

## **Ethnic Groups' architecture in Honduras**

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### **Abstract**

This document makes a description of the different ethnical groups and the use of the local construction materials, the analysis comprehends morphological material design in order to: Determine the existence of vernacular architecture in Honduras, and the creative legacy of its ethnics groups, give our professionals a brief introduction to the characteristics and advantages of vernacular architecture as an alternative to the actual world housing problems. Each one of the subjects of this paper has been revised according to previously conducted research including interview with professionals in the matter, and it also comprehends all kinds of related documents and repeated visits to the major settlements. The main purpose of this document is to provide and discuss information to professional, architecture students and people interested in moving towards sustainable development proposals, nowadays, a subjects of attention in the world.

### **Keywords**

Vernacular, ethnics

### **1. Introduction**

The present Study of Vernacular architecture in Honduras has the purpose to let know the existence of a unique and own culture of our country. For example the use of local materials, the proper construction forms, and the different space designs, and let know

highlights, the advantages, and qualities of the vernacular architecture in Honduras, but this paper not only focus on the way aborigine builds its living space but also the meaning that all the believing and rites that takes place in all the construction process, the media where they develop their daily life, the weather, the land and others

Through the different ethnic groups there is always some similarities in their house structures, to first sight they all look alike but we are mistaken if we think like that, because every and single one of them are different with their own individualities: such as bigger or smaller, with more or less windows, higher or smaller slope on the roof, with doors in different locations, with different constructive forms, made of adobe or wood.

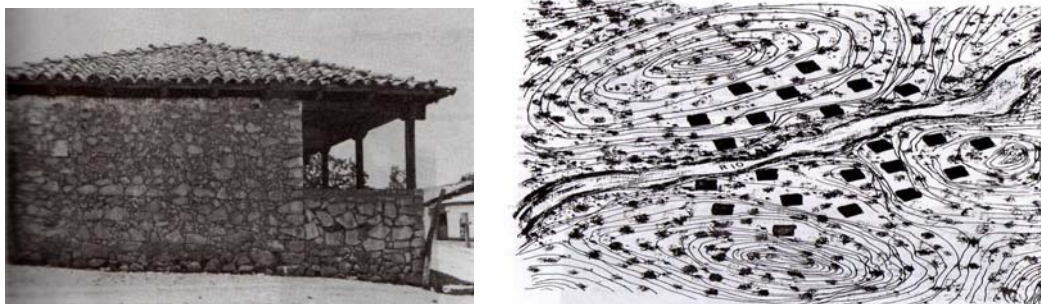
Sometimes the vernacular architectures seems so poor to the eyes of the people that use to live in the big cities where we can find concrete buildings, with big crystal windows and marmol floors. In fact, it could be say that the vernacular architecture in Honduras in very rich in materials, shapes and constructive designs. The charming of being born in the nature and mix with the environment, make it special and unique. In the big cities where the constructive technique and the materials are pretty much develop, are built buildings that, instead of mixing and interact with nature, seems like they pretend to crush it total opposite with the vernacular architecture that, instead of overhang challenging the environment, it mix and integrates to it discretely and extraordinary beautiful. Only those who live in a vernacular house could say the charming that has by its own, from its walls with irregular textures, to the bed design by the house occupant, with a architecture entirely rustic. In this paper we are going to focus of the three main ethnic groups of Honduras; Lencas, Misquito's and Pech o Payas.

## **2. LENCAS**

The Lencas aborigines can be found in the departments (Honduras territorial division) of La Paz, Comayagua, Intibucá, Lempira, and Santa Barbara. They usually live in small villages near the roads, although they can still be found in villages real inside the mountains, and they can only be reach by walking. In the mountains, the small villages are located between hills, and the houses are usually located around the river. In general at least a river is found in each community (figure 2). In the bigger villages the houses are more near one to another, each one with a backyard without delimitation of a wall or fence. The house orientation is always to west, avoiding in all ways any opening (windows, doors, or spans) toward the north, because the strongest winds come from the north that, instead of pleasant

the wind results annoying. For living in one of the highest zones of Honduras, 1950m high from the sea level, its weather is template all year long; the temperate is always between 17-20 degrees Celsius.

Originally the Lencas lived between the mountains, the ones that used to offer a natural fort from the enemy. They situated theirs camps at the edge of the river and looked for mountains that bring them protection and security (figure 1, 2).



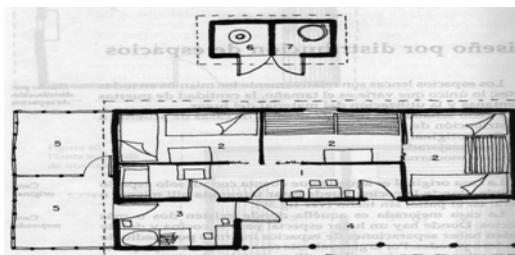
**Figure 1 and 2 Lenca's settlement**

## **2.1 SPACE DISTRIBUTION**

The Lencas' spaces are relatively the same everywhere; the only changes are the amount of doors and windows, and the use of the material according to place they are situated. The Lencas' modern house counts with good defined spaces: dorms (two or more), big kitchen, a big corridor, a henhouse or barnyard, living room (multiple uses), and latrine and bathroom at the very back or the yard (figure 3). The kitchen is rectangular that varies in sizes from 2 x 3 meters to 3 x 5 meters, have to get in from a narrow door, and the first thing to sight is a rustic cooker; this last is made of mud and polish with white soil or ashes over a wood stick table (figure 5), The lack of windows is very common in this kind of house. The windows that are rarely found are usually very small, basically it can be say that the basic function of those windows are as viewers to the outside not as natural lightening or ventilation. There are usually two or more doors according to the space use; one that directly communicates the multiple use space, one to the exterior in the frontal side of the house, and other one to the henhouse. The ventilation is made by small openings on the superior part of the walls, link to the roof (figure 4, 5).

At the kitchen is common to find a rustic table, made of wood sticks, sometimes also made of adobe becoming a part of the wall (figure 4). The multiple space area is used as dorms,

kitchen, dinning room, and living room. When the house's kitchen is separated from it, its function is limited to dorms. Exist two doors: the principal one that gives path to the corridor and a door that communicates the kitchen, when the kitchen is separated it only has one door. When you enter to the multiple space area it can be seen one or two beds made of lianas and rods, an altar at the lateral walls or the top of the beds. The latrine sometimes is next to the bathroom, but is also common to see it separated from this second at the very back of the yard. The bathroom is only a covered and roofed space, the floor is usually made of rocks or wood.



**Figure 3 Lenca's modern house**

1. Livin\_dinning room
2. Dormitory
3. Kitchen
4. Corridor
5. Corral
6. Latrine



**Figure 4 table made of wood and mud at a Lenca's kitchen**



**Figure 5 Lenca's kitchen at a modern house**

## 2.2 CONSTRUCTION MATERIALS

Even though in the cities existed new and modern materials for construction, in the small towns hasn't been introduce as a changing technique. The adobe is the only one that has been increasing as it. The houses have foundations of rocks, so this kind of house is strong and safe.

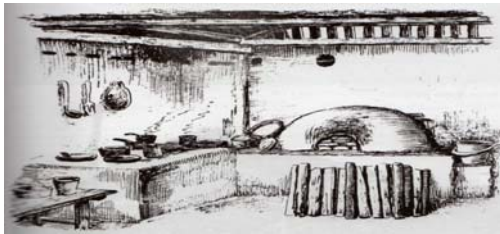
Materials use by Lencas in house's constructions:

Tradicional Materials		Present combinations
ROOF	Grass; arahuac	Clay tile
	Manaca	Galvanized nails
	Lianas	Plastic or hemp pitas
	Pine leaves	Zinc Layers
	Wild wood	Concrete
WALLS	Wild sticks	Clay Mosaic
	Pine wood	Adobes
	Lianas, rocks and soil	worked wood
FLOOR	Soil floor	Cal
	Rock and white soil	

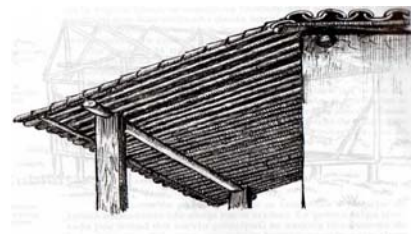
## 2.3 LENCA CONSTRUCTION

The houses from the different towns of this zone can change significantly by the different kind of materials used in its construction: in one zone the stone abounds, in others wood, mud or adobe. It can be point out 5 different kinds of construction according to the material used in it: *Wood House*, *Mud and wood house*, *Stone house*, *Adobe house*, and *Mix house*. For the Lencas to build up something is always a celebration, a blessing party and a progress celebration. **1.** To build up a Wood house they cut or pickup all kinds of wood sticks, afterwards those sticks are work out and at last give a smooth touch with rocks to them. First they buried four principal pilots (made from thick trees: 20 centimeters of diameter): then there are arrange some kind of columns and beams to fix the roof, then they make the roof out of grass, and in some cases palm: they use lianas to tie up the roof to the beams, and at last they tie the sticks to make the walls. The floor in general stays in its original form, as natural. **2.** For the mud house first the calculate the house size, if its necessary to level the terrain the make a small wall all around the area and is fill with soil and rocks all this in layers. Fist they buried the principal pilots and they design double stick walls tie up with lianas, (figure 5). Then the roof is all assemble together, when the roof is made out of manaca, is divided in small groups tied with lianas that are placed from the bottom part of the roof to the top part and is just put on the sticks that are on the roof, but when the roof is made out of tile they made those in a floor level and it's not tie up, they are just placed one over another (figures 6), then they go to roof to interlace them. Exist different ways for interlacing tiles. The floor crush with a rustic deck made by them, and

the covered it as they do with the walls (Figure 8). **3.** The walls of the stone House, are built only with stones, doesn't have any wood pilots; the placed the rocks from the beginning of the house skewback to a 2.10 meters high on the smallest part of the wall, varying on the maximum high, that gets to the roof slope, the floor is crush and covered with mud. And is polish with white soil, is a strong and safe house. **4.** The Adobe house is a relatively modern. Its construction is done is places near the cities. The adobes are usually bought from a village manufacture. To build this kind of house they first flatten the terrain and make a rock skewback of 40 centimeters deep, then when they get to 1 meter above the terrain they began to put the adobes (figure 8)



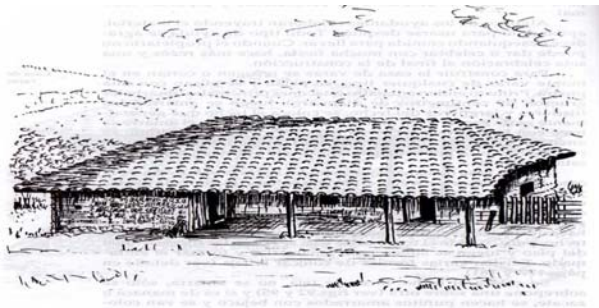
**Figure 5** framework of a mud or adobe wall



**Figure 6** tile roof



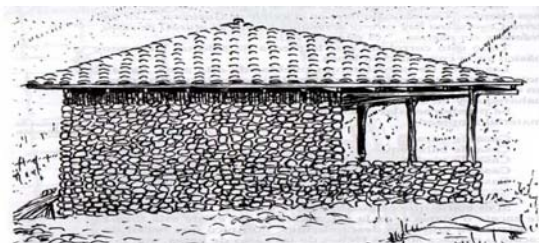
**Figure 7** tile's location detail



**Figure 8** Lenca's house made of adobe and tile



**Figure 9** Lenca's house of rock and manaca's roof





### 3. MISQUITOS

The misquitos are founded in the department of Gracias a Dios. Although there are a lot of roads near the coast that are almost impossible to get to the villages and this are found in middle of the Department jungle. They are scattered in the zone in small villages, which can be group on shacks from 5 to 45 houses (figure 10). The misquito locates his house near or at the edge of rivers or lagoons, because their principal survival method is fishing. The Misquitos that live to close to coast have changed their customs, adopting other ethnic groups ones, the misquitos that still lived deep inside the jungle, maintain and preserve in great part their traditions and customs. It is notable the weather changes that can be enjoy in this zone: at the coast is warm but humid and in interior of the department the weather varies: cool, humid, but over all rainy. Their Basic alimentation is fish, beans, cassava and banana. The zone where they have established is mostly marsh, surrounded with wild and exuberant vegetation.

#### 3.1 DESIGN BY SPACE DISTRIBUTION

There can be determinate two kinds of space distribution: Original house and pile-dwelling house. The original house (figure 11,12) in the one that only has one multiple space, where all kind of activities are held; from sleeping to cooking. Can be familiar or multifamily, varying only in the size. The pile-dwelling house separates the multiple space from the kitchen (figure 13,14). In the separated kitchens it can be observed the rustic cooker in one corner, (figure 15) it also exist the “*tabanco*” ( like an attic) that can be use as store room, as a barn or as a henhouse. Since yesteryear the *tabanco* has been the place were the store their most precious things. Both spaces are link by a small and narrow hall. In the present there can be seen divisions inside the multiple space area, by wood or paper cancels. Also can be familiar or multifamily (figure 16,17). The Misquito takes most advantage possible from the nature to work it in some way by making home utensils. They extract the Tuno’s cortex to make some blankets, clothes and bags. They also extract the resin from the rubber tree to make waterproof the fabrics and make some rubber utensils. The cut bamboo sticks or Guava tree sticks to make “*Tapescos*” (beds from lianas and sticks tied together) and extract the lianas to do hammocks. The work pretty well the wood and that’s why the Misquito’s house is full furnished by furniture and utensils made by them.

The kitchen has three doors and one window: one door communicates the backyard, the other the frontal part of the house and the other the multiple space area. The roof is high,

with a deep slope of 38 to 40 degrees. It's a warm environment, because the cooker increases the interior temperature, even though is well ventilated. The multiple space area has several windows and two or three doors. One door communicates to the corridor (front of the house), the other to hall that communicates the kitchen and the third one (not always exist) to the backyard or the superior part of the house, is very common to see that the door can also act as a window: but the half of the panel has to be closed to get that feeling.

### **3.2 MISQUITA CONSTRUCTION**

When a Misquita house is going to be build, all the village participates in the construction. The pile-dwelling house is the one, which in general, is built with Yagua's wood. Now they can do houses that not only are Yaguas wood but also combined those with other kinds of wood. For the construction they cut the pilots, then they prepared them. The lianas can be found in the trees near the rivers or platano's plantations, they collected y put them to dry, for the roof the use pine, San Juan, Santa Maria's wood, etc.

The house size is determinate in the terrain. The Santa Maria's wood pilots are arranged one or one and half meters between them. The structure is pulled up in a rigid mark way, the links are tied or joined by nails. Then they tied or nailed the walls; it could be from worked wood that is arranged vertically, or Yagua's wood that is arranged horizontally. At last they arrange the manaca (palm), tied with lianas that has been twisted in water after being put to dry under the sun; this is for it can docile, easy to handle, doesn't broke and became more resistant. The house is suspended one or one and half meters from the terrain level. The floor can be done in two ways: with sticks arrange along the room, tied with lianas, when the house is by the terrain level, is just crush or is let as natural.

### **3.3 CONSTRUCTION MATERIALS**

Even though the misquito relatively conserves pure their customs but it has expanded looking for a better perspective of life. In while they have been getting closed to the coast they have been becoming closer to a more technologic world, but not for that they have abandoned their way of construction. For the misquito is easier to use what nature has gave them, than using their tight budget to by modern material It can be say that the Misquito's construction still have the same patterns of their ancestors that. If it has been modify is in an insignificant level, doesn't alter the use of the surrounding material.



### 3.4 MATERIALS USE BY MISQUITOS IN HOUSE CONSTRUCTION:

Traditional Materials		Present combinations
ROOF	Manaca or Palm Suita o papta Lianas Lattice from pine Santamaria, or San Juan woods	Zinc Plates Galvanized nails worked wood Plastic's pita
WALLS	Yagua's wood Wild sticks	
FLOOR	crushed soil Wooden sticks	

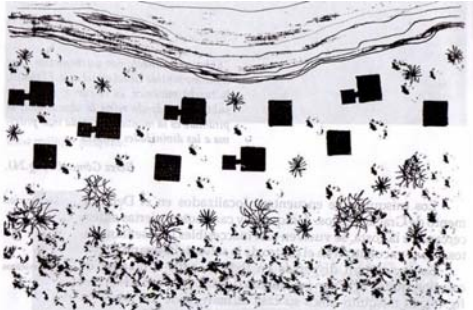


Fig 10

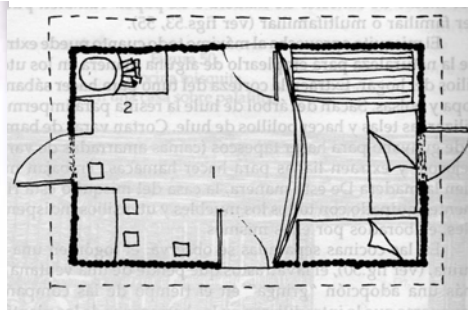


Fig. 11



Fig. 12

1. Multiple space
2. Included kitchen
3. Living room
4. Dorm
5. Corridor

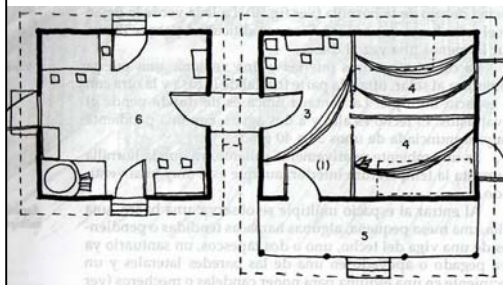


Fig. 13

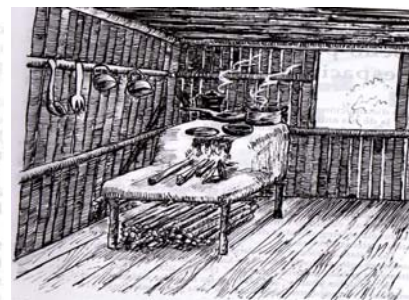


Fig. 15

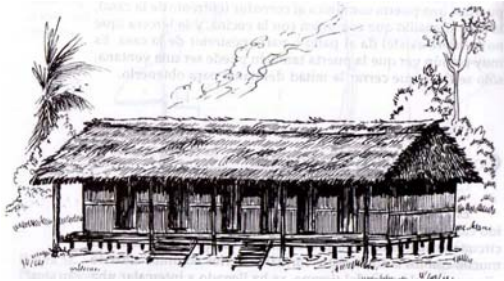


Fig. 16



Fig. 17

## 4. PECH O PAYAS

The Payas are located in the departments of Colon and Olancho; the climate of the zone is template due to the irregular terrain and the unexpected atmospherics changes. The Payas' settlement is irregular and decentralized, (figure 17). The house door orientation is toward the east and the posterior part to the sunset, one window or door with view to the principal entrance. Their houses are built over hills or over light mounds. (One over one hill), that when they go from one house to another they go up and down by narrow and curve trails, that gives a feeling or freedom and expansion. The mountains with pines and a river running by the village are the limitants for a geographic growing.

### 4.1 DESIGNS BY SPACE DISTRIBUTION

It cannot be say that the Paya's house design has been the same always since long time ago. It can be observed three groups. **1.** Rooms of only one piece that are use as kitchen, dinning and dorm, this type of home can be found in every Payas' village, characterized because is only occupied by one single family. **2.** The two pieces room, one-piece use as a domestic activity area, and the other as dorm. In some cases in this type of home can be occupied by more than one family. **3.** The communal rooms is the kind of construction that has last since the tribal communities to the present: is common to find them in the ethnic group of the Payas where, in one room, live till three families: the parents with their kids, wife's and sons-in-law, becoming an extensive and enlarged family.

From the architectonic point of view, it can be detected to kinds of designs according to the space distribution; Familiar house and multifamily house. The familiar house counts with: an included kitchen, multiple active space without divisions, and with one rustic cooker

(Figure 18). The multifamily house counts with: two included kitchens, multiple space area subdivided by cancels that separates one space from the other and a rustic cooker (figure 19). The Paya's house is extremely simple. The kitchen is included, link or next to the house. It's consider a very important place to the Payas, because is where they eat, talk, hear music and get warm. Even though it has no windows the kitchen is well ventilated because on the walls they used to leave smalls holes so the wind can go in (figures 20,21). The multiple space area is rectangular, and is where are hold different activities: form sleeping to cook. When is only occupied by one family it has no divisions, but when is occupied by different families they do, to delimitate the space that belongs to each one. Exist one principal door that is oriented to the sunset, and one or two doors to the kitchen. Generally there is no window and if it does, is oriented to the principal entrance. The ventilation is made by the holes that left on the walls and the roof.

#### **4.2PAYA CONSTRUCTION**

Their constructions are made of wood and it's a very own constructive way of theirs and consists in: straw's roof, mud or adobe wall, crush rustic floor (figure 21). First the fix-up the pilots, with wood sticks they do the framework of the walls, in the roof they just put the tile without tying them, it's just put one over another, that is why the roof is almost flat, it just have an slope of 5 to 8 degrees approximately. After they do the framework the walls are fill with mud, leaving the house with a unique rustic effect, the floor is just soil crushed, using several soil layers, the last layer is made of white soil, when the soil is completely dry the throw water with soap so the floor gets seal and don't crack. One detail of the construction is that is the main entrance they always leave one stair or a low border, the floor level is less that the stair and the same level of the exterior floor, they do this because before in the rainy season the water gets to high and got inside the houses.

#### **4.3 CONSTRUCTION MATERIALS**

The manaca's roof are very few, most of the roofs are made with clay tiles, although initially the roof was made of wood.

	Tradicional Materials	Present Combinations
ROOF	wood tile	Wood tile
	Pine sticks framework	Worked wood
	Pacuca Palm	Galvanized nail
	Lianas	plastic pita
WALLS	Pacuca Palms	
	Mud	
	Wood sticks	
FLOOR	Crush floor	
	White soil	
	Vegetable's soap	



Fig. 17

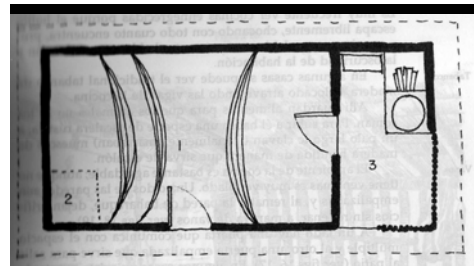


Fig. 18

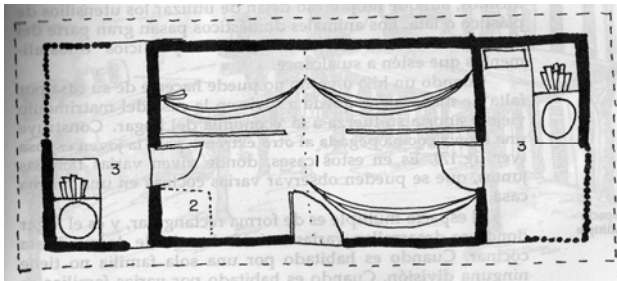


Fig. 19

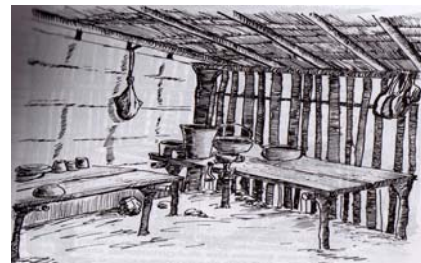


Fig. 20



Fig. 21

1. Multiple space
2. Included kitchen
3. Separated kitchen

#### 4. Conclusion

In this paper were presented the three mayor Ethic groups in Honduras, with a brief introduction of their life style and the unique treasure of their vernacular architecture. We have learn a lot, and there is a lot more to be learned, and from all of it, we have to admire how they care about the environment they live in, and find out how to apply those architectural techniques in the modern design and construction, and compare all of them to take the best of each one.

#### 5. References

1. Iris Milady Salinas, Architecture of ethic groups in Honduras, Guaymura Editorial, Tegucilpa Honduras, March 2002
2. [http://www.dlshonduras.org/DLS\\_Consultores/ServiciosGrales/InfGralHonduras/GruposEtnicos.htm](http://www.dlshonduras.org/DLS_Consultores/ServiciosGrales/InfGralHonduras/GruposEtnicos.htm)

#### 6. Presentation of Authors:



Marjorie Ellin Mejia, from Siguatepeque, central of Honduras, 22 years old and a scholarship student in the architecture department at the National Taiwan University of science and technology, I like designing trying to make mixtures of different cultures and include a multicultural concept at designs. Excited for my participation in this important conference willing to learn more and use that knowledge in the future.



Yuliana Patricia Hiniestroza, I am from the occidental part of Honduras, Erandique, Lempira, 25 years old, a scholarship student at the National Taiwan University. I come from a country full of charming, and glad for participating in this conference, where a part of that charming will be exposed.