Paleontology; New Paleontology Study Findings Have Been Reported by Investigators at University of Texas Austin [Late Paleozoic (Late Mississippian-middle Permian) Sediment Provenance and Dispersal In Western Equatorial Pangea]

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2021 JUL 2 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Data detailed on Paleontology have been presented. According to news reporting originating from Austin, Texas, by VerticalNews correspondents, research stated, "Late Mississippian to middle Permian sediment-dispersal networks of regional to continental scale in western equatorial Pangea, depicted here in a series of paleogeographic maps, developed in response to temporally and spatially changing influences of climate, eustasy, and a continent-wide late Paleozoic orogenic system.

The orogenic system included linked Alleghanian, Ouachita-Marathon-Sonora collisional belts and associated foreland basin systems on Laurentia and magmatic arcs on Gondwana, intracratonic basement uplifts and basins of the Ancestral Rocky Mountains, flexural arches and intracratonic basins of the US midcontinent region, and basins and uplifts of the southwestern Laurentian transcurrent continental margin."

Financial supporters for this research include UTChron Laboratory, Chevron (Gulf) Centennial Professorship, Quantitative Clastics Laboratory at the **Bureau of Economic Geology**, the University of Texas at Austin.

Our news editors obtained a quote from the research from the University of Texas Austin, "Consideration of new and published U-Pb detrital-zircon datasets permits delineation of Laurentian sediment-dispersal networks of the developing supercontinent. The Transcontinental Arch deflected Late Mississippian transcontinental rivers with Alleghanian headwaters toward the southern midcontinent and nascent, deep-marine foreland basins along the Ouachita collision orogen. Pennsylvanian rivers likewise headed in the Alleghanian Orogen, transporting sediment southwest across the midcontinent and along the Alleghanian foreland basin to empty into the Arkoma Basin and Fort Worth Basin, which also received voluminous sediment from Gondwana and the Ouachita Orogen. Concomitantly, major growth of Ancestral Rocky Mountains uplifts yielded basement-derived sediment, much of which was retained in local flexural basins. Increased aridity drove ascendant eolian transport in early Permian (Artinskian) time, just as lowstand desiccation of a midcontinent seaway exposed unconsolidated silt and sand derived from eastern, western, and southern sources in an extensive interior desert sink. Eolian transport within the interior desert further mixed and deflated the already-cosmopolitan sediment, pushing it southwest toward the Permian Basin and westward beyond the Ancestral Rocky Mountains. Intercepted by newly developed monsoonal circulation, the deflated sediment came to reside in erg systems along the western marine margin of Pangea. Subtropical Pennsylvanian transcontinental fluvial networks were similar to those of modern big river systems of the eastern and midcontinent United States that drain toward the Gulf of Mexico."

According to the news editors, the research concluded: "In contrast, Permian drainage networks yielding sediment to a continental desert more resembled Pleistocene sediment routes of the Arabian Plate; there, intermittent wadis draining western rift highlands and big rivers of the Mesopotamian foreland contribute sediment to Arabian eolian sands via zonal and monsoonal surface winds to create widespread sand seas of mixed Eurasian and Arabian provenance."

This research has been peer-reviewed.

For more information on this research see: Late Paleozoic (Late Mississippian-middle Permian) Sediment Provenance and Dispersal In Western Equatorial Pangea. Palaeogeography Palaeoclimatology Palaeoecology, 2021;572. Palaeogeography Palaeoclimatology Palaeoecology can be contacted at: Elsevier, Radarweg 29, 1043 Nx Amsterdam, Netherlands.

The news editors report that additional information may be obtained by contacting Timothy F. Lawton, University of Texas Austin, Jackson School of Geosciences, Bur Econ Geol, Austin, TX 78758, United States. Additional authors for this research include Li Liu, Ronald C. Blakey and Daniel F. Stockli.

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