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## Wandering River

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# Wandering River

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The principal problem facing Mesoamericanist Book of Mormon scholars in September, 2011, is the fact that there are two large rivers in the Chiapas, Tabasco, Guatemala area and either one of them - the Grijalva or the Usumacinta - could be the Sidon. Both have vocal cheering sections. Both have major tributaries whose headwaters originate less than 15 kilometers apart in the rugged Cuchumatanes massif near Huehuetenango. During most of their course, they are mutually exclusive, flowing in roughly parallel channels about 170 kilometers apart before coming together in confluence (in modern times) at Villahermosa, Tabasco, then emptying into the Gulf of Campeche which is the extreme southern portion of the Gulf of Mexico. The implications of choosing one or the other are profound - remains of the Mulekite and later Nephite capital Zarahemla will be found on the western banks of the right river. Successfully identifying which river is the Sidon will breathe new life into an entire sub-discipline of Book of Mormon studies (New World geographic correlations) that has lain relatively dormant for decades.

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One very important point to understand is that the lower Grijalva has changed course, moving eastward many times since the Book of Mormon era. When the Mulekites settled Zarahemla, the river that today we call the Grijalva actually flowed into the Tonalá, past the famous Olmec site of La Venta, and emptied into the Gulf of Mexico at Barra de Tonalá which is about 160 kilometers west of its current mouth at Frontera. This is a case where one cannot simply consult a contemporary map and begin drawing inferences because the lower Grijalva river as shown on modern maps is in a very different location than it was anciently. The image below is a screen capture from Google Earth. Click on the image to expand it to full size (the same holds true for all images in this blog).



Grijalva River with major tributary, the Selegua and Usumacinta River with major tributaries, the Chixoy/Negro, the Salinas and the Teapa as they appear on modern maps.

The Mexican State of Tabasco is the 2nd leading oil-producing state in the country, so the geology of the lower Grijalva area has been studied intensively. Tabasco, including the capital Villahermosa, experiences severe seasonal flooding in wet years, so the hydrology of the area has been investigated thoroughly. Tabasco is also the place where the Spanish Conquest of Mexico really began, so the history of the region is well-known. Prior to 1675, the lower Grijalva flowed past the important westernmost Maya site, Comalcalco, whose archaeology has been investigated by the Middle American Research Institute at Tulane and others. Consulting sources from all of these disciplines, one can re-construct the meanderings of the Grijalva river over the centuries. Before we go there, though, it is important to establish some naming conventions. The Grijalva river is named for the famous Spanish Conquistador Juan de Grijalva, precursor of Hernan Cortes. In April, 1518, Grijalva captained a flotilla of four ships that left Cuba and coasted along the the Mexican shores of Campeche, Tabasco, and Veracruz. Near the mouth of what is today the combined Grijalva/Usumacinta River, the exploring party was surprised to find a freshwater current flow so strong that they dipped sweet water from the ocean several leagues out to sea. They sailed upriver to what is today the Tabascan capital Villahermosa and exulted about how much larger this waterway was than the famed Guadalquivir, the only great navigable river in their native Spain. They named it Rio Grijalva. Continuing west for about 50 kilometers along the coast of Tabasco, they encountered a smaller, but still significant river near present day Paraiso that had two outlets. They named it Rio Dos Bocas. This double-mouthed river, known today in Tabasco as the Mezcalapa or Rio Grande de Chiapas, is the same river that flows through the Central Depression of Chiapas

- the one we call the Grijalva on modern maps. Residents of the Mexican State of Chiapas began calling their river the "Grijalva" about a hundred years ago, the name stuck, and the Tabascans have never quite forgiven them because Tabasco already had a perfectly good Rio Grijalva - the original one named in 1518 by Juan de Grijalva himself. So, in order to deal with the hydrological situation as it existed in pre-columbian times, this blog will use the term "Mezcalapa-Grijalva" to refer to the modern Grijalva, the term "Original Grijalva" to refer to the river Juan de Grijalva named after himself in 1518, and the term "Usumacinta" to refer to the modern Usumacinta that has a confluence with the Original Grijalva and its principal mouth at Frontera, Tabasco. This terminology is consistent with contemporary usage in Tabasco today.



Mezcalapa-Grijalva, Original Grijalva, and Usumacinta Rivers as they flowed at the time of Spanish Conquest (1518)

So, how did a very large river like the Mezcalapa-Grijalva do a 90 degree turn and suddenly flow 45 kilometers almost due east into the Original Grijalva as it does today? The answer, interestingly, has to do with pirates bounding the Spanish Main. During much of the Spanish Colonial era, English pirates backed by the British crown controlled the Isla del Carmen in the Laguna de Terminos, the large lagoon in the modern Mexican state of Campeche. These pirates preyed not only on Spanish treasure galleons, but also on Mexican coastal towns. The Mezcalapa-Grijalva with its two mouths was navigable and gave the marauding corsairs easy access to interior towns, including Cardenas, in Tabasco's rich Chontalpa region. The Tabascans finally got tired of pirate depredations. Knowing that the Mezcalapa-Grijalva had changed course many times, they took advantage of high water in the river in 1675 and engineered a diversion at the town of

Nueva Zealandia south of Cardenas and north of Huimanguillo. In Tabascan hydrology literature, this impressive feat of colonial civil engineering is called the "rompido de Nueva Zealandia." The old river bed, called "Rio Seco" or "Dry River" is easy to spot on Google Earth or Google Maps.



Google Maps image of Rio Seco, Cardenas and Nueva Zealandia, Tabasco

Hydrologists consider the Mezcalapa-Grijalva a young river, which means it carries enough sediment suspended in its waters to rapidly form sandbars and eventually change course. In the low-lying coastal plains of Tabasco, these diversions can be quite dramatic. Around AD 900, the Mezcalapa-Grijalva flowed past the important Maya site of Comalcalco just as it did at European contact. 700 years earlier, though, in approximately AD 200 (near the end of The Book of Mormon record) the Mezcalapa-Grijalva emptied into the Laguna de la Machona/Laguna El Carmen lagoon system where the Santa Ana River runs today, about 110 kilometers west of its current mouth at Frontera.



Google Earth image showing the Mezcalapa-Grijalva, Original Grijalva, and Usumacinta Rivers as they flowed ca. 200 AD

Even more dramatically, in approximately 500 BC, when the Jaredites were in severe decline headed toward collapse and the Mulekites had just recently appeared on the scene, the Mezcalapa-Grijalva flowed into the Tonalá River a full 160 kilometers west of its current mouth.

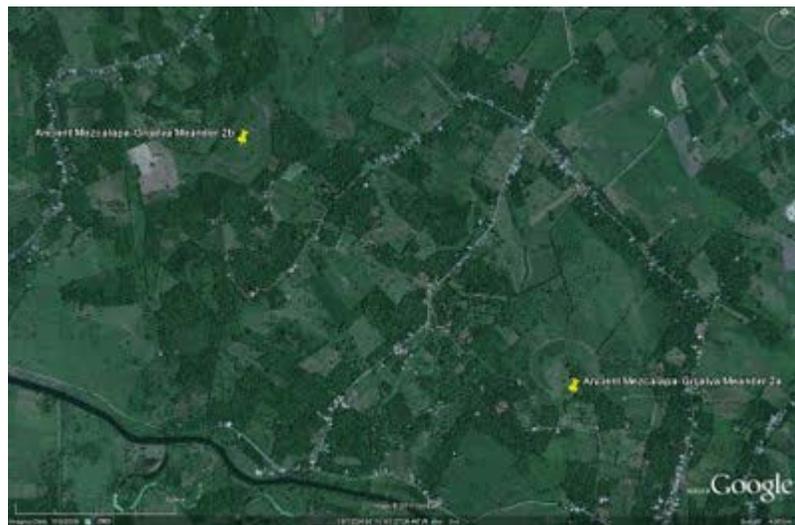


Mezcalapa-Grijalva, Original Grijalva and Usumacinta Rivers as they flowed in late Jaredite, early Mulekite times (ca. 500 BC)

Evidences of large changes in the course of the Mezcalapa-Grijalva river abound in the Tabascan coastal plain from the Tonalá River on the west to the Río Seco on the east. Ancient meanders in particular show up well in Google Earth's satellite imagery.



Google Earth placemarks show locations of ancient meanders where the Mezcalapa-Grijalva River flowed in previous millennia



Zoomed in view of 2 ancient Mezcalapa-Grijalva meanders. Click to enlarge.

And what of the Usumacinta? Has it changed course by dozens of kilometers in the last 2500 years as the Mezcalapa-Grijalva has? No. Hydrologists consider the Usumacinta a mature river where erosion and sediment deposition are more or less in equilibrium. In wet years, new distributaries sometimes form near the mouth, and the river sometimes cuts through the narrow neck of an oxbow meander, but in general the course of the Usumacinta has remained largely unchanged from Book of Mormon times until now.

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Rivers as large as the Mezcalapa-Grijalva and Usumacinta (the Usumacinta is the largest river in Mexico or Central America, and the 7th largest in the world measured by cubic meters of water discharged annually) have a handful of major tributaries and hundreds of smaller streams feeding into them. They will also frequently have multiple distributaries near their mouth. It is often useful, therefore, to visualize a river's entire drainage basin because natural ecosystems and human cultures tend to develop within drainage basins.



Mezcalapa-Grijalva (blue) and Usumacinta (red) Rivers shown as they were in Book of Mormon times with tributaries, distributaries and drainage basins (white)

So, we finally have a map we can use to compare and contrast the two viable candidates for the only New World river mentioned by name in the Book of Mormon - the Sidon. Will it be the feisty Mezcalapa-Grijalva or the more staid Usumacinta? Stay tuned. The water fight on the river is about to begin.