



EXCURSION C

Pre Congress Excursion

Two canyons through the Jurassic: Sedimentological and Paleontological records of Oaxaca, southern Mexico

February 1 to 3, 2018.

MAXIMUM NUMBER OF PARTICIPANTS: TWELVE (12)

EXCURSION FEE \$400 US DLLS.

Leaders:

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GENERAL INFORMATION ABOUT THE TRIP:

By Late Triassic time, a major plate reorganization produced the break-up of Pangea, which was the most recent supercontinent assembled on Earth. Because of its paleogeographic position along the nascent plate boundary between North and South America, the early Mesozoic tectonic history of Mexico was dominated by the development of major normal to strike-slip faults, which produced a complex crustal configuration characterized by subsiding basins bounded by exhuming basement highs. Voluminous, continental to marine sedimentary successions were accumulated in these basins during the Jurassic, representing a unique stratigraphic record related to the fragmentation of the western equatorial margin of this supercontinental mass.

This trip will provide an overview of two Early-Middle Jurassic basins exposed in the state of Oaxaca, southern Mexico. Observed outcrops are exposed along two amazing canyons and consist of alluvial-fluvial to marine deposits that were derived from different crustal blocks, reflecting the complex history of extension and exhumation of the continental

lithosphere during the Jurassic. Some of the stratigraphic units that will be observed on the field contain a variety of fossil flora that will stimulate the discussion on the paleoclimatic conditions under which the Jurassic successions were deposited. If time permits, the trip will also comprehend a visit to the archeological site of Cerro de las Minas, which is located just to the north of Huajuapán de León and represents the vestige of the Nuiñe culture of the Mixteca Baja area.

FEE 400 US DOLLARS (INCLUDES MEALS, LODGING, TRANSPORTATION FROM MEXICO CITY TO THE LOCALITIES. RETURN TRIP INCLUDES A FLIGHT FROM MEXICO CITY TO SAN LUIS POTOSÍ)

GENERAL ITINERARY:

<p>THURSDAY February 1st</p>	<p>The Otlaltepec Basin 7:00 AM. Trip departs from the Benito Juárez International Airport of Mexico City (Terminal 1, Door to be defined). Leave for Santo Domingo Tianguistengo. 13:00 PM. Arrive at the Magdalena Canyon, near the village of Santo Domingo Tianguistengo. Lunch. 14:00 PM. Participants will observe the stratigraphic record of the Otlaltepec Basin. Discussion on depositional environments, tectonic setting, and climatic conditions under which the sedimentation occurred. 17:00 PM. Leave for Huajuapán de León. 19:00 PM. Arrive at the García Peral Hotel. 20:00 PM. Dinner at the García Peral Hotel. The García Peral Hotel is located at the main square of Huajuapán de León, offering the possibility of taking an evening walk afterwards to visit the town.</p>
<p>FRIDAY February 2nd</p>	<p>The Tezoatlán Basin 8:00 AM. Breakfast at the García Peral Hotel. 9:00 AM. Leave for the Rosario Nuevo Canyon, near the rural village of Rosario Nuevo. 10:30 AM. Arriving at the Rosario Nuevo Canyon. Participants will observe in detail the stratigraphic record of the Tezoatlán Basin, which is composed of a basal volcanic unit named the Diquiyú Formation, overlain by conglomerate and sandstone of the Rosario and Cualác formation, which are in turn overlain by fine-grained deposits of the Tecocoyunca Group. A diversity of continental and marine depositional environments is easily recognizable in the succession. The succession also offers the occasion of observing an interesting variety of fossil flora that includes specimens with endemic traits mixed with cosmopolitan groups such as Bennettitales. Here we will discuss the taxonomic association and its</p>

	<p>implications for the paleoecological reconstruction of the region.</p> <p>14:00 PM. Lunch.</p> <p>15:00 PM. Short visit to the Regional Geological Museum of Rosario Nuevo.</p> <p>16:00 PM. Leave for the Cerro de las Minas archeological site.</p> <p>17:00 PM Visit of the Cerro de las Minas archeological site</p> <p>18:00 PM. Return to Huajuapán de León.</p> <p>18:15 PM. Arriving at Huajuapán de León. Participants have a couple of hours free for sightseeing, visiting the city market, the small botanical garden, and the handcraft shops.</p> <p>20:15 PM. Dinner at the García Peral Hotel.</p>
<p>SATURDAY February 3rd</p>	<p>8:00 AM. Breakfast at the García Peral Hotel.</p> <p>9:00 AM. Leave for Mexico City.</p> <p>15:00 PM Arrive at the Benito Juárez Airport of Mexico City.</p> <p>17:00 PM Flight to San Luis Potosí (flight will take about 1.30 hrs)</p>

GENERAL INFORMATION AND SPECIAL INSTRUCTIONS

During January and February, weather may change rapidly in southern Mexico from hot and dry to cold and windy. Therefore, trip participants should come prepared for ALL kinds of weather. Dress in layers that can be easily removed or added as weather conditions change. Participants should be prepared to hike moderate distances (up to one mile). Heavy-duty hiking boots are not necessary, but sturdy hiking boots should be worn.



Angular unconformity within the stratigraphic record of the Otlaltepec Basin. The lower stratigraphic unit is the Piedra Hueca Formation, which is composed of quartz-feldspathic conglomerate and sandstone. The upper stratigraphic unit is the Otlaltepec Formation that is composed of quartzitic sandstone, conglomerate and shale.



Outcrops of Rosario Nuevo Canyon. Zorrillo Formation (Middle Jurassic, Bajocian).



Invertebrate fossils, Taberna Formation (Middle Jurassic, Bathonian)



Fossil Wood, Araucariaceae Family with 8 meters length. Rosario formation (Early Jurassic, Toarcian).



Cerro de las Minas Archaeological zone. Nuiñe Culture, Oaxaca.