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**Pre-Hispanic and Colonial Metallurgy in Jicalán, Michoacán, México:
An Archaeological Survey**

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Research Year: 2003

Culture: Tarascan and Náhua

Chronology: Late Post Classic to Colonial

Location: Jicalán, Michoacán, México

Site: Jicalán el Viejo

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Abstract

On the basis of an extensive iconological analysis of the pictographic document widely known as the *Lienzo de Jicalán* or *Lienzo de Jucutacato* (second half of the 16th century), we undertook a survey and elaborated an inventory at the archaeological site of Jicalán el Viejo, which has been identified as the famous town of Xiuhquilan, one of the key places mentioned in the history narrated in the *Lienzo*. This project establishes the bases for future survey pits and excavations that will allow us to reach a better understanding not only of the site itself, but also of the *Lienzo* and other historical documents. By the same token, it underlines the need and usefulness of fostering critical dialogues among the different disciplines involved in the study of Michoacán's past, especially history and archaeology.

Resumen

A partir de un extenso análisis iconológico del documento pictográfico generalmente conocido como el *Lienzo de Jicalán* o *Lienzo de Jucutacato* (segunda mitad del siglo XVI), iniciamos la prospección e inventario de Jicalán el Viejo, sitio arqueológico que fue identificado como el famoso Xiuhquilan, el lugar clave de la historia narrada en el lienzo. El proyecto proporciona la necesaria base para futuros pozos de sondeo y excavaciones que nos ayudarán llegar a un mejor entendimiento no sólo del sitio sino también del lienzo y otros documentos históricos. Al mismo tiempo muestra la necesidad y utilidad en la historia y arqueología michoacana de promover el diálogo crítico entre las distintas disciplinas que se ocupan del estudio del pasado.

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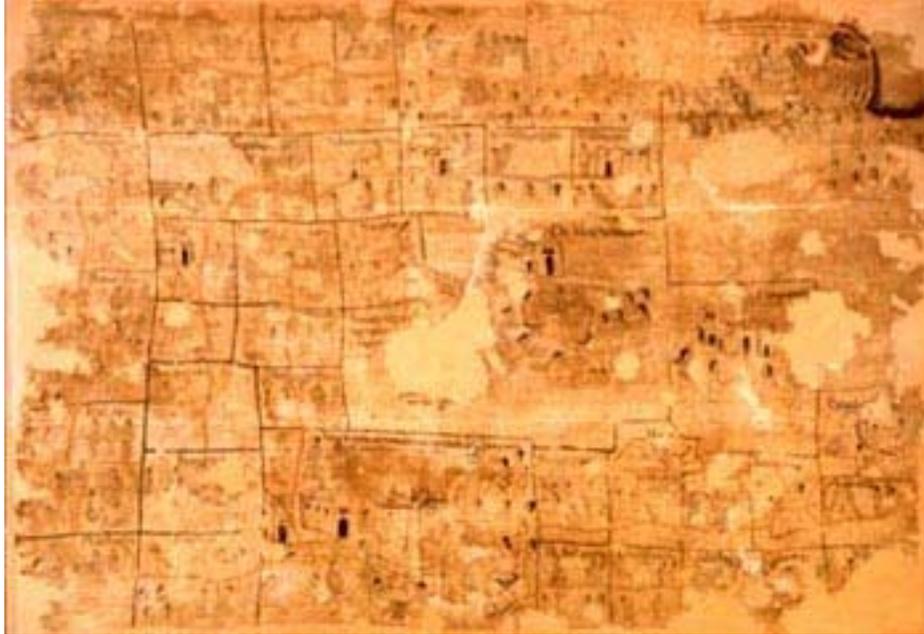


Figure 1. The Lienzo de Jicalán. (Photograph: El Colegio de Michoacán.)

Introduction

In addition to the *Relación de Michoacán* (1539-1541), one of the best known and most widely studied ethnohistorical documents in Michoacán is the *Lienzo de Jicalán* ([Figure 1](#), shown above). This *Lienzo* is a pictographic document elaborated and used in the second half of the 16th century as proof of the rights that the indigenous authorities of Jicalán believed they held over several mineral deposits, copper sources and soil-based colorants in the "Hotlands" (*Tierra Caliente*) of Michoacán. According to the *Lienzo*, the ancestors who founded this town in remote times were *Náhuatl*-speaking *Toltecs* who venerated the god *Tezcatlipoca*. Born to the east, beyond the coast of Veracruz, where the sun that gives birth to all life rises every day, they had at some moment set out on an arduous migration towards western México that eventually brought them to the area south of the modern city of Uruapan, where they established the so-called *Cacicazgo* (chieftainship) of Jicalán and initiated their main economic activities: copper-smelting and the elaboration of painted gourds ([Figure 2](#), shown below).

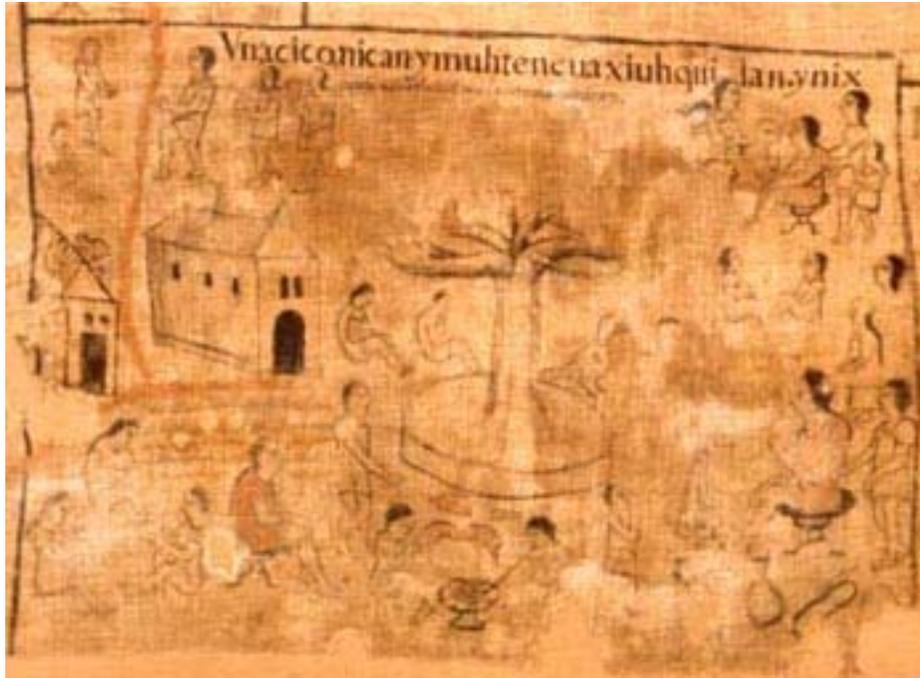


Figure 2. The founding of Xihquilan or Jicalán according to the Lienzo. (Photograph: El Colegio de Michoacán.)

The *Lienzo* reveals that the inhabitants of Jicalán exploited copper mines located along three routes leading to different areas of the Hotlands. The first led south until it reached the northern shore of the Balsas River, in lands that now form part of the municipality of Huetamo (southeast of Jicalán). The second route followed the Marqués River up to the present dam at El Infiernillo (to the south), while the endpoint of the third route was the Pinzándaro region, on the shores of the Tepalcatepec River (southwest). Although after Jicalán was annexed by the *Tarascan* Empire in the late 15th century, its residents began to pay tribute in the form of gourds and agricultural utensils made of copper, their rights to the mines were recognized by both the pre-Hispanic kings and their Colonial-era successors (Figure 3 and Figure 4, shown below).¹

¹ A thorough analysis of the contents and historical context of the *Lienzo* is found in Hans Roskamp, *La historiografía indígena de Michoacán: El Lienzo de Jucutacato y los títulos de Carapan* (Leiden, Research school CNWS, Leiden University, 1998, CNWS Publication #72), and, "Historia, mito y legitimación: El *Lienzo de Jicalán*", in Eduardo Zárate Hernández (coord.), *La Tierra Caliente de Michoacán*, Zamora, El Colegio de Michoacán/Gobierno del Estado de Michoacán, 2001, pp. 119-151.



Figure 3. The migration and mining routes in the Lienzo de Jicalán. (Photograph: El Colegio de Michoacán.)

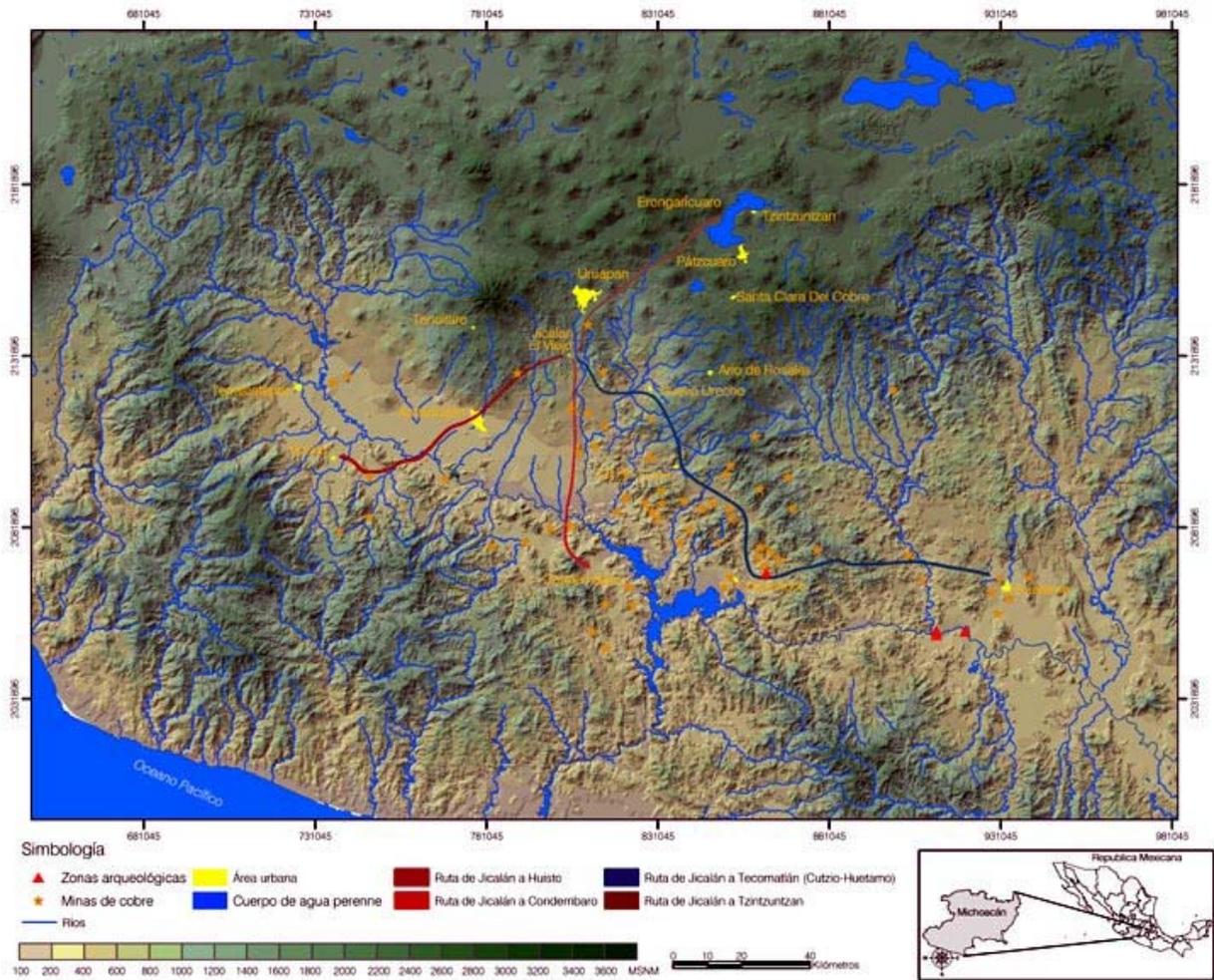


Figure 4. Map of Michoacán showing the mining routes mentioned in the Lienzo de Jicalán..

While in the *Relación de Michoacán* the Hotlands appear almost exclusively as an extraction zone for valuable natural resources that were exploited by the *Tarascan* rulers at Tzintzuntzan, the *Lienzo de Jicalán* emphasizes the antiquity of the area's occupation by *Náhuatl*-speakers claiming to be *Toltecs*, who had their own worldview and religion and, moreover, were absorbed into the *Tarascan* kingdom just a short time before the arrival of the Spanish. To a great extent, the visions of the past revealed in these two ethnohistorical documents (the *Relación* and the *Lienzo*), fulfilled the function of legitimizing certain rights. For this reason, they must be studied with great care and compared, as far as possible, with other written sources and, above all, with the results of archaeological research. After carrying out a detailed iconological and ethnohistorical analysis of this pictographic document, in early 2003 we initiated a project designed to survey, take an inventory and map the archaeological site of *Jicalán el Viejo*, which has been identified as the key locality represented in the history narrated in the *Lienzo* (Figure 5, shown below). The present report begins with a summary of the preliminary

results of our early fieldwork and finalizes with some reflections based on comparisons of the archaeological data recovered with available (ethno-)historical information.

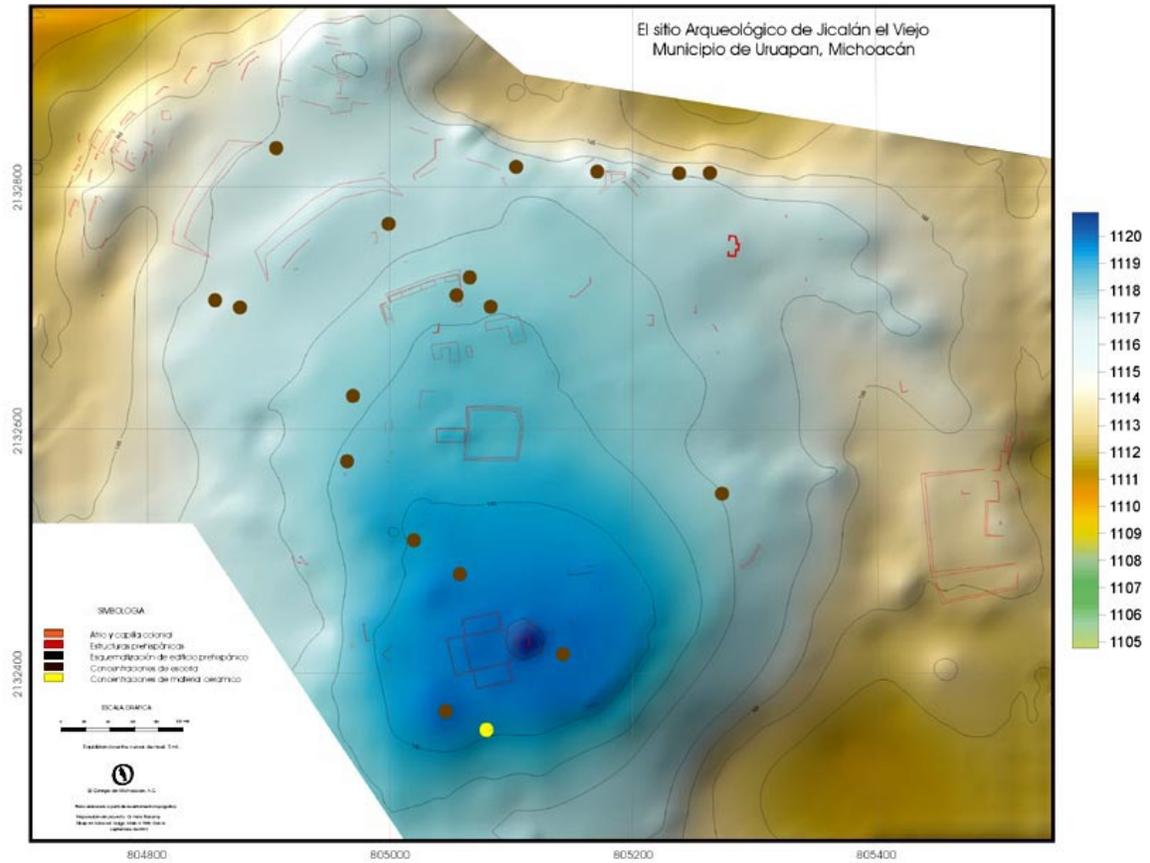


Figure 5. Map of the archaeological site of Jicalán el Viejo.



Figure 6. View of the pyramid of Jicalán el Viejo (facing south).

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The most notable architectural remains are found in the upper (center-south) area of the site and include a small, square, stepped pre-Hispanic pyramid ([Figure 6](#), shown above) measuring approximately 22 x 22 meters (72 x 72 feet), with a height of 5 m. (16.4 ft.). On one side of this pyramid, we discovered other remains. Though seriously deteriorated and barely visible, they seem to represent three structures arranged in the form of a **U** (each about 22 m. [72 ft.] long by 12 m. [39.4 ft.] wide). It seems probable that they formed one complex with the pyramid itself. In the structure located to the west, we found broken stone slabs and very small bone fragments that indicate burial sites. These materials had been strewn on the surface due to recent activity by plunderers ([Figure 7](#), shown below).



Figure 7. Evidence of recent activities by plunderers.

Some 175 m. (575 ft.) to the north but at a lower elevation, there is a 24 x 12 m. (78.7 x 39.4 ft.) elongated structure with an access on the eastern side that opens upon a large, almost square, open space (42 x 40 m. [137.8 x 131.2 ft.]) and is known locally as the "Temple". The form and size of this edifice, together with our discovery of large pieces of carved limestone that once formed part of a façade, certainly suggest that this was a small chapel complete with atrium ([Figure 8](#) and [Figure 9](#), shown below). This religious building was located in the very center of the site, on the elevated area that corresponds to the pre-Hispanic settlement, exactly where the main indigenous temples had once

stood, thus symbolizing the triumph of the Christian God over earlier autochthonous deities and revealing that the elevated area of the site continued to be dedicated to religious cults.



Figure 8. View of the chapel and atrium (facing south).



Figure 9. Inside view of the chapel (facing the atrium).

Though identifying the large structures mentioned above presented no great problem, there are numerous vestiges whose nature it is difficult to interpret without actual excavations. Perhaps 50 m. (164 ft.) north of the "Temple", still in the elevated zone but on a downward incline, we found another edifice that also appears to form a **U**, though it is not completely symmetrical. Its maximum width is 22 m. (72.2 ft.) and it has two extremities 12 and 17 m. (39.4 and 55.8 ft.) long, respectively, and about 7 m. (23 ft.) wide. To the east, there is another important building, this one in the form of an **L**, with extremities that measure as follows: 28 x 7 m. (92 x 23 ft.) and 21 x 11 m. (69 x 36 ft.), respectively. Unfortunately, in these two cases the remains are insufficient to determine if they are of Pre-Columbian or Colonial construction.

Barely 40 m. (131.2 ft.) to the north and still heading downwards, we found a man-made incline (ramp) 74 m. (242.8 ft.) in length that serves as an access to another terrace or small inclined plain, located at a lower level. At one end of the upper part of this incline we detected the remains of walls arranged in what appear to be habitations, four of which were about 10 x 4 m. (32.8 x 13.1 ft.), while the other two measured 17 x 4 m. (55.8 x 13.1 ft.), and 15 x 4 m. (49.2 x 13.1 ft.) respectively. The latter was located a few meters to the south and marked by the presence—both in its interior and exterior—of large amounts of slag from copper smelting. So far, this is the only place at the site where we have found this type of material in direct association with a structure.



Figure 10. Partial view of the main habitational complex (facing north).

A second incline, this one some 121 m. (397 ft.) long, was found 100 m. (328 ft.) to the northwest. It marks the boundary of a lower terrace. A third such ramp (96 m. or 315 ft. long) is located some 60 m. (197 ft.) further northwest, but at a somewhat lower

elevation. At short distances—perhaps 60-70 m. [197-230 ft.]—to the west, north, and northeast and still descending towards the northern edge of the platform, we identified several apparently inhabited terraces with remains of walls that formed rooms ([Figure 10](#), shown above, and [Figure 11](#), shown below).



Figure 11. View of a terrace wall of the main habitational complex (facing north).

This complex is the largest and most important of all, but the eastern end of the platform also revealed a significant zone of terraces with habitations showing the same features ([Figure 12](#)). A third, much smaller, compound is located on the center-north edge of the site. Our attention was drawn especially to these lower areas at Jicalán el Viejo, because of the presence there of petroglyphs, most of which seem to pertain to the style known as *maquettes* (Sp. *maquetas*), as they represent stairways, buildings and some type of well or, perhaps, springs and rivers ([Figure 13](#), shown below). Three of these stones bear geometrical designs, while three others have anthropomorphic images and one revealed an iconographic element in the form of a horseshoe ([Figure 14](#), shown below).



Figure 12. View of the habitational complex in the eastern part of the site.



Figure 13. Petroglyph with maquette motives (observe the stairways).

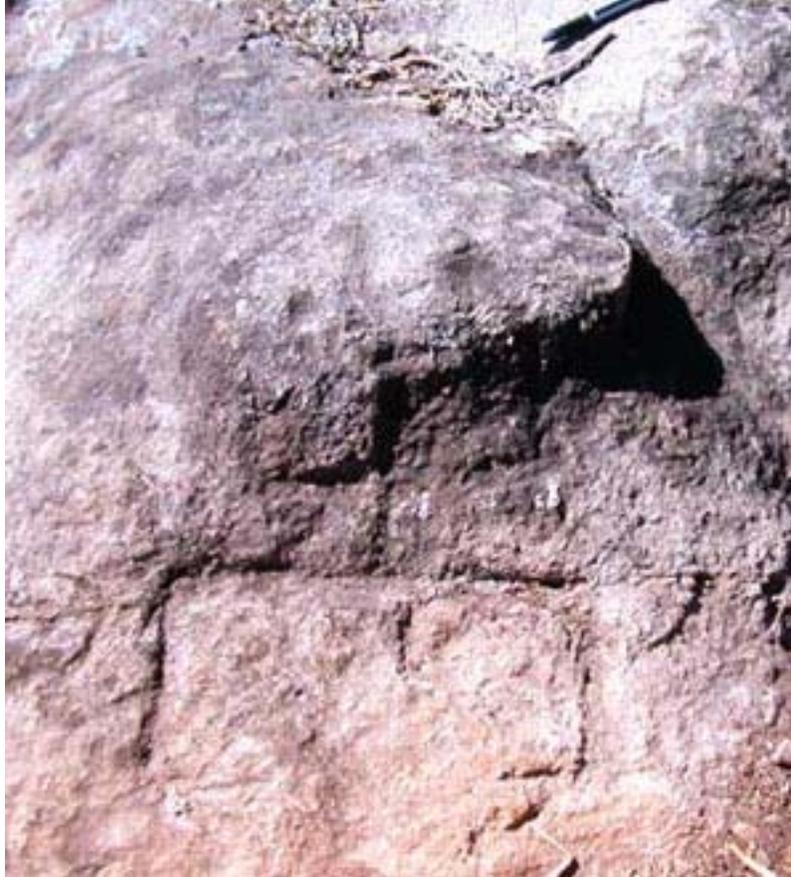


Figure 14. Petroglyph with anthropomorphic motive.

The site produced large quantities of lithic artifacts associated with milling or grinding: the typical *metates*, *manos*, *molcajetes* (three kinds of grinding stones, normally identified by their Spanish names), an axe and several peculiarly-shaped stones ([Figure 15](#), shown below). The latter are rather fine river rocks that may have been used for polishing. A fine, smooth stone somewhat larger than a typical *metate* but made from the same material, may also have served this purpose.



Figure 15. Selection of the lithic artifacts found in Jicalán el Viejo.

Among the most abundant artifacts were rectangular stones with round holes on each side, stones of a similar shape but flattened and with only three sides, also with holes, and round stones with small orifices (that do not perforate the stone), in the center or towards one end. Without discounting other possible uses, it is probable that many of these artifacts were used in copper-smelting or in elaborating painted gourds, two of the basic occupations of the inhabitants of Jicalán mentioned in the *Lienzo* and other

historical sources.² It also seems that various artifacts catalogued as "domestic utensils" were re-utilized for other purposes. One of the *metate*-type stones found at Jicalán has a square figure in the center and may have been used as a mold for producing axes or other copper utensils. The obsidian remains include small cores, prismatic blades, arrowheads, scrapers and chips, etc. In addition, two fragments of silex or quartz were found, one of which was a kind of ornament in the form of a flower petal. With respect to ceramics, it is worth noting that we found only fragments (sherds) that belong to a monochrome variety and clay spools. So far, we have found no diagnostic pieces that would allow us to propose a tentative date for the occupation of this site.

Jicalán also stands out because of the large deposits of slag found, especially, at high and middle elevations, but also near the small complex of structures in the north-northeast. The pieces of slag residue found at the site vary greatly in size, thickness and texture. Some samples are being analyzed by Blanca Maldonado (Pennsylvania State University) and compared with similar materials that she discovered at the archaeological site of *Santa Clara del Cobre*. Preliminary results suggest that the slag at Jicalán resulted from chalcopyrite processing and that the indigenous specialists there employed a highly-sophisticated, efficient reduction method.³ Future survey pits and excavations will provide additional information on the nature and development of the metallurgical activities that took place at this site. The detailed comparison of these results with findings from ongoing excavation projects at other smelting sites, such as the aforementioned *Santa Clara del Cobre* site in Michoacán and *El Manchón* in the *Sierra Madre* of Guerrero (an intriguing zone with only pre-Hispanic occupation), should prove very interesting.⁴

It seems likely that most of the agricultural fields tended by the folk at Jicalán were located in the terraced areas. The sources of water needed for farming existed in nearby, relatively accessible canyons to the north, where cultivation may also have taken place and other edible vegetable products could be gathered. Today, residents exploit waterholes located at the northern base of the platform, where there is a small lagoon that is not mentioned in Colonial-era sources. One final relevant aspect of this archaeological zone is its strategic location: it constitutes a natural fortress that is difficult to access and is protected by deep canyons, especially to the south and west

² For information on metallurgy, the reader may consult (among other publications), Dorothy Hosler, *The Sounds and Colors of Power: The Sacred Metallurgical Technology of Ancient West México* (Cambridge and London, MIT Press, 1994), and, "La tecnología de la metalurgia sagrada del occidente de México", *Arqueología Mexicana*, vol. V, no. 27:34-41, 1997; Dora M.K. de Grinberg, *Los Señores del Metal: Minería y metalurgia en Mesoamérica*, México, Consejo Nacional para la Cultura y las Artes, Pangea, 1990. On the art of painting on gourds ("*maque*" in Spanish), we recommend Francisco de P. León, *Los esmaltes de Uruapan*, México, Editorial Innovación, 1984 [1922]; Eva María Thiele, *El maque. Estudio histórico sobre un bello arte*, Morelia, Instituto Michoacano de Cultura/Casa de las Artesanías del Estado de Michoacán/Fondo para Actividades Sociales y Culturales de Michoacán, 1982. It is interesting to note that in the early 20th century *tepúshuta*, a limestone-dolomite that artisans used, and still use, in the *maque* process, was extracted from *Jicalán el Viejo* (F. de P. León, *op.cit.*, pp. 22-23).

³ Blanca Maldonado, pers. comm., 08/24/2004.

⁴ See Dorothy Hosler, "Excavations at the Copper Smelting Site of El Manchón, Guerrero, México", at: <http://www.famsi.org/reports/01058/index.html>, FAMSÍ website (February 6, 2004); and, "Nuevos datos sobre la producción de metal en el occidente en la época prehispánica", in Eduardo Williams (ed.), *Los bienes estratégicos en el antiguo occidente de México: Producción e intercambio*, El Colegio de Michoacán, Zamora, 2004, pp.335-353.

([Figure 16](#), shown below). We should also mention that it occupied a strategic position on the frontier between the Hotlands (to the south) and the *Sierra Tarasca* (to the north).

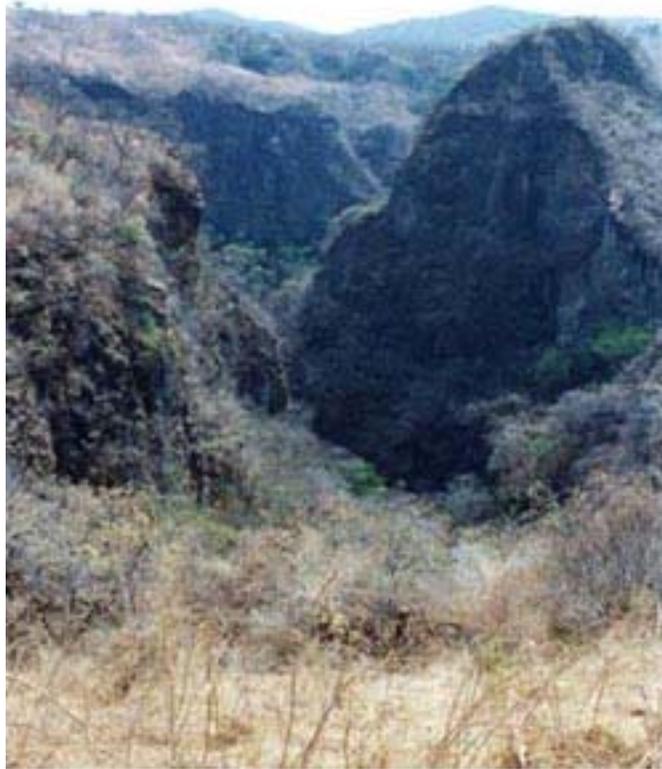


Figure 16. View of the canyon to the northwest of the archaeological site.

Final Comments

Though the findings discussed here are preliminary, we would like to present certain brief reflections based on our comparison of the *Lienzo de Jicalán* with the data obtained from our survey of the archaeological site. In addition to emphasizing Jicalán el Viejo's importance as a center of metallurgy, both sources seem to agree that no copper deposits existed in the immediate area. Therefore, minerals were probably transported from the southern area of the Hotlands, though this would contradict, or at least, oblige us to reformulate, the widely-held view that smelting centers and similar production units were always located close to mines. In the case of Jicalán, other factors may have outweighed the criteria of the proximity of raw materials: it was a well-ventilated, sheltered place located in a frontier area near large urban centers and

markets, with excellent fuels that permitted the development of high-quality smelting operations.

Our first approach to the archaeological zone of Jicalán has also served to revive an old debate on the origin and development of systems of communications and pictographic writing in Michoacán. So far, we have found only one series of petroglyphs at this site, and they show a relatively simple iconographic form, as most pieces belong to the *maquette* style. The ceramic material recovered seems designed exclusively for domestic use and shows no drawing or painting. There is no archaeological evidence to support the presence of the conventions of pictographic writing found in the *Lienzo de Jicalán* and other Colonial-era documents.

To this point, then, we have been able to establish that this smelting site was inhabited from at least the Late Post Classic period through most of the 16th century. Though the *Lienzo* contains no concrete dates, its portrayal of the occupation of Jicalán seems to refer to the same period. The document explicitly mentions the Tarascan expansion that took place in the second half of the 15th century and the founding of the Colonial town after the Spanish conquest. However, as the origins, migration and founding of this settlement occurred in a remote sacred past that goes back to the "beginning of time", it will be difficult to compare this aspect of the document with archaeological materials, because the latter normally provide distinct types of data. Still, it is important to attempt such comparisons because simply classifying "sacred histories" as myths or real events (depending on one's point of view) is clearly unsatisfactory.

Acknowledgements

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