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COMMUNITIES (PROVINCE OF MISIONES, ARGENTINA)**

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**ABSTRACT**

Those studies nominated ethno- biological (either botanical or zoological) and ecological-require an anthropological approach, holistic and comparative focussing of the interactions between man and his natural environment. One way of researching these interactions is the observation and description of the activities performed in the domestic scope. This kind of studies, employed in two communities Mbyá-Guaraní in the Province of Misiones, Northeastern Argentina, allowed us to identify and to characterize locally recognized "illnesses" and the strategies employed to overcome them. In the frame of these investigations, we present an interdisciplinary research based on enteroparasitosis with the aim of exploring local conceptions about them and integrating these findings with the data provided by the associated disciplines. Firstly, the Mbyá conception about the origin of enteroparasitosis proposes the presence of a "mother parasite" in the human being since the moment of birth. In this contribution, the recorded species of parasites are presented. Among the Protozoa we detected the presence of *Blastocystis hominis*, *Entamoeba coli*, *Endolimax nana*, *Giardia lamblia*, *Iodamoeba butschlii* and *Chilomastix mesnili*. Among the helminths we observed Uncinarias, *Strongyloides stercoralis*, *Hymenolepis nana*, *Ascaris lumbricoides*, *Enterobius vermicularis* and *Trichuris trichiura*. It is estimated that locally only those species of helminths macroscopically visible are recognized. For each parasite the Mbyá people use specific therapeutic elements of vegetal origin, specially *ka'a né* (*Chenopodium ambrosioides*) and *verbena* (*Verbena intermedia*). In addition, we present other plant elements employed by the aboriginal communities inhabitants in

the therapy of parasitosis and related diseases (diarrhoea and stomach ache) and their ways of administration. This research states the importance of local conceptions about parasitosis as a guideline for action. In this sense they should be taken into account in eventual prevention programs.

## RESUMEN

Los llamados estudios etno – biológicos ( botánicos-zoológicos) y ecológicos , requieren de un abordaje antropológico del tema desde una perspectiva naturalista; esto es, de un enfoque comparativo y holístico de las interacciones hombre/entorno natural,. Una manera de abordar este saber es a través de la observación y descripción de las actividades que se desarrollan en las “unidades domésticas”. Estudios de este tipo desarrollados, en dos comunidades Mbyá-Guaraní de Misiones, en el Nordeste de Argentina, permitieron identificar y caracterizar enfermedades reconocidas y estrategias para su superación. En este marco, se desarrolló un estudio interdisciplinario referido a las parasitosis gastrointestinales con el objeto de explorar las concepciones locales acerca de las mismas y evaluar los datos obtenidos desde los saberes aportados por las distintas disciplinas involucradas. La concepción Mbyá acerca del origen de estas enfermedades supone la presencia de un parásito madre en el ser humano desde el mismo momento de su nacimiento. En este trabajo se presentan las especies de parásitos relevadas. Entre los protozoos se detectó la presencia de *Blastocystis hominis*, *Entamoeba coli*., *Endolimax nana*, *Giardia lamblia*, *Iodamoeba butschlii* y *Chilomastix mesnili*. Entre los helmintos se observaron Uncinarias, *Strongyloides stercoralis*, *Hymenolepis nana*, *Ascaris lumbricoides*, *Enterobius vermicularis* and *Trichuris trichiura*, estimándose que localmente se reconocen sólo aquellas especies de helmintos visibles macroscópicamente. Para cada tipo de parásito reconocido cuentan con elementos terapéuticos específicos, principalmente, *ka'a né* -*Chenopodium ambrosioides*- y

*verbena* -*Verbena intermedia*-. Asimismo se presenta el total de los elementos terapéuticos referidos por los pobladores para esta enfermedad y dolencias relacionadas. A partir del análisis de los resultados de este estudio surge que las concepciones locales acerca de las enfermedades parasitarias, en tanto orientadoras de la acción, se tornan importantes en relación a un eventual programa de prevención.

## INTRODUCTION

Those studies nominated ethno -biological (either botanical or zoological) and ecological require an anthropological approach, holistic and comparative focussing on the interactions between man and his natural environment.

This kind of studies, employed in two communities Mbyá-Guaraní in the Province of Misiones, Northeastern Argentina, allowed us to identify and to characterize locally recognized "illnesses" and the strategies employed to overcome them.

Considering the sanitary importance that enteroparasitosis have in relation to the quality of life of the people, we designed an interdisciplinary research integrated by parasitologists, ethnographers and ehtnobotanists, with the aim of exploring local conceptions **and practices** about them and integrating these findings with the data provided by the associated disciplines.

### **Area of study**

The two communities -*Ka'aguy Poty* and *Yvy Pyta*- are settled on a land of 6144 hectares that is property of the Universidad Nacional de La Plata, in the Departments of General San Martín and Cainguás, of the province of Misiones, Argentina.

The area, from the biogeographical point of view, belongs to the Mixed Forest District, Paranaense Phytogeographical Province, an area of transition between the Brazilian “planalto” and the District of the “Campos”. The climate is warm and humid with an annual average temperature of 20 ° C and frequent rains all along the year, which reach a total of 1.500 to 2.000 mm per year (Cabrera 1971).

According to Official Census, nowadays there are around 3.500 Mbyá people in the province of Misiones. The Mbyá language is one of the Guaraní dialects that are still spoken in Argentine territory. The Mbya-Guarani settlements are distributed all along the territory of Misiones, and also in the neighboring countries Paraguay and Brazil. They form a kind of circuit as a result of the constant movement of the members of these communities.

This situation is reflected in the studied communities, that record at present a total of 281 inhabitants, mainly proceeding from other Mbyá settlements of the Province of Misiones, and also from Paraguay and Brazil.

In both communities, the subsistence activities include, on the one hand, swidden horticulture. They also hunt and fish, gather and produce and sell crafts and do temporary jobs in the *Colonias*<sup>1</sup>. The local products constitute the most important source of food of the group, which is complemented with those obtained from shopping in the nearby locality.

As regards the educational and sanitary aspects the communities have a Bilingual Primary School and a Room of First Aids in charge of a sanitary agent that is periodically visited by a professional doctor. Likewise, the inhabitants have an easy access to the urban centers, for the settlements are at the side of the provincial railway 7, twelve kilometers away from Aristóbulo del Valle. This small town has a public Hospital, with a medical, dentist and biochemical staff, and also with a Service of Hospitalization and Maternity.

The Mbyá people recognize the figure of the Paí (*Opygua*), religious authority that carries out the ceremonies in the temple (*opy*) connected to children's, cultivation's and honey's baptism and to the diagnoses and treatment of illnesses (Teves and Remorini 1997). It is the Paí who recommends the steps to be taken in the therapeutics both in the scope of the community or outside it. Besides the Paí some persons are pointed out as *curanderos* (traditional healers) or *poropoano vae* (in Mbyá dialect, the one who knows about medicines and herbs). A high percentage of the inhabitants appeal to these local healers who have the expertness in the treatment of illnesses that by their characteristics do not fall in the domain of the Paí; in less percentage health centers are consulted and patent medicines are consumed.

## METHODOLOGY

As from the results of a study of the enteroparasitosis in these aboriginal communities (Navone et al. 1999), an ethnographic investigation has been started the objective of which was to identify and characterize the knowledge and practices surrounding parasitosis in the context of everyday life of the people of both communities. In it, techniques of interviews and systematic observation were applied.

As regards the oral recording, interviews and surveys have been done in successive field works to adult members of all of the domestic units<sup>2</sup> of Kaaguy Poty community. We obtained information about the prevalent illnesses, their names in Mbyá language, the characteristics of the people that were affected, associated symptomatology, etiology and therapeutics. Afterwards, semistructured interviews were designed and done to local experts in the diagnosis and treatment of illnesses with symptomatology that is analogous to the parasite affections.

In the course of the interviews, information was obtained about the therapeutic resources of vegetal origin used in the treatment of parasitoses and associated illnesses, their vernacular names in Mbyá language and in Spanish, ways of obtaining, preparation, consumption, and effects. Likewise, samples were obtained for their botanical determination in the Laboratory.

As regards to the observation recording, this was centered round the identification and characterization of risk behaviors in everyday activities. With this purpose, systematic observations were done in different spaces of the Kaaguy Poty community -surrounding the DU, stream, paths frequently used by the members in the development of different activities-.

Likewise, a series of workshops in the communities and in the hospital of Aristóbulo del Valle were carried out, with the participation of members of the aboriginal population (children and adults), teachers, medical-sanitary personnel of the area, and the research team. The aim of these workshops was to expose and exchange the perspectives of the involved sectors in relation with parasitosis. All along their development different ways of recording were used –videos, tape recordings, field notes-. The workshops' participants were asked to graphically represent the places and risk behaviors in relation with parasite affections, placement of the parasites in the human body, and to draw the images that resulted from their observations with the microscope.

## **RESULTS AND DISCUSSION**

The words most frequently used to designate the parasites in the Mbyá language are *achó* or *tachó*. According to Cadogan (1992) the meaning of the word is extended to worm, intestinal worm or maggot. In Spanish, according to the frequency of use, they are called *lombrices* (worms), *parásitos* (parasites), *bichitos* (bugs) or *bichos en la panza* (bugs in the belly), and *gusanos* (maggot).



Functional criteria differentiate natural and pathological forms of the presence of the parasites in the human body. In the first case, the Mbyá ethnophysiology states that the *tachó* normally live in the human digestive tractus and they are considered an integral component of the normal physiological process of digestion.

The tachó do not come from outside, they are there since the moment of birth. *Los tacho no vienen desde afuera, están desde el momento del nacimiento* (CR)

They grow through the flesh, from birth, that is why they never end...the God put the parasite in the newly born baby's body. *crecen por la carne mismo, de nacimiento mismo, por eso no se termina...El Dios puso el parásito en el cuerpo del bebé recién nacido* (FV)

You have to have it, there's no way out...You have to die with it...they die together...there you are finished because you do not have any more liquid nor anything... Our mother parasite...that one is born with us...yes, she is born...she does not come out of the body either...she comes with you because we bring her up since we are little, since we are babies, that one already comes with a parasite from up of... ñanderachó that is how our parasite is called...the mother...ñanderachochy....If you do not have a parasite, if you eat big, it will not chew, the parasite is the one who chews. It grounds, this one is inside, it is like the other's mother, it produces before...it is there...you swallow the foods inside...if you eat a manioc...then...this one grounds. *hay que tener sí o sí...este junto tiene que morirse...se muere junto. ahí ya vos estas terminado porque ya vos no tenés mas líquido ni nada...nuestra madre parásito... esa nace con nosotros...sí, esa nace, no sale del cuerpo tampoco viene con uno porque ese ya le criamos de chiquito, de criatura, ese ya viene con parásito ya arriba... ñanderachó así se dice nuestro parásito, la madre... ñanderachochy ...si vos no tenés parásitos, si vos comes grande, no va a masticar...el parásito es lo que mastica.. Hace molinares, este es el de adentro, es como la mamá de este, produce antes de ahí,... vos tragas a las comidas adentro... si vos comes una mandioca ... entonces...ese hace molinares* (MG)

Nevertheless, when these are suddenly shaken by the influence of phenomena that are external to the human body -such as odors that come through the air, flesh of animals of the *monte* (forest), unexpected events that disturb the individual-, the normal physiological equilibrium of the gastrointestinal system is altered, giving place to different symptomatic

manifestations of the pathogenic action of parasites. The reaction can be particularly strong and the illness may be from light to serious. This conception is also recorded by Sesia (1999) for an Ojiteco group of Mexico.

The flesh of the animals of the *monte* is also dangerous: *coatí, tateto, tatú*, boar...All of them come from the smell of the flesh...These are inside people, they come from birth, all children since they are young have three kind of *tachó*. "*La carne de los animales del monte tambien es peligrosa: coati, tateto, tatu, jabali. .... todos estos vienen por el olor de la carne. Dice que estos están adentro de la persona, vienen de nacimiento, todos los chicos desde pequeños tienen los 3 tipos de tacho*" (CR).

Afterwards, he had problems (one of his children), his belly got swollen, up to now that is what he has...(and why is his belly swollen?)... I do not know...that one, John's grandmother said he had bugs in his belly, because when (the child) fell, she told me that the *tachó* got scared... the *tachó* were there, he already had them, and when he fell down the little bug got scared...that is why she said that his belly was always swollen... "*Después tenía problemas (uno de sus hijos), se le hinchaba la panza, hasta ahora tiene eso...(y por qué se le hincha la panza?) I: no sé, .... ésa, la abuela de Juan dijo que tenía bichitos en la panza; porque cuando (el hijo) se cayó, ... me dijo (la abuela) que se asustó el tacho... los tacho estaban, ya los tenía, y cuando se cayó se asustó el bichito que tenía ... por eso dijo que siempre estaba hinchada la panza (...)*" (FB)

They are quiet inside the gut, but if the person does not eat, he is hungry, the *tachó* is also hungry, the *tachó* shouts inside the belly, it is herd, it bites. That is why it is not good to be hungry. The *tachó* likes food, he likes meat, roasted meat more. *Están tranquilos adentro de la tripa, pero si la persona no come, tiene hambre, el tacho también tiene hambre, dice que el tacho 'está gritando adentro de la panza, se escucha, muerde'. Por eso no es bueno tener hambre. Al tacho le gusta la comida.; le gusta mas la carne, el asado.* (CR)

As a cause of parasite illness, besides the ways of activation of parasites that are part of the human organism, the entrance to the body of other parasites that are in the environment -as a result of the contaminating way of life of "white" people- are often mentioned.

It came from outside, or sometimes with the water... one drinks and it comes in...*nde gekué poi tachó*, my gut is *tachó*...It came in this way... through the *hindy*...it goes to the gut...because you drink water, only with the

water it comes, sometimes you take it raw, from a spring, when it is stream water it is not to drink, we sometimes drink...there they are. " *vino desde afuera, o a veces te viene con el agua... toma y se entra...Nde gekué poi tachó. Mi tripa está tachó... por acá se metió...(por) la colita... va a la tripa... porque toma agua, con la agua solamente viene, a veces toma crudo de vertiente, cómo es de arroyo no es para tomar, nosotros a veces toma ... ahí están ya*" (SP)

Illnesses that are transmitted by the "white" to aboriginal people and there can be changes, the elder lived quite, with pure air...(What kind of illnesses did the "white" bring?) Those transmitted tuberculosis and other things, parasites, the use of sweets also, candies, there grows it, it is not the "white" but the candy, something has changed and there are diseases that the "white" are able to cure...Those aboriginal people that live far from the colonies have never become ill, there are always more diseases (here) than among those who are far away. The more remote, the healthier. "...*enfermedades que transmiten los blancos hacia los aborígenes y puede haber cambio, los de antes vivían tranquilos, con aire puro...(Que enfermedades trajo el blanco?) Transmitidas tuberculosis, y otras cosas, parásitos, también el uso de dulces, caramelo, se cría esa, ya no es el blanco sino el caramelo, algo ha cambiado y hay enfermedades que pueden curar los blancos... Nunca se han enfermado mas los aborígenes que están mas alejados de las colonias, siempre hay mas enfermedades (aquí) que el que está alejado. Mas alejado mas sano...*"(AR)

The morphological criteria are central to the characterization of parasites. Those criteria derive from the observation of feces, a diagnosis criteria shared by local people and parasitologists. Though the Mbyá distinguish between two or three types of *tachó* differentiated according to color and size, the values given to these parameters are variable. Likewise, a grade of pathogenicity and virulence, and consequently therapeutics, are associated to these two parameters.

Some have deep yellow, and another is orange, yes, two kinds there are....they are different. This big is one, and it falls, the orange one ...*tachó jú*, is yellow...*pytã* is this one, red. "*algunos tienen bien amarillo y otro es anaranjado, si, dos clases hay ... son distintos, así es grande uno así, y se cae, el naranjado es (...) tacho ju, es así, amarillo, pyta es éste, (rojo)*"(SP)

There are several kinds of parasites. There is a medicine for each. One, the smallest one, is cured with *cangorosa*. The biggest one, that is caught in the gut, is cured with *kaaré*, that is stronger. There is also another *tachó*, they are three on the whole: the smallest is called *itachí*, the other one that is bigger is called *tachó sebo'i pytã*, it is reddish, the *itachí* is white. There is another *tachó*, *tachó morotí*, of a brown color, it is cured with *parí paroba*. “... hay varias clases de parasitos. Hay un remedio para cada uno. Uno, el mas chiquitito, se cura con cangorosa. El mas grande, que se prende de la tripa se cura con kaaré, que es mas fuerte. Tambien hay otro tacho, son 3 en total: el mas chico se llama itachi, el otro mas grande se llama tacho sebo'i pyta, es medio colorado, el itachi es blanco. Hay otro tacho: tacho moroti, de color marrón, se cura con pari paroba.” (CR).

...they are worms, aren't they? And there are longer and thinner ones. There are some that...green, *ovy*, that is green, and there are some that are redder... red is *pytã*. The one that itches more, that is red, the most serious. There are green, there are bigger ones, smaller ones, thinner ones, there is a little bit of everything. There are only three. Because we have three kinds, the other is kind of orange, but much...much bigger. The ones that are bad...are red, the one that is green, is not. It can be seen sometimes if you are given the medicine, there are green, yellow, there's the red one. The red are the most dangerous ones. ...lombrices, no? Y hay más largos y más fino. Hay algunos que... verde... ovy, ese es verde, y hay algunos que es más rojo... rojo es pyta. Lo que más le picaba es rojo, es más delicado. Hay verdes, hay más grandes, mas chicos, finitos, hay de todo. Tres nomás hay. Porque nosotros tenemos 3 clases, el otro es medio naranjado, pero má grande. Los que están malos es rojo, el verde no. Se ve algunas veces .. si vos te dan el remedio hay verdes y amarillos esta el rojo. El rojo son más peligrosos. (MG)

Although it is stated that the parasites may be present in individuals of any age, they are most frequently found in children under twelve years old.

The children have more *tachó*, grown ups have, but less...children can die by the *tachó* “... los chicos tienen mas tacho, los grandes tienen pero poquito...pueden morirse los niños por los tacho” (CR)

Because some feed them when they are five, six months old, and the children are ill very soon...may be they have parasites...we call them *tachó* that is parasites...at the age of six months they cannot be fed yet, the old people say, a year later they can be given something else (earlier) they are given milk, nothing else, *kambi*... cow meat can give them *tachó*...cow meat and pork too. “...porque algunos le dan de comer a los cinco, seis

*meses y por ahí se enferma entonces muy pronto el bebe, .... por ahí le dan parásitos...nosotros le llamamos tacho que es parásitos...a los seis meses no se puede dar de comer todavía, dicen los mas viejos, después de un año si se le puede dar otra cosa (antes) se le da leche nada mas, kambi. (La) carne de vaca puede ser que le dan tacho...carne de vaca y de chanco, también”(MR)*

The informants localize the parasites in the digestive system: **la panza** (the belly), **adentro de la panza** (inside the belly), **la tripa** (the gut) and they occasionally refer to their presence in the throat.

We call them **tachó**, that is what is inside the gut. There are the **achó**. Worms. They are curled up...walking slowly. That is what hurts for the children. Sometimes they do not want to eat, they have a lot of bugs, **achó**...walking like that, they come inside the **gekué**, the gut. *“nosotros los llamamos achó, eso es lo que está adentro de la tripa. Ahí están los achó. Lombriz.. Están arrollados ... caminando, despacito. Eso es lo que duele para los chicos. A veces no quieren comer, tienen mucho bicho, achó...caminando así, vienen adentro del gekué (tripa) ” (FG)*

It can also be in the throat, that is why sometimes coughs are produced. *"También pueden estar en la garganta, por eso a veces producen tos" (FV)*

Among the symptoms of parasite affections, the most frequently mentioned one is diarrhea. Other manifestations of its presence are lack of appetite, pale or yellowish color of skin, dehydration of the eye ball, stomach ache, vomits, anal pruritus, and in children, enlargement of the size of the abdomen, the belly, and slow growth.

A parasite comes like that...I have seen it, sometimes, when the children poop, like water, like diarrhea. We know what it is like. If it comes like water, we know anyway if he has diarrhea or not, of parasites, we know...half yellow and half green...then there we know...then this one has parasites, it is not diarrhea. Because of the parasite, he has diarrhea...Like worms, aren't they?. *" viene un parásito así... yo lo vi, cuando algunas veces los chicos viene la caca, como agua digamos, como diarrea. Nosotros sabemos como es. Si viene como agua, igual nosotros sabemos si tiene diarrea o no, de parásitos nomás, sabemos nosotros.. la mitad amarillo y la mitad verde... entonces ahí nosotros sabemos, ... entonces este tiene parásitos, no es que es diarrea. Porque la culpa de parásito, tiene diarrea... Así lombrices, no? " (MG)*

He will have diarrhea and vomits, and he will be dizzy because of the *tachó*"*va a tener diarrea y vómitos, también mareos a causa del tacho*" (CR)

To be skinny, they come out the throat with the vomit, sometimes they produce cough, the parasite there dies. "*estar flaco, salen afuera por la garganta con el vómito,, algunas veces producen tos, el parásito ahí muere*" (FV)

(the stomach ache may) be of...parasites...and sometimes they itch a little more, sometimes you can feel where they go...you have to imagine like that a little boy that has parasites, always very hungry, eats, eats and never grows, and the belly goes like this (shows with hands how it gains size) and always yellow, that one has parasites...the eye here too (shows) is white and black, isn't it?, in that one it is really white, it looks as if the eye is a little dry, that is all parasites, and then you have to feed it something sweet, no meat, neither rice nor noodles, you have to make it something sweet. [*el dolor de panza puede*] "*ser de..., de parásitos [...]* y a veces, pican por un rato nomás, a veces que siente bien por donde se van, [...] y bueno hay que imaginar así un gurisito que tiene parásitos siempre comilón, come, come... nunca crece, y la pancita tiene ya así va yendo (enseña con las manos, como si aumentara de tamaño) y siempre amarillo, ése tiene parásitos.[...] el ojo también acá (señala) es blanco y negro, no es cierto?,(en) ese es bien blanco, parece que el ojo está medio seco, eso es puro parásito, entonces hay que dar de comer una cosa dulce, no carne, ni tampoco arroz ni fideos, vos tenés que hacerle cosas dulces" (EV)

Usually, the symptoms are explained by reference to behavior of parasites in the body. The parasites move, bite, are caught to the gut, smell, shout, express their like or dislike for foods, fight among themselves and fall.

Worms in the belly or diarrhea, that is known...it hurts because it bites...you can hear it very well when ...it goes biting, it goes biting everywhere in the stomach. "*... lombrices en la panza o diarrea, eso se conoce [...]* duele porque muerde...se escucha bien mismo cuando la...se le anda mordiendo, mordiendo por todo el estómago". (RB)

And there it comes, it fights, sometimes it can be seen, you feel it itching like that...in the gut, you know that it is ready, it wants to fall...They fight, sometimes, in the belly, sometimes they fight and it is caught in the gut... The two of them fight, one remains and the other falls. "*...y ahí viene, se pelea, y algunas veces se ve, sentís que pica así, por... la tripa, vos sabes que ya esta, quiere caer...se pelean, algunas veces en la panza,*

*alguna vez se pelean, y se agarra, por las tripas...se pelean los dos, uno se agarra y el otro cae” (MG)*

The *tachó* bites with the teeth in the gut, it is caught in the gut. “*el tacho muerde con los dientes en la tripa, se agarra de la tripa” (CR)*

...When we eat. If one doesn't eat, it (the parasite) doesn't eat. (What does it like?) Sweet things it does. It eats sweet bread. Only sweet things it wants to eat, the *tachó*. “*...cuando comen nosotros. Si no come, él (parásito) no come. (Y qué comida le gusta?)...dulce así, pan dulce come. Dulce nomás quiere comer el tachó”.*(SP)

When the child smells the meat, the *tachó* smells too, and it doesn't like the smell. Nothing happens to grown ups that can eat meat and smell that smell because nothing happens to the *tachó*. “*Al oler el niño la carne, el tacho huele también, y no le gusta el olor A las personas grandes que pueden comer carne y oler ese olor no les pasa nada, porque al tacho no le hace nada”.* (CR)

As regards therapeutic strategies, a greater number of references to practices done in the heart of the community was recorded, through the use of *poa* (a medicine) made up fundamentally by natural resources of vegetal origin. In less degree, health centers are visited. In table 1, plant resources are stated that are used in the treatment of parasitosis and related affections.

Most of the plants are obtained through gathering in the *monte* and the surroundings of the houses. The species most frequently mentioned are *ka'a ré* (*Chenopodium ambrosioides*) and *verbena* (*Verbena intermedia*), and they are also referred to by Berlin et al. (1996) as used against parasites by highland Maya of Chiapas in Mexico.

In general these resources are processed and administered by adults in the DU. As regards the way of preparation and consumption, they are basically infusions and concoctions. They are consumed warm, never cold. Most of these plants are used in an isolated way, though there are references as regards the combined use of *ka'a ré*, *ka'api kachí* and *guavirá*.

You have to take medicines so the *tachó* can die. You prepare them as tea, *ka'a ré*, *yvyrá rapo ju* or *cangorosa*, *rabo*, *ysypó milhombre*. *Hay que tomar remedios para que muera el tacho. Se preparan en forma de té. kaaré,*

yvyra rapo ju (cangorosa), rabo, ysypo millhombre (CR)

If the illness is very serious the person has to be taken to the *opyguá*, and also before to take him to hospital you have to consult the *opyguá*. In the case of having parasites you don't take the person to the *opyguá*. *...si la enfermedad es muy grave hay que llevar al opyguá, también antes de llevar al hospital hay que consultar con el opyguá. En caso de parásitos no se lleva al opyguá .* (CR)

And we have to find out in one day or in a day and a half... we know, the parasite...give the person that medicine, herb medicine, you know, the *ka'a ré*, in the morning you take it with a little spoon to see if it does you good, if you don't take *ka'a ré* you take *verbena* but not much, a little, and then, there, it changes. “ *Y tenemos que averiguar de un día a un día y medio, (...)nosotros sabemos, el parásito ...dale ese remedio de yuyo, viste, el Kaaré, a la mañana toma con la con la cucharita a ver si hace bien, si no toma Kaare hay que tomar verbena, pero no mucho, poquito, entonces ahí cambia*” (MG)

As regards the administration and consumption, both adults and children may take these medicines. In the particular case of the children, the doses and concentrations are less. To these preparations other elements are not added, except a spoonful of sugar if it is too bitter. Besides we have obtained references in which the use of sugar is associated to the efficiency of the medicine against parasites.

...you have to give him something sweet, may be peaches or...another thing that is sweet, and then while that then you have to prepare a little bit of *sapyragy* bark, you cut a little bit, you put in a glass, you put some boiling water, a little bit only to take it all at once, and you put a little bit of sugar, you sweeten it a bit... and the little boy sat down and ate something sweet and ate for about five or ten minutes, then after that, give him that to drink, the *sapyragy* bark, the tea...after five or ten minutes, because then all the bugs come out, they eat whatever they can find and everything is together, and then, there you have to eat another thing that is sweet...they do not run, they stood up because the bugs like sweet things, and from there they also drink and eat, they eat what is sweet, and the sweet water, that one too...And immediately everything falls, after he drinks that, that is after they eat that inside, they fall...*vos tenés que hacerle cosas dulces [...] puede ser duraznos o ... otra cosa que sea dulce, entonces mientras eso, después tiene que preparar un poquito la cascarita de 'sapyragy', cortás un poco , se pone en un vaso, y le echás arriba agua hervida, un cachito*



*nomás para que toma todo de una vez, y echás un poquito de azúcar , endulzás un poquito ... entonces el gurisito se sentó y comió una cosa dulce y comió unos cinco minutos o diez minutos, y después que comió todo eso, dale de tomar esa, la cascarita de 'sapyragy', el tecito. .... después de cinco o diez minutos, porque ahí después ya salen todos los bichos, comen lo que se halla y se junta todo, entonces ahí tenés que mandar otro dulce, ahí vamos a decir, no corren, se paró porque los bichos les gustan las cosas dulces, y de ahí... ellos también toman y comen [...] comen lo dulce y el agua dulce esa también [...] y enseguida se cae todo después que toma eso, o sea después que come eso adentro se caen". (EV)*

The efficiency of the therapeutics is recognized by the people through indicators as recovering appetite and the color of the skin, not suffering any pains, as well as the visualization of parasites eliminated in feces (***tepochy***).

The face is well painted "*la cara está bien pintado*" (CR)

He changes, he takes out what was caught in the gut, he takes medicine...only there that is taken out...you give...the tea...for the children, there, they take and the following day in the morning...you have to attend, so, when the child poops, you have to be there and look...and there it falls, there it falls dead or not. "*ahí cambia, saca lo que está prendido así por la tripa , toma remedio... así sí recién larga... vos das... el té...para la gurisada, ahí toma, y otro día, a la mañana...vos tenés que atender, así, cuando hace la caca, vos tenés que estar y mirar..., y ahí cae, ahí cae muerto o no*" (MG)

## CONCLUSIONS

According to the results of the parasitologic report (Navone et al. 1999) the presence of the following protozoa was detected: *Blastocystis hominis*, *Entamoeba coli*, *Endolimax nana*, *Giardia lamblia*, *Iodamoeba butschlii* and *Chilomastix mesnili*. Among the helminths we observed *Uncinariias*, *Strongyloides stercoralis*, *Hymenolepis nana*, *Ascaris lumbricoides*, *Enterobius vermicularis* and *Trichuris trichiura*. Initially, a correspondence could be established between

*Enterobius vermicularis* (oxiuros) and *tachó pirirí* or *ítachí*, and the two sexual forms of *Ascaris lumbricoides* and the *tachó pytã* and *tachó hu*, all of them macroscopic and easily observable by the Mbyá.

In the development of all the domestic activities, there are behaviors that involve risks of parasite infections. In general, all the individuals are exposed to the same situations that risk infestation by contact of the skin with the soil or feces (Crivos et al., in press). Though the parasites are present in all the age groups, the preoccupation of the local population is centered round infancy, for in the collected information it appears as an affection of major incidence in children between 0 and 12 years old (*mita-í, mitá*). One of the reasons of this preoccupation would be a slow growth in children.

The habit of being bare footed has been one of the risk behaviors observed with most frequency in the movements of adults and children of both sexes in the surroundings of the houses, as well as walking through the paths to the *chacras* (gardens) and the *monte*. Likewise, the adoption of certain body postures in the development of different activities in which the individuals are in contact with the soil would constitute another important risk factor. The greatest exposition corresponds to children that play actively in the surroundings of the houses and the contact with the soil is more frequent, with the major risks for those that present geophagic habits. Consequently, the relationship skin/humid soil is the principal passage of penetration of some types of parasites (*Necator americanus* and *Strongyloides stercoralis*) present in all the analyzed feces samples.

There is no strict correspondence between the scientific and the local discourse as regards the origin of these parasitosis. In none of the cases have the informants considered the contact with the soil as a risk factor of infestation.

The parasites, among the Mbyá, though they are perceived as organisms with a proper existence, coexist with the human beings from birth to death. They are located in the digestive

tractus and they play an important role in the process of transformation of foods. Though some informants refer to the incorporation of parasites through the consumption of water (external origin), most of them coincide in pointing out their pre-existence in the inside of the body (“in the belly” or “in the gut”). The idea that the parasites that are inside the human body before certain situations may do pathogenic activities that are described as “the parasite bites inside”, “you feel where it goes”, “it wants to eat sweet”, “it itches in the belly” is a general belief.

The duality individual/environment is relevant to the distinction among parasites that are not pathogenic and the pathogenic ones. The environment is fundamental in the appearance of pathogenic forms, activating the internal parasites or facilitating the incorporation of other external ones into the body. In this way, the conditions of the environment, be them natural -stream water- or cultural –unexpected events, breaking proscriptions or feeding taboos- constitute in the vernacular theory the central etiologic factors.

According to this perspective, the non pathogenic state would be associated to a supposed state of equilibrium and harmony in the relationship among these communities and the natural environment, expressed in the observance of ancestral cultural patterns; as long as the pathogenic state is associated to the breaking of those patterns and to the incorporation of new ways of life, that are product of the contact with the “white” man.

## NOTES

<sup>1</sup> *Colonia* is an area, generally of small extension, of agricultural and livestock production. The lands were allotted to European immigrant families that arrived in Argentina beginning with the second half of the 19<sup>th</sup> century and are used today by their descendents, known as *colonos*.

<sup>2</sup> We use the domestic unit (DU) as an initial empirical referent to the description of the life of the group: “The DU is the complex unit that includes a social component –group of people that share the residence- and a spatial component – the physical space where they live- articulated by a set of activities that are relevant to the subsistence of the group and that are done, partially or totally, in this scope” (Crivos and Martínez 1996)

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**Table 1. Plant resources employed in the therapeutics of parasitosis and related diseases**

Disease	Plant used		Scientific name and family	Part used	Way of preparation
	<i>Name in Spanish Guaraní/Mbyá</i>				
Diarrhea		Kaa-ré	<i>Chenopodium ambrosioides</i> L. (Chenopodiaceae)	Aerial part	Infusion
	Marcela	Jate'i ka'a	<i>Achyrocline satureioides</i> (Lam.) DC (Asteraceae)	Aerial part	Infusion
		Guavirá	<i>Campomanesia xanthocarpa</i> (Mart.) Berg. (Myrtaceae)	Leaves	Infusion
		Parí-paroba	<i>Piper mikanianum</i> (Kunth,.) Steud (Piperaceae)	Leaves	Infusion
		Jabrandí	<i>Pilocarpus pennatifolius</i> Lem. (Rutaceae)	The whole plant	Infusion
Stomach ache ("yerasy")		Guavirá	<i>Campomanesia xanthocarpa</i> (Mart.) Berg. (Myrtaceae)	Leaves	Infusion
	Pitanga	Añangá piry	<i>Eugenia uniflora</i> L. (Myrtaceae)	Leaves	Infusion
	Marcela	Jate'i ka'a	<i>Achyrocline satureioides</i> (Lam.) DC (Asteraceae)	Aerial part	Infusion
	Doradilla	Amambai	<i>Aneimia</i> sp. (Schizaeaceae)	The whole plant	Infusion
Parasites		Kaa-né	<i>Chenopodium ambrosioides</i> L. (Chenopodiaceae)	Aerial part	Infusion
	Cangorosa	Yvyrá rapó jú	<i>Maytenus ilicifolia</i> Reiss. (Celastraceae)		
		Yvyrar-ro	<i>Pterogyne nitens</i> Tulasne (Fabaceae)	Bark of the trunk	
	Verbena	Guachucá'a	<i>Verbena intermedia</i> Gill. Et Hook. (Verbenaceae)	Aerial part	Infusion
	Pitanga	Añangá piry	<i>Eugenia uniflora</i> L. (Myrtaceae)	Leaves	Infusion
		Jabrandí	<i>Pilocarpus pennatifolius</i> Lem. (Rutaceae)	The whole plant	Infusion
		Typysahy	<i>Sida rhombifolia</i> L. (Malvaceae)	Root	Infusion
		Pipí guazú Sapyragy	<i>Petiveria alliacea</i> L. (Phytolaccaceae)	Root	Concoction
		Ka'api cachí	<i>Kyllinga</i> sp. (Cyperaceae)	Aerial part	Concoction
	Rabos	Yvyrá cachí	<i>Lonchocarpus</i> sp. (Fabaceae)	Bark of the trunk	Concoction