

## CHAPTER 11

### Industrial Archaeology at Chocolá

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Fig. 11-1a, b: (a) The workshop; (b) Dryer, coffee mill, Chocolá.

#### Introduction

One of the objectives of the Chocolá Archaeological Project -PACH- is to gain knowledge on the context where the different archaeological structures are located (Kaplan and Valdés, 2003; Valdés et al, 2003). One such context is constituted by the presence of the machine shop [Fig. 11-1a, 12-2) and the coffee mill [Fig. 11-1b], which include a variety of machineries used in this industry. According to the Industrial Archaeology Program (*Programa de Arqueología Industrial, or PAI*), the antiquity of the machines would place their origins at the final portion of the 19<sup>th</sup> century, a dynamic time in the economic, social, cultural and political arenas (McCreery, 1981, Piedra-Santa, 1981). These pieces of machinery have survived through the years, and are physical evidence of historic events that have taken place both in the country and in the community of Chocolá. They are material artifacts that substantiate the presence of industry in the country. This gives rise to the following research question: how can a machinery-archaeology connection be established? One possible answer could come through the study of the machines *in situ*, taking them as archaeological artifacts positioned in some time and space, as well as within a historical context.



**Fig. 11-2: Machine shop.**

The railroad [Fig. 11-3], the Cantel yarn factory, the soap factory, the Central American brewery and other smaller factories were simultaneously functioning in the 19<sup>th</sup> century in Guatemala, (Cifuentes et al. 1993). This substantiated the significance of machinery imports for the production of a specific product or as spare parts for the already existing machines. It also implied a better administration of all these machines and the products they yielded.



**Fig. 11-3: Railroad remains, Chocolá.**

We may say that since the beginning and throughout the period of consolidation of the Industrial Revolution in Europe, there were constant imports of machinery destined to the transformation of natural resources of the Latin American countries (Ashton, 1990; Iglesias, 1981). We know that the industrialization process was a crucial stage in the development of capitalism in Latin America (Cueva, 1986; Poitevin, 1977).

This caused that parallel to the arrival of that machinery, travelers and explorers came to these lands with the purpose of exploring the natural resources of Latin American countries; later, they would send their reports to their respective governments so that in turn, they could implement the importation of the machinery required for the exploitation of those resources (Mendoza, 1997). In the case of Guatemala, there was a strong influx of imported industrial machinery from 1870 until 1940 (predominantly of German origin) for the modernization of the country supported by Liberal governments (García Laguardia, 1985). However, we should not forget that since 1920, the importation of U.S. made machines grew and gradually replaced German manufacture. The use of those machines was focused on the manufacture of paper, coffee roasters, tobacco, sugar (*ingenios*), textiles, metal, wood, etc. As time went on, these machines were forgotten once their mission was accomplished, and they were completely abandoned in the same areas where different products used to be processed, as was the case with the coffee plantations in the German estates (Cambranes, 1975, 1977, 1996; Mosk, 1958; Wagner, 1987, 1994, 1996 and 2001) [Fig. 11-4], where the labor force was mostly indigenous (Figueroa Ibarra, 1981).



**Fig. 11-4: Coffee beans drying outside the mill. After abandoning the coffee processing machines, people today have returned to less sophisticated methodology.**

The report presented here mainly attempts to make an account of a first scholarly contact with the machinery of the coffee mill and the machine shop, through an archaeological record or inventory of the machinery existing in the community. This descriptive report represents a first step in the comprehension of the historical context of the era represented by these machines. We are not attempting at this time to display a series of generalizations, which would be an important step, but which is not our major purpose at this stage of the investigation. This report has been divided in five sections. The first one is the present introduction, the second one involves the methodology used in the record, the third one is a general description of the mill and the shop, the fourth one contains a number of possible comments about this first stage, and finally, the general bibliography and addenda (PAI's proposal 2004-2007, record card - see Addendum 2- plans of façades and elevations, and in a separate file the folders that include the digital pictures corresponding to each printed card).

## Methodology

The program for industrial archaeology of the Chocolá Archaeological Project seeks to create a complete record of the coffee machinery powered by hydraulic energy, in existence in the Chocolá community. Industrial archaeology as an archaeological practice is new in Latin America. In general terms, it attempts to apply the archaeological methodology of classification, record and dating to the industrial remains, in this case of the machines used for the coffee production. The machines as a study object are a part of the archaeological investigation, and may be classified, photographed, measured, drawn, the materials of which they are made studied, etc.

This way of doing archaeology is absent in Guatemala, because traditional pre-Hispanic archaeology predominates. In Guatemala the term “archaeology in non-traditional areas” is used, to denominate the areas that are out of the circuits of the Maya lowlands, highlands, and southern coast. The study of non-traditional areas allows for the discovery of links or connections that give way to a deeper understanding of more complex areas, increasingly facilitating a global view of the archaeological areas in Guatemala, as is the case with the archaeological site of Chocolá, in the Boca Costa region of the country.

### Objectives in Phase 1

- We intend to create a record and/or inventory of the machines
- A study of this nature may be of help in the historic research of the industrialization process in Guatemala
- Dissemination of the industrial archaeological patrimony
- To create a record-inventory with the purpose of organizing a catalog of industrial archaeology

### Characteristics and scopes of PAI:

- Theoretical discussion on industrial archaeology
- The strengthening of archaeology in Guatemala

### Tasks for Phase I of Season II (May 15 to August 30, 2004)

- Record, machinery inventory
- Photographic record of machinery areas
- Detailed photographic record of machinery areas
- Field survey of the central area of the property
- Interview with workers and/or operators in charge of the machinery, descendants of operators or workers; in this case we interviewed Florentín Gómez Chávez (former worker) and Héctor Vitelio Gómez Chávez (in charge of the machinery shop). Both interviews were recorded in tapes of 60 minutes each. However, the transcription of these interviews will be accomplished

during Phase II, when the contrast of the functions of the machines is drawn. For the moment our interest is focused only on the record of the machinery.

## **General Description**

The purpose of the description is to show the state of preservation of the coffee mill and the machine shop in the period of investigation. It represents a way to ethnographically describe, as anthropologists say, the study object within its context. First we shall present the description of the mill, then the shop, and finally the surrounding areas.

### ***Coffee mill [Fig. 11-a, b, c]***

In front of the hotel's entrance and the project's house there is a portal of access to the central area of the property, consisting of two columns painted yellow and pink with an approximate height of 2.30 m; between both columns there is a black gate. One of the columns presents an original sundial. The sundial is 43 cm tall and 61 cm long, with numbers VI, VII, VIII, IX, X, XI, XII; number XII shows the lamina that represents the sun mark. Then there are numbers I, II, III, IV, V, VI, in the shape of a kind of protractor, that is, a half circumference of 180 degrees; the metal type seems to be a copper plate that marks the hour, with a dimension of 0.25 cm, a 90 degrees angle, and 35 degrees in its most acute angle.



Fig. 11- a, b, c: Coffee mill, Chocolá.

Leaving the administrative central area of the property, from the black gate at the entrance that opens in two parts towards the inside and is supported by the two columns, the mill can be seen approximately 100 m away, and the machine shop, 60 m away. The building has a façade that is 86 m long and has several windows, a gray gate, the windows are orange, possibly painted later, it is a two-level building and the lower part has a kind of basement that leads to one of the major hydraulic machines. The mill has a water entrance at the south. The gate is old; adjacent to it there is an administration booth, and at left are the stairs that climb to the second level. In this first level we see the five Guardiola dryers, three of which are water powered, while the other two are electrical. The space shows several stout wooden pillars that support the second level. At the right side there are several tools, there are wheels close to the area where water is introduced. One sector shows the pulleys that control the speed of water, and there is a shaft that crosses the entire mill; there are numerous pulleys with their corresponding speed belts and levers, gear-changing levers and supporters, which are the ones that made the main shaft of the pulleys spin round.

The hydraulic dryers [Fig. 11-1b] are of a gray color, they have their pulleys and several pipes to carry the heat. The other dryers are of identical shape and size, with the exception of the remaining two that are electrical; they all have heat pipes, and each one of them has at its inside a series of flanges that carry and dry the heat. The floor is the original one, and the tracks of the carts that transported the coffee sacks are still in place. The hullers or peelers that were used for peeling the coffee beans are found at left, there are approximately seven small blue peelers, with their corresponding levers; the peeled coffee beans then passed to some sort of tray where they were picked. In this section there is an abandoned electrical gasoline engine used to set one of the machines in motion. Between these five dryers there is a space that may be crossed to reach a series of pulleys, belts, and heat controllers. Between the two electrical dryers and the other Guardiola machines, there is a space with abandoned tools; at the left there are pools where coffee was taken through a number of canals that dragged the coffee towards that sector for the corresponding washing.

First level [Fig. 11-6]



Fig. 11-6: First level, Coffee Mill.

The first level already shows drying machines, and the abundant number of columns at the second level is remarkable; also the tracks are visible, running towards a ramp that opens to a gate, from which the small carts with coffee would set out. This upper part shows the blue peeling hullers with their water faucets, quite deteriorated but still fit to work. We may also observe the large amount of electrical cables that show the complicated power system of the entire mill. Once in the first level one may see the gate from the inside with its big hinges; in spite of its large size, this gate is of the sliding type. At the first level, if we go to the sector where water is introduced from the shop, there is a machine that moves the sluices, and there the powerful sound of water running down at a considerable speed to vertically fall on the other lower level (the cellar) can be heard. Opposite to the sluicing machine there is another one in the shape of a boat's steer, which is the one that controls the chain that maintains part of the sluice closed, and defines the velocity of the fall; the levers that were used

to open and close are visible from the first level; this machine located in the second level, to avoid the inconvenience of climbing to the first level, could simply be closed from the cellar below. We could also observe the machine that changes the belt by means of a lever. There are a number of abandoned machines with the following legend on their side: ATP Gs CrossWare McDermont Bucklaw, and there is also a very peculiar wheel with curved rays that resemble those of a sun, which is also some sort of pulley.



Fig. 11-7: José Guardiola's patent, Coffee mill.

The floor of the first level, which is the original one, has a wooden section that may be lifted; there are a series of lids that show the bottoms of the vaults where coffee was unloaded, and the belt with a number of small baskets used to transport coffee to the second level, as shall be further explained when referring to the upper level. The mill is abandoned, and it was occasionally rented for different purposes. Between the machine that exhibits the patent and the other Guardiola machine [Fig. 11-7], there is a weight and some steps that were cut, leading to the area with the five furnaces that correspond to each dryer, as shall be described later. There is a wooden floor in a number of spaces, many abandoned tools and one anvil in the first level. There are 20 stout wooden pillars with the corresponding lintels which support the second level. There is a rather elevated ramp that leads to an ancient gate with hooks and no locks; they are rather old hooks that were used to hold the gate closed; this in turn opens to the other side of the compound where the vertical red dryers are, as shall be described later. The ramp was used to direct the coffee that came from the yard after its initial drying, while the second drying was made with Guardiola drying machines; in other words, coffee was dried twice, the first time under the sun, followed by an artificial machine-drying, so that it was well dried by the time it reached the section located at the second level where it was selected.

### ***Furnaces***

There is one sector that is interrupted and leads to a storeroom with sacks of coffee and the five furnaces, each furnace corresponding to each one of the dryers with



their corresponding engines. We have one section here that has something to do with electrical power, and near the furnaces there are a number of pulley machines displaying the following legend: DF Sturtevant Massachussets No. 3; another one reads Ford Machines and Forgeste Sturtevant, Boston, Massachusetts. In that section near the modern furnaces, the older furnaces used before the electrical ones arrived were also found. The old furnaces used firewood and were located in the storage area where wood was stored; the ancient furnaces with their corresponding conduits and pipes for heat transmission, were manually fed with all the firewood that was cut. There is another storage space purely for coffee, with a furnace that corresponded to the Guardiola machine driven by an English belt engine of Gordon and Company Engineers, London; this is the machine that exhibits the patent plate. Obviously, the mill underwent several remodeling events at different times. The section of the electric vertical dryers contributed to the expansion of the sector.

In the back of the mill there is a ravine and a series of canals where coffee was introduced and taken out. There is a section known as the store in this first level as well, it is on the way to the cellar, and has a rather recent metal door, for storing tools, files and some deteriorated spare parts, barrels, pipes, canals, ancient hullers, pulleys and wooden wheels. There is a series of shelves for depositing different utensils such as gas lamps, now obviously abandoned and rusty. Then there is a space that descends through some steps that lead to the lowest part, roughly 11 m down. The stairs are rather old, tough, and have a handrail; there is a smell of humidity, and there is abundant bat excrement, as there are numerous bats living in this sector. In the lower part of the mill rests the main engine that produces all the rotation movement by means of two huge pulleys; this is the one that produces the drive and generates the rotation of the lower and upper pulleys, setting in motion the main shaft of the pulleys in the first level; the entire process is completely hydraulic. Water runs down vertically producing the energy which in turn produces the drive; however, this sector is quite humid, deteriorated, and there are pieces scattered around, but nonetheless represents the most important part of the mill.

Second Level [Fig. 11-8 a, b, c]



Fig. 11-8 a, b, c: Second level, Coffee mill.

Before reaching the second level there is a small intermediary level between the first and the second that architects call mezzanine, which houses several machines painted in a silver color and include their corresponding inventory numbers; there are dispersed wooden pulleys, water powered engines which read John Gordon and Company, London, several heat conduits, and one machine manufactured by Kinon Limited and Engineers, Haverten, Scotland; therefore, there are English, Scottish, U.S. and German machines. The structure where all these machines are located is made of tough wood painted white, a bit damaged by the moths, but the blocks are stout, there is a pulley at about the middle of the structure, bearings to provide pressure to the pulleys, and major quite strong wooden pulleys. They all have a number, and probably there are 100 pulleys of varied sizes that once controlled the entire mill. There are coffee falls as well, and one machine that reads D. Engelbert Huel Company, Syracuse, New York.

Climbing the steps to the second level there is a first landing; the steps are painted red. The second level has a more ample spatial distribution than the first. The second level has administrative and storage spaces. There is a large storage room with wooden doors and bars to the right, another large room to the left, and the coffee falls in the middle. The metallic, square shaped falls correspond to the modern electric dryers, and the other ones made of old wood, correspond to the Guardiola water powered dryers. There is a machine also used to refine coffee, with a logo that reads: CL Limited, in a golden color, and there are cleaning machines with factory names such as John Gordon and Company, London [Fig. 11-9], displaying in Spanish: Size No. 2, 11081, London Pulley 75 Revs for Minute (revolutions per minute), John Gordon and Company, London. There are many old wooden pulleys that still work in this level; the colors of the machines are different

grays, and the coffee falls are painted white. The north profile shows a section that has been added on, where the red dryers are located; this addition was built in the 1960s', and then there is the yard for the outdoors drying of coffee, which is the original one.



**Fig. 11-9: The John Gordon and Company's patent.**

There are several types of conduits to transport coffee to the upper sector for the selection of beans brought by the dryers, lifted by hydraulic power through a number of belts that would bring a kind of small metal baskets where coffee was lifted and then brought down to the lower section in sacks, through some wooden conduits that allowed the coffee sacks to fall to this section. There is a room towards the north that was used for storage, with a sort of tubes that would carry the coffee being introduced from the vertical dryers (the addition mentioned earlier), could be placed in a sort of small carts to be taken away for selection, while the process of putting coffee into sacks went on.

The rear part of the mill with the main chimney, approximately 30 meters tall, can be seen. In this sector there is a number of pulley machines, as well as some kind of basket that descends with a cable to lift and lower the sacks, like an elevator. There is a sector probably used for administrative matters, and then in another sector towards the south profile, women worked sorting and selecting coffee. This is where machines that were used to sort and select the coffee that was to be packed in the sacks are. All these machines, ten in total, were used to select coffee. There was a wooden stand where sacks were placed, a ramp or slide where sacks would slide down, and trucks parked outside the mill were ready to receive them. There was a trademark (template with letters) that read: Fincas Nacionales, Product of Guatemala, Clean Coffee, Spain Net y 195 - with a space to insert the number of the last year. This was placed like a sort of serigraphy label on the sacks, and then a black painting was added.

The upper part of this south profile is very dilapidated; the windows have no glass, they've been broken. The balconies are falling down, the wood is completely rotten, and the room is large, with approximate dimensions of 7 x 12 meters. There is old furniture in its upper part, in some kind of attic. The doorways have the shape of a curved arch with metal pillars. The machine shop can be seen from this south profile towards the west. The wooden structure appears quite strong when walking towards

the upper section. After the mill, the place was expanded to house two vertical dryers and a patio for the coffee.

The Mirador [Fig. 11-10]

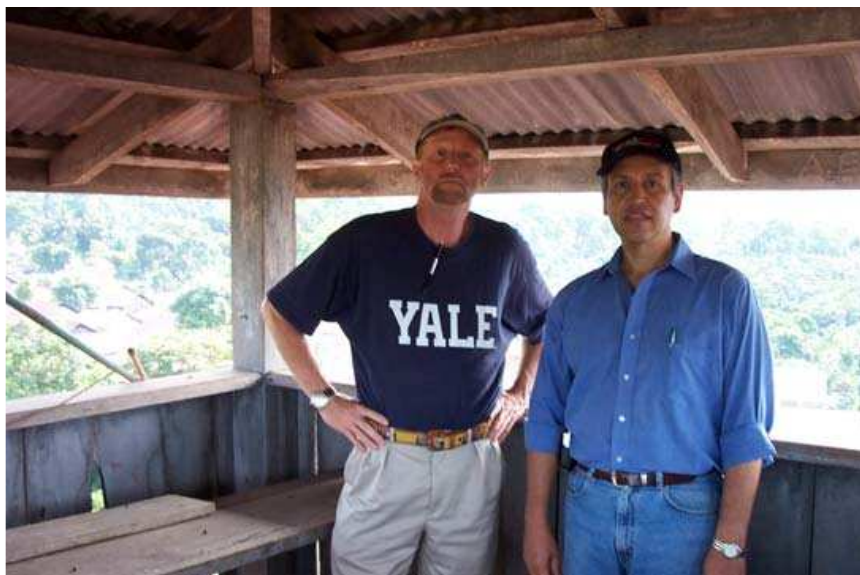


Fig. 11-10: PACH directors at the Mirador, Coffee mill.

Heading towards the *mirador* of the mill, which looks like a small tower, from the second level, one has to walk through very slanting narrow steps, then there is a landing, other inclined steps, and then the entire wooden structure becomes gradually visible; it is old and deteriorated, with porcelain switches and bulbs. From the *mirador* we can see the machine shop which in the old days had a clock (with a date of 1895) right in the middle, and which is now located towards the west; we can also see the water canal that comes from the upper area of the community. We observe the so-called hotel (presently a school with power problems), where the group of archaeologists is staying. We see the administrative house as well, and the church built by the Germans with a bell that exhibits a date of 1913. The *mirador* provides a view of the entire town, its urban growth, the German-style houses showing that the architecture is maintained and continues, the major residences that housed the German staff, administrators, managers, payroll chiefs, foremen chiefs and others. The town has expanded to the south and north, and in a lesser degree to the east, because there is a ravine where a river flows; urban growth is also observed westwards.

Machine shop [Fig. 11-11 a, b]



Fig. 11-11 a, b: (a) Machine shop.

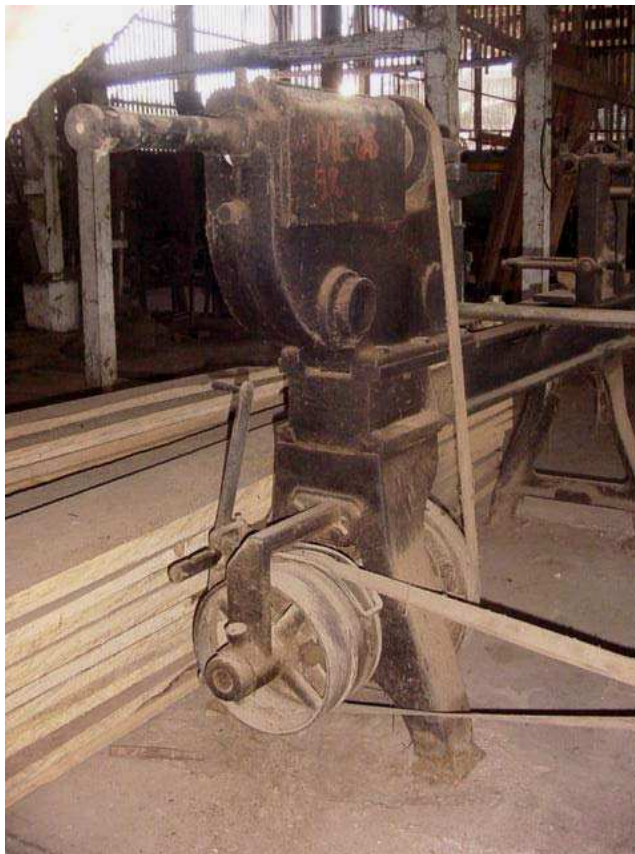
Standing in front of the shop we can see the mill's façade and the shop to the left; from the front, the machine shop looks very deteriorated, it is completely made of wood, with very little metal structure just like the mill; the old tower can be seen where the clock used to be located, it has a few very decorative edges, as does the following tower with its bell. The store is to the left. Standing in front of the two columns at the entrance of the central area of the property, we can see the shop with different sheet metal and wood windows. There is an old picture on what apparently is a concrete wall, but in fact it is wood or sheet metal, painted white. To the west one may see the feeder canal that carries water from the upper sector of the community and takes it straight to the Pelton wheel inside the shop, then it passes underground across the shop and reaches the mill at an increased speed, due to the slope of the terrain.

From the shop's entrance and to the right, the water powered Pelton wheel is visible, while to the left there are a series of spaces that house unused trucks. There are two rooms in the back that function as a small warehouse. There is a large table, together with a number of old tables close to the entrance. There are three presses on the left, and a back room on the left side which is the store, with two levels. Near the right rests the machine used to bend the canals or to manufacture the metal canals (card 11). We may see here the entire electrical structure, formed by old cables. This space has approximately 14 columns. Then there are a number of closets for the forge, with numbers on small plates, 5.36, and there is a closet with lathes, where there are compasses, files, screwdrivers, spare parts and chains. The last two closets contain electricity materials.

Each sector has its own closets, for example the lathes section has its own closets. Then there is the forge (card 3) where iron is melted, one anvil, the original floor, cement squares, large presses, and all the lathe machines. There is as well an air engine, and the crucible to receive the liquid metal. We may also observe the lathe machines (cards 1 and 2), in the same manner, in the upper part there is a number of shafts with approximately 40 large pulleys. We have the lathe machine (card 8), greased and functioning, and the drill (card 5), and adjacent to them on the floor there is a number of spaces covered with wood where the water runs below. There are five wooden lids that cover the lower part. Then we see the master lathe (card 2), the largest of all lathes. On the floor there is grease, oil, as well as pieces of wood and metal, dispersed across the shop area. The area of the machine used to fix

pulleys works as an auxiliary Pelton wheel, and is very deteriorated, the pulleys are large and the belts old.

Carpenter's shop [Fig. 11-12]



**Fig. 11-12: The carpenter's shop.**

We will now describe the carpenter's shop and/or sawmill. Some young men are currently taking a carpentry course in this area and they go there to practice using the machines. In the sawmill area there are several loose, abandoned pieces. Looking up, we observe that the entire shears structure is made of wood with metal sheets, the master wooden pillars support the roof, and there are tall squares. The sector is large, it shows scattered pieces, as well as belts and machines in use. This sector houses the machines (cards 9 and 10). From the southern sector we may see the machines in perspective, with the pulleys spinning round, and most of the beams show spider webs and rusted sheets. This sector has a gate through which wood was introduced, and there is a machine with a track where wood was placed (card 14) and transported to the saw. This sector is abandoned, and a ramp used to carry the wood still exists. If we stand in front of the ramp in a straight line, we may see the space where timber was stored outside this sawmill to be later removed and cut, so this entire sector is covered with timber refuse.

The place is quite abandoned, and there are remains of timber, metal, tables, bamboo, unused planks piled up and destroyed, the sawmill machine is entirely deteriorated, dirty and neglected; there is a machine made in Vermont, and the saw (card 14). This sector is quite abandoned; there is a wheel on a wall, with an approximate diameter of three meters, and some steps that lead to an added space

where there is one machine with two pulleys. On the opposite side there is an entrance, the floor presents parts with the original stone, and everything looks somewhat deteriorated. On the floor, there are a number of small wheels used to run the track. There is a small room between the two pulleys with another abandoned machine, precisely the one that was used to bring the timber. It is said that one individual sat on the machine to direct it towards the direction where wood was to be transported; the machine has lost one of its pulleys. This machine, used to pull timber, displays initials on its left side which read: CH JUCHO 689, and on the opposite side it reads: 37; these initials were imprinted in the metal, they are not a scrape but an incision, and are filled with grease and oil. In this southern sector there is a lateral gate, with an original metal base and a sheet of a circular crank; this gate is quite old, and close to it there are some pieces of wood, some hullers used in the mill, heating tubes, etc. In short, this sector has become a depot for refuse materials and remains of useless machines.

The shop, seen from the western sector, shows on the left the pulleys that drive the Pelton wheel, and the entire floor of the wooden frame which is quite stout, though it is remarkably damaged. In the upper portion we may observe all the beams, shears and columns that support the shop; there are no metal frames, all is wood. It is obvious that the shop, like the mill, has undergone a number of successive constructions, some pictures show a protuberance in the shape of a shed in front of where the clock used to be; now it no longer exists. Walking from west to east, we have a view of all the machines, the open closets, there is a large amount of old pulleys, screws, nuts, machines used in the past which are quite deteriorated, there are carpenter's squares, screwdrivers, and lathe materials corresponding to the master lathe.

Pelton wheel [Fig. 11-13]



**Fig. 11-13: The Pelton wheel.**

The Pelton wheel (card 13) has an approximate diameter of 10 m, and powers three belts, by spinning a shaft full of pulleys that crosses the entire shop. The Pelton wheel has a concrete base covered with a sheet, the wheel cannot be seen, but there is one position where a part of it is visible, and it is a wooden wheel with a small square hole, where one may see the wooden wheel with steps where water is deposited, spinning around; the main pulley that pulls the entire carpentry sector has a belt of at least 10 m long, several wooden pulleys simultaneously spinning around; the pulleys, because of their use, are quite clean, shiny and silvery. On the opposite side of the wheel is the carpentry sector; from that point the two wheels may be seen, two pulleys and the two gears that make the Pelton wheel spin round, this is visible from the side opposite to the one where we described the concrete base of the wheel, or the side of the carpenter's shop.

The clock [Fig. 11-14a, b]



Fig. 11-14a, b: The clock.

To reach the clock (card 15) there are some rather narrow wooden stairs of approximately 70 cm with a marked incline, it has 17 steps and then a landing of approximately 3.36 m, then another 10 steps that reach the base with the closet that houses the clock. The closet is quite old and neglected, and it is almost 3.30 m high. The clock occupies the lower part of the closet and adjacent to it are the weights (a large one and a small one), downwards; that means that the spring must be running out, so the weights must be lifted, and that is accomplished by winding the clock with a curved crank. The support that bears the base of the clock is a small wooden room with a concrete base located under the steps.

This clock works just fine, all of its pieces are bronze-made, the frame is of iron, a XIX century style. The poor security provided to this clock is remarkable, there is no padlock, the closet has no key and can be easily opened; its wooden structure is full of spider webs and there are leaks in the roof, as is evident when it rains, in addition to other holes. The clock has several gears, a mechanism to wind it, and the base shows four pedestals and one pendulum. The lower portion reads Bockhenen 1895, the manufacturing house, and then it reads J.L. Weul, which is the name of the manufacturer. Thus, we have the date and the house of the manufacturer.

There are as well, on top of the closet, two hour markers at both sides with their corresponding numbers and needles. One is seen from inside the shop by the workers, and the other is seen from the outside, by the entire community. The clock has cables that reach the bell, and there are two other cables that support the two



weights. The clock is pretty well oiled and greased, and is winded each 8 to 10 days. The floor is full of oil and grease. In ancient pictures, the clock initially is seen in the central portion of the machine shop, but later it was changed and moved to this tower further west, where it has remained during the past years.

### ***The mill, the shop, and surrounding areas***

In the administrative sector (central area of the property), entering through the gate and the two columns, straight ahead is the so-called hotel (which currently houses a very precarious school); according to some local inhabitants, it used to accommodate travelers and other people who visited the property. The files, which are in a state of neglect, have been deposited at the hotel. At the right is the house that was restored for the Chocolá Archaeological Project, where the team of archaeologists is staying. In the past, the house was inhabited by the administrators, though there were specific houses for the chief of the shop, the manager, the administrator, etc. The house features an architectural style typical of the XIX century, and includes a large outer corridor and several rooms, in two levels. The house has a large kitchen. In the garden there are some metal sheets, where probably the German owners used to clean the mud from the soles of their boots. To the left there is a quite large garden. This garden surrounds the hotel completely as well as one part of the front of the house.

Across the garden is the administrative house, that is, the house from which the administration of the property was run. Presently it is occupied by the active board of directors of the Associated Peasant Enterprise (*Empresa Campesina Asociada*, ECA) which represents the local power in the community. The house has a ridged roof, like the mill and the shop, though the house typically features four sides, each one with a ridged roof, or in other words, eight sides of roof. In front –above– of each side, there are some large tilts. There are six beams at each side located up front to support it, and in its upper part there is a bell tower. To enter the house there is a stair with 12 steps. In the portion that faces the current street, we observe once more the sheets on the floor that were used to clean the mud from boots. The architecture of the house is made of wood, including the roof, which has been restored (by the communal authorities). There is a space that was probably used to keep horses. The four sides are well taken care of, the windows show their original frames, there are metal balconies, and a small garden in the back, with a yellow and red floor which seems to be the original one.

At the back of the administration house there is a deteriorated small booth with rotten beams where the sanitary installations are found; interestingly, it maintains the architecture of the ECA house, but in small dimensions. Nearby, there is a canal that probably transported water for the garden. At the left of the ECA house there are some dispersed square blocks that were a part of two columns similar to those found at the house and hotel entrances, which, according to the local inhabitants, were in ancient times located at the entrance of the stable. Today, the former stables are a multiple-use room where another school is functioning.

The church is located towards the north, and close to it on the west side, there are several houses for the administrators, located around the central area of the property. Those houses are presently used to house people, and maintain their ancient architecture; there are about six, and are located close to the water canal.

Farther north we may see the commissariat of the German owners. Standing at one side of the ECA house we may observe the slaughterhouse where meat was distributed, and then the old hospital whose rooms are currently used to house people; close to the hospital was the so-called “cepo”, where, according to one of the locals, workers that had committed a crime were locked up; it was a dark room with poor ventilation. Across the hospital is the canal that carries water from the upper section of the community, and is introduced straight into the shop and the Pelton wheel. At the right of this canal there is an ancient stone canal, perhaps for drainage, different than the other one, with a base of concrete to support a metal canal that extends to the shop.

## Comments

The use of the term Industrial Archaeology illustrates the end of this survey. As indicated in the introduction, this phase 1 consisted of a first approach to create a complete record of the different coffee machines located at the mill and machine shop. It was a descriptive but significant phase in the development of the research. We intended to create an archaeological record, inventory and/or machines catalog. Our interest led to a bibliographical research connected with industrial development in Guatemala, mainly during the XIX century; there is a treasure of informative sources in Chicolá, but much more study is required, and mainly, the preservation of the archives [Fig. 11-15 a, b, c, d]. This would be a way to relate archaeology to history, an objective that reaches beyond the scope of this archaeological record, based on the method of description used in archaeology. A record card was designed (see Addendum 1) to record and describe the machines. This exercise encouraged the bibliographical search of industrial terms, such as pulleys, crucibles, levers, belts, etc.

During our search regarding the function of each one of the machines we turned to the interview technique, mainly with Don Héctor Vitelio Gómez and Don Florentín Gómez, who were of great help with the information they provided. We may say that industrial archaeology is a field with a great future in Guatemala and the world, as the Industrial Revolution of the XIX century has left evidence or witnesses of this development in every country.



Fig. 15a, b, c, d: The Chocolá “files” of the post-industrial era, in a jumble.

## Addendum 1

### 1. Industrial Archaeology Program – PAI – (2004-2007):

#### Research questions:

- How may we encourage the construction of a collective memory?
- Is it possible to strengthen the local administration through studies of industrial archaeology?
- What is the nature of the urbanization process in the community?
- Is it possible to suggest salvage policies for historic centers?

#### Research issues and subjects

- Industrial history
- Collective representations at industrial spaces
- Industrial archives
- Reuse and social organization of industrial spaces by the community
- The industrial patrimony
- Archaeological industrial patrimony

#### Major social actors

- The State (IDAEH)
- Municipal Administration
- Communal social groups (ECA)
- Archaeologists (locals and from abroad)

## Strategic fields of activity

## \* Research

- Development, execution and creation of research programs
- Field work in semi-urban areas
- Organization, supervision, dissemination and evaluation of investigations
- Bibliographical research of industrial studies in Guatemala
- Creation of a record or catalog of theses and projects
- Training of experts in industrial archaeology
- Exchange with foreign scholars (University of New Mexico and other institutions)

## \* Teaching

- Collaboration between the Area of Archaeology of the School of History of USAC and the University of New Mexico, as well as other institutions.
- Thesis and research work orientation
- Seminars, lectures and short courses on Industrial Archaeology.
- Creation of an instrument for results dissemination (Magazines, Bulletins, etc.)
- Exchange of experiences with foreign scholars

## \* Field practices

- Support field practices students from the area of archaeology of USAC and from other institutions
- Production, dissemination and training-related actions (courses, seminars, symposia, workshops, publications, conferences, etc.), at different levels, such as universities, basic organizations, etc., jointly with the University of New Mexico

## Work Chronogram (2004-2007)

- I PHASE (2004) Archaeological record, inventory of machinery
- II PHASE (2005) Archive and documentary search (General Archive of Central America, AGCA, Academy of Geography and History –AGHG) (Primary sources)
- III PHASE (2006) General bibliographical survey of industry in Guatemala, historical, Economical and social contexts in the XIX-XX centuries (1870-1944) (Secondary Sources)
- IV PHASE (2007) Writing of the final report corresponding to the three previous Phases conducted along four seasons.

## Addendum 2

Chocolá Archaeological Project, University of New Mexico-USAC  
 San Pablo Jocopilas, San Antonio Suchitepéquez, Guatemala  
 II Season (May 15-August 30, 2004)  
 Industrial Archaeology Program – PAI  
 Researcher:  
 Date:        /        /

### RECORD CARD No.

Function of the machine inventory No.				Original
Date of Manufacture	Country	Area (1) Mill	(2) Machine shop	Location (wall)
(N) (S) (W) (E)				
Total dimensions	Frontal elevation		Rear elevation	Length
(Meters)	Left profile elevation		Right profile elevation	Width
Type of metal:	Steel	Iron	Bronze	Alloy
All of the above				
State of preservation of the machinery:		Complete	Incomplete	Rebuilt
Deteriorated				
Not used				
Associated parts:				
Photographs	Front	Rear	Left profile elevation	Right profile elevation
Plan view				
(numbered according to exhibit) context		Isometric (width, length, height)		View of localization and
Interview with:				
Observations:				