibiscus esculenta*). Animals were listed as "secreting" if the colonists referred to them as having an internal *baba* (slime) that was washed away before cooking.

[c]*Cajá* (*Spondias lutea*), *açai* (*Euterpe oleracea*).

[d]Scientific names for game animals: *paca* (*Agouti paca*), *anta* (*Tapirus terrestris*), cutia (*Dasyprocta* spp.), *porco do mato* (*Tayassu* spp.), armadillo (*Dasypus* spp.), *guariba* (*Alouatta* spp.).

[e]The origin for chickens is usually thought to be Southeast Asia. However, as they were known and introduced to Brazil by the Portuguese, they are listed as "European" originating.

[f]A "ruffled" chicken is a particular breed of chicken found in Brazil, whose feathers appear to be standing straight out. Other breeds with ruffled legs, and "plucked" necks are also avoided.

[g]Most common breeds of pigs are dark and very hairy. They look a good deal like their wild counterparts, and their meat is usually "gamier" tasting than other domestic meats.

[h]*Farinha puba* is manioc flour made by soaking the tuber until it almost rots in standing water, to remove the prussic acid. It has a characteristic yellow collor, large grains, and sourish taste. Colonists classify it as "hot" as the name *puba* indicates "rotten".

[i]*Nhame, taioba* and sweet potatoes are distinct from the acceptable white potatoes and sweet manioc in that they have a sticky secretion when cut.

[j]*Couve* (*Brassica* spp.)

[k]*Maxixe* (*Cucumis anguria*)

Appendix 2 Continued

Name	Allowed Foods: Light Color	Bland	Sweet or Non-acid	No secretions	Domesticated	Smooth Appearance	Lean	Market Goods	Small or Immature	Hot-cold Gradient	Highly Esteemed	European Origin
Young pullet	+	+	( )	( )	+	+	+	+	+	warm	+	+
Castrated beef (old)	( )	+	( )	( )	+	+	+	+	+	warm	+	+
Castrated beef (veal)	+	+	( )	( )	+	+	+	+	+	warm	+	+
Kid	+	?	( )	( )	+	+	+	±	+	warm	?	+
Paca branca[a]	+	+	( )	( )	-	+	+	-	+	warm/ hot	?	–
Deer	?	+	( )	( )	-	+	+	-	+	warm/ hot	+	-
Cutia branca[a]	+	+	( )	( )	-	+	+	-	+	warm/ hot	?	-
	+	+										
Rice	+	+	( )	( )	+	+	( )	+	( )	cool	+	+
White potatoes	+	+	( )	+	+	+	( )	+	+	cool	+	-
Sweet manioc	+	+	( )	+	+	-	( )	-	-	cool	±	-
Noodles/Pasta	+	+	( )	( )	( )	+	( )	+	( )	cool	+	+

Appendix 2 Continued

Name	Allowed Foods: Light Color	Bland	Sweet or Non-acid	No secretions	Domesticated	Smooth Appearance	Lean	Market Goods	Small or Immature	Hot-cold Gradient	Highly Esteemed	European Origin
White sugar	+	+	+	( )	( )	+	( )	+	( )	cool	+	( )
Cooking oils	+	+	( )	( )	( )	( )	( )	+	( )	?	+	( )
Onion	+	-	( )	+	+	+	( )	+	+	warm/ hot	+	+
Garlic	+	-	( )	+	+	+	( )	+	+	hot	+	+
Butter	?	+	( )	( )	( )	+	-	-	( )	warm/ hot	+	+
Boiled milk	+	+	+	( )	+	( )	( )	-	( )	cool	+	( )
Powdered milk	+	+	+	( )	( )	+	( )	+	( )	cool/ warm	+	
Canned milk	±	-	+	( )	( )	+	( )	+	( )	warm	+	
	+					+		+			+	
Red beans	-	+	( )	( )	+	+	( )	-	-	warn	+	-
Mulato beans	+	+	( )	( )	+	+	( )	+	+	warn	+	-
White beans	+	+	( )	( )	+	+	( )	+	+		+	?
Carrots	( )	+	+	+	+	+	( )	+	rel. small	Cool?	+	+
Lettuce	+	+	+	+	+	+	( )	+	small leaves	Cool?	+	+

Appendix 2 Continued

Allowed Foods

Name	Light Color	Bland	Sweet or Non-acid	No secretions	Domesticated	Smooth Appearance	Lean	Market Goods	Small or Immature	Hot-cold Gradient	Highly Esteemed	European Origin
Bread	+	+	+	( )	( )	+	( )	+	( )	cool	+	+
Farinha branca	+	+	+	( )	( )	+	( )	+	( )	cool	+	-
Crackers. Cookies	+	+	+	( )	( )	+	( )	+	( )	?	+	?
Oatmeal	+	+	( )	( )	( )	+	( )	+	( )	cool	+	+
Maisena (cornstarch)	+	+	( )	( )	( )	+	( )	+	( )	hot/ warm	+	-
Arrozinha (manioc starch)	+	+	( )	( )	( )	+	( )	+	( )	cool	+	-
	+	+				+		+		cool	+	
Apples	+	+	+	+	+	+	( )	+	+	cool	+	+
Pears	+	+	+	+	+	+	( )	+	+	cool	+	+
Grapes	+	+	+	+	+	+		+	+	cool	+	+
Papaya	-	+	+	-	+	+	( )	-	-	coo/ cold	±	-
Banana *maça*	+	+	+	+	+	+	( )	+	+	cool	+	-
Oranges	?	±	±	+	+	+	( )	+	+	cool/ cold	+	+
		+	+	+	+	+		+				+

Appendix 2 Continued

Name	Allowed Foods											
	Light Color	Bland	Sweet or Non-acid	No secretions	Domesticated	Smooth Appearance	Lean	Market Goods	Small or Immature	Hot-cold Gradient	Highly Esteemed	European Origin
Tomato	( )	+	-	-?	+	+	( )	-?	( )	cool/ cold	+	-
Green pepper	( )	+	+	+	+	+	( )	-?	( )	cool	+	-
Caboclo pumpkin	( )	+	+	+	+	( )	( )	-	-	?	?	-
Green onion	( )	+	+	+	+	+	( )	+	( )	cool	+	+
		+	+	+	+	+		+				

[a]Scientific names for game animals: *paca* (*Agouti paca*), *cutia* (*Dasyprocta* spp.)

APPENDIX 3
OTHER MEDICINAL PRODUCTS USED BY VILA ROXA COLONISTS

1. *Água Inglesa* - A patent medicine in liquid form taken only by women after childbirth to "remove all the remaining dirtiness out of the womb," and ensure healing of any postpartum stitches. Again, the hot-cold classification was not generally used, but as it has "cleansing" properties it may be classified as "cool."

2. *Álcool* - Regular pharmaceutical alcohol used to "cauterize" open wounds, or as in preparation for an injection.

3. *Aspirina or Melhoral* - Aspirin-based tablets used for fever, headaches, menstrual symptoms. As they were prescribed for "fever", they were considered to be "hot".

4. *Comprimidos para malária* - Any antimalarial tablets, including *chloroquina, adabrin,* etc. Some of these were also available in injection form, which was preferred for children. Such medicine is thought to be excessively "hot".

5. *Comprimidos* or *Remédio para evitar filhos* - *Comprimidos* can refer to any pill or tablet, but in talking about birth control, it is an accepted term for birth control pills. Nearly one-third of the women had some previous experience with birth control pills, but changes in the regulations which required a doctor's prescription, kept many from continuing. Those who did have prescriptions often bought and resold the pills to others. Other birth control aids included douching with rubber syringes, and attempting to use the "rhythm" method. Inter-uterine devices and diaphragms were not known about or accepted. Hot-cold classification is not know.

6. *Enterovioforme* - A brand name for an antibiotic-antispasmotic tablet used in controlling excessive diarrhea. Hot/cold class unknown.

7. *Fenergan, Cremes* - All cremes in small tubes, including the brand name *Fenergan*, are considered appropriate for itchy rashes, insect bites, and in some cases, open wounds as they are "cooling." *Fenergan* is a topical ointment for bacterial fungal growth.

8. *Injeções* - Any injection form of medication, including vaccines sub-cutaneous tuberculosis tests, vitamin shots, antibiotics,

anti-febril medication, calcium and B-complex shots, and emenogogues (such as *Genococide*). The vitamins, calcium and antibiotics are generally considered "cooling" and "cleansing." The vaccines, anti-febril shots and emonogogues seemed to be thought of as "hot".

9. *Óleo de vise, Salsa Caroba* - Are strong patent purgatives, and the first is considered to be "hot".

10. *Receita* - General term for any prescription for medication.

11. *Remédio para o fígado* - Any patent medication sold for distress of the liver. Many came in small vials as a yellow liquid.

12. *Remédio para vermes* - Any medication in pill or liquid form which destroyed intestinal parasites and/or eliminated them through the feces. They were generally categorized as purgatives and whether or not they were classified as "hot" or "cold" is not known.

13. *Soro* - A term applied to any clear, yellow viscous liquid taken orally, intravenously, or as an injection. Such instances include the pre-packged glucose-salt-antibiotic mix given to children with intestinal disorders, multiple injections of antibiotics, or intravenous feedings of glucose or plasma given in the hospital. In all cases, it was said to have a "cooling" effect.

14. *Violeta* (Gentian's violet), *Mercurocrome* (mercurochrome), *Água oxigenada* (hydrogen peroxide), *Iodo* (iodine) - All used in cases of itchy rashes, or open lesions. Those that burn are considered to "cauterize" the wound, and are "hot."

15. *Vitaminas* or *Fortificantes* - Vitamins in pill or liquid tonics generally used following an illness, childbirth, intestinal parasites, or unsightly skin lesions. Classified as "cool."