ed from the Two Medicine. The structures, evident as sand-filled tubes in an abandoned levee deposit, may have been overlooked because of their superficial resemblance to inorganic muds. A thorough morphological description of the structures and assessment of their palaeoenvironmental context support their trace fossil affinity. They are thus worthy of attention from vertebrate paleontologists because of their probable relation to mammalian behavior during the Campanian in this area.

A mammalian origin is interpreted on the basis of their dimensions, complexity, and facies occurrence. The structures have extremely regular cross-sectional dimensions (5.8 ± 0.8 cm x 9.0 ± 1.2 cm; n = 17), are flattened parallel to bedding, straight to curved with rounded terminations, horizontally oriented, restricted to thin zones, and branch in places. Moreover, one specimen shows an enlarged junction between three branches, a typical characteristic of a multibranch burrow system. Minimum and maximum sizes of the trace makers can be inferred from cross-sectional areas of the burrows (35-60 cm²) and pouch-like protrusions (about 2.5 x 4.5 x 8.5 cm) lateral to main burrow shafts. This may reflect approximate body sizes.

Previously reported body fossils of possible mammalian trace makers in the Two Medicine include multituberculates, such as _Clemmys judithae_: testing of the hypothesis presented here should thus include looking for co-occurrences of mammalian body fossils with these structures. Identification of such trace fossils should add considerably to better understanding relations of mammals to Two Medicine paleoecosystems.

**PHYLOGENETIC INTEGRITY OF ASIATIC DOCODONTINES**

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There are five genera whose attribution to Docodonta is unquestionable: _Borealestes_, _Haldianodon_, _Docodon_, _Simopsodon_, and _Tegetherion_, all except the latter, are Eoanercomorph in distribution. _Tegetherion_ from the Late Jurassic of Mongolia is the only Asiatic docodont described so far. We announce the discovery of another Asiatic docodont taxon, based on a single lower molar from the Middle Jurassic (Callovian) Balabanis Sirti at Takshumur, northern Mongolia. Depression, Kirghizia. The new taxon exhibits the typical structure of a docodont lower molar with the main cusp connected by a cuspule to lingual cusps (c and g) and mesial cusp b (cusp nomenclature after Butler). It is primitive in retaining well-developed cuspules d and d-f, and variation in the cusp b-e complex of post-Gondwana docodonts. The new taxon, named _Tegetherion_ sp., is similar to _Simopsodon_ from the Middle Jurassic of England to _Tegetherion_ is due to convergent development of a "pseudoaminerol" and reduction of distal cusp.

**DINOSAUR REMAINS FROM THE PRINCIPALITY OF ASTURIAS, SPAIN**

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The Upper Jurassic (Kimmeridgian) strata of Asturias appear in the coastal cliffs between Gijón and Ribadesella have traditionally provided numerous and well preserved footprints of sauropods and ornithischian dinosaurs, that have revealed the presence of various lineages. Because seismologically the conditions that allow for the preservation of footprints hinder the good fossilization of bone remains, the material made known has been restricted to the trace fossils. Data from the ichnites refer to the Fluvial Vega Formation and del万人 Lozare Formation of Asturias there was only one reference until now of dinosaur remains: one therocephalid. From the rockpale of the high coastal cliffs come the materials that are announced here.

Within Thropods there are several teeth with primitive characters such as the presence of denticle in the mesial and distal carinae, high crown, absence of constriction between the crown and the root, and subequal denticles on both carinae. Two other teeth have a constriction in their base, with sinuous distal carinae and mesial carinae restricted only to their apical third, characters that suggest affinities with Dromaeosauridae. An incomplete anterior caudal vertebrae big size is similar to the caudals of _Megalosaurus_ although without diagnostic characters. The strontium materials include some large caudal vertebrae (one of which could belong to _Camarasaurus_); a tooth damaged in its mesial and distal borders, of "peg-like" appearance, with a wear facet that recalls that present in Diplodocidae, although it has been considered of brachiosaurid type; a tooth with the typical "spoon-like" morphology and cingulum of _Camarasaurus_, and an indeterminate caudal vertebrae. The tooth of _Camarasaurus_ repre-

A PREPARATOR'S DREAM: SOFTENING AND DISAGGREGATION OF SANDSTONE WITH DIMETHYLSULFOXIDE (DMSO)

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Quartz, the most resistant of commonly occurring minerals, is the major component of sandstones. Fossils in sandstones can be some of the more difficult specimens to prepare. If the sandstone is well cemented, complete separation from the bone may be extremely difficult. Often the bone, mineralized or not, is softer than the sandstone matrix. When geologists were searching for shocked quartz they serendipitously noted that DMSO, a common chemical reagent, caused the mineral kaolinite surrounding the quartz grains to expand and separate the grains. This disaggregation response of sandstones to DMSO has been tested on Morion, Kaiparowits, and Navajo sandstones with varying degrees of success. It has been shown to work well on a large percentage of numerous sandstones sampled. DMSO works on phos-

**DINOSAUR ONTOGENY: THE CASE OF LOURINHANSAURUS (LATE JURASSIC, PORTUGAL)**

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The Late Jurassic, Lourinhã Formation/Seental Unit is very rich in dinosaur remains. One of the major findings was that of dinosaur nestings at Pinhão. These nestings yielded dozens of dinosaur eggs, some still containing embryo's bones. All this material allowed the study of onomatopoeia, anatomy and growth rates of the embryos, as well as the recognition of some key morphological characters that clearly point out to a carnivorous theropod. Which one? This question is most interesting. It could likely be ascribed to one of the already known theropods from the same formation. Let us recall that several Late Jurassic theropod genera could be present: _Ceratosaurus_, _Tetrasaurus_ and _Lourinhansaurs__. The last one could be a likely "candidate": the holotype of _Lourinhansaurs__ antunesi, a partial skeleton, has been found just 7 km far from the nesting site. Sixty preservarable vertebral centrum from embryos were compared with those from _Lourinhansaurs_ and _Allosaurus_. Of course, ontogenetic differenci-

TRIPODS AND DERRICKS, REMOTE CONTROLLED PLANES AND BLIMP: VERTEBRATE PALEONTOLOGICAL PHOTODOCUMENTATION IN THE WEST

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Awesome beauty and phenomenal natural resources drew early explorers and scientists to the American West in the 1800s. F.V. Hayden, C. King, and O.C. Marsh all employed photographers on their expeditions to utilize state-of-the-art photography techniques to create monoscopic and stereoscopic images of unique western resources. As photography evolved, so did its utility for paleontological documentation. The value of photographing fossil resources from above was realized in the 1930s. At the Howe Quarry in Wyoming, American Museum of Natural History crews applied an innovative approach to low-level aerial photograph by using a derrick to suspend cameraman R.T. Bird in a barrel 10 meters above the dinosaur bonebed.

Today, paleontological resources in the West continue to be documented utilizing the latest photographic methods. These techniques include close-range photogrammetry where the camera is held several centimeters above the subject or mounted on tripods of various heights (e.g., 175 cm, 3.5 m, and 12 m). Photography from low-flying utilizers remote con-