

Doña Ana Mountains in a shale bed ~ 15 m below the top of the Shalem Colony Formation and only a few meters below fusulinacean packstones of the *Pseudoschwagerina* zone. This assemblage occurs in the upper part of a 2.7-m-thick shale interval, which is overlain by a 0.4-m-thick, fossiliferous limestone bed containing brachiopods and gastropods. This assemblage consists of brachiopods (*Squamaria moorei?* Muir-Wood & Cooper, *Derbyia* sp., *Composita cracens* Cooper & Grant, *Crurithyris tumibilis* Cooper & Grant), bivalves (*Septimyalina burmai* Newell), nautiloids (Pseudorthoceratidae), gastropods (*Tychonia inexpectata* Kues, *Euphemites* sp.) and bryozoans (*Protoretrepora* sp.). The fauna is dominated by *S. moorei?* and bryozoans. The *S. moorei?* are in various states of preservation, including specimens more complete than previously reported from the Robledo Mountains. The Shalem Colony Formation assemblage is indicative of shallow marine, shelf waters with enough energy to move large brachiopod shells. The macroinvertebrate assemblage from the Shalem Colony Formation is less diverse than, but similar in composition and relative abundances to, the more extensive assemblages known from the stratigraphically higher Robledo Mountains Formation in the Robledo Mountains. This suggests chrono-faunal stability of the invertebrate macrofauna during much of Hueco Group deposition on the Early Permian Robledo shelf of southern New Mexico.

THE POSTCRANIAL SKELETON OF REVUOLTOSAURUS CALLENDERI (ARCHOSAURIA: CRUROTARSI) FROM THE UPPER TRIASSIC BULL CANYON FORMATION OF EAST-CENTRAL NEW MEXICO, *Adrian P. Hunt*, ahunt@nmmnh.state.nm.us, and *Spencer G. Lucas*, New Mexico Museum of Natural History and Science, 1801 Mountain Road NW, Albuquerque, New Mexico 87104

In 1986 field parties collected an extensive vertebrate fauna from the Late Triassic (Revueltian lvf: early Norian) Bull Canyon Formation of east-central New Mexico. These included teeth assigned to *Revueltosaurus callenderi*, which was considered to represent an ?ornithischian dinosaur. Other associated remains included a partial skeleton (NMMNH P-16932) and other specimens of an undescribed armored crurotarsan. Preparation of dentulous cranial fragments of NMMNH P-16932 has shown that this animal is *Revueltosaurus* and that it is not an ornithischian dinosaur.

Revueltosaurus is a crurotarsan distinguished by wide rectangular paramedian osteoderms with an irregular pattern of deep pits and no lateral osteoderms, a wide tarsus that has a small astragalus medial process and corresponding medial calcaneal concavity, and teeth that are remarkably convergent on ornithischians.

Many partial osteoderms and one complete osteoderm are in the collection. The complete osteoderm is rectangular and is 64 mm long, 33 mm wide, and 5 mm thick. The dorsal surface is covered by an irregular pattern of deep, rounded pits. The medial end of the osteoderm is thickened. The osteoderm thins at its lateral and anterior margins. A smooth lapet runs along the anterior margin and broadens near the lateral margin.

This taxon represents a crurotarsan because it

possesses: (1) a hemicylindrical calcaneal condyle for the fibula; (2) a flexed tibial facet on astragalus; (3) a single articulation between astragalus and calcaneum; and (4) single paramedian osteoderm per vertebra. Further, it is assignable to a clade containing derived crurotarsans on the basis of an advanced "crocodil-normal" tarsus.

A SKULL OF THE PHYTOSAUR PSEUDOPALATUS FROM THE UPPER TRIASSIC (LATE CARNIAN) SANTA ROSA FORMATION OF CENTRAL NEW MEXICO, *Adrian P. Hunt*, ahunt@nmmnh.state.nm.us, and *Spencer G. Lucas*, New Mexico Museum of Natural History and Science, 1801 Mountain Road NW, Albuquerque, New Mexico 87104

Pseudopalatus is a common genus of Late Triassic phytosaur that has biochronologic significance; its an index taxon for the early Norian Revueltian lvf. A skull from the late Carnian of central New Mexico is the first occurrence of this genus before the Norian.

NMMNH P-25745 is from NMMNH locality 3108, which is the type locality of *Typhothorax antiquum*. This locality is in the Tres Lagunas Member of the Santa Rosa Formation in Santa Fe County. NMMNH P-25745 is a partial skull represented by the region posterior to the mid point of the orbits. The anterior margin slopes anteriorly such that the lateral temporal fenestrae are preserved on both sides. The skull is slightly flattened dorsoventrally. NMMNH P-25745 can be assigned to *Pseudopalatus* on the basis of: possessing a moderately wide postorbital squamosal bar, supratemporal fenestrae that are short and narrow in dorsal view with narrow anterior margins, and a parietal-supraoccipital complex that has an inverted U shape.

This is the first occurrence of *Pseudopalatus* before the beginning of the Norian. This provides evidence for a refinement of the robust biochronology of the Late Triassic based on land vertebrate biochrons.

THE MICROVERTEBRATE FAUNA OF SHARK TOOTH HILL, REDONDA FORMATION (LATE TRIASSIC:APACHEAN), QUAY COUNTY, NEW MEXICO, *Andrew B. Heckert*, aheckert@nmmnh.state.nm.us, *Spencer G. Lucas*, and *Adrian P. Hunt*, New Mexico Museum of Natural History and Science, 1801 Mountain Road NW, Albuquerque, New Mexico 87104

The Upper Triassic Redonda Formation in east-central New Mexico consists of fluvial, lacustrine, and lacustrine-margin strata deposited during latest Triassic time. The macrovertebrate body fossil record of the formation is understudied, but known to include the redfieldiids *Cionichthys* and *Synorichthys stewarti*, the semi-onotids *Semionotus* and cf. *Hemicalypterus*, the lungfish *Arganodus*, an indeterminate coelacanth, the temnospondyl *Apachesaurus gregorii*, a large cynodont, the archosauromorph *Vancleavea*, the phytosaur *Redondasaurus*, the aetosaur *Redondasuchus*, a giant sphenosuchian, and possible theropod dinosaurs. The microvertebrate fauna is essentially unstudied, but is known to include a broadly similar fish fauna. Screenwashing for microvertebrates at Shark

Tooth Hill near San Jon yielded a microvertebrate fauna composed of redfieldiid and semi-onotid fish, indeterminate reptiles, several morphotypes of archosauriform teeth, small phytosaurs, and possible ornithischians. Chondrichthyans are conspicuously absent. Many of the archosauriform tooth morphotypes are known from much older (Adamian) taxa, and thus are not age-diagnostic. The microvertebrates do, however, provide some insight into the small-bodied fauna of the Redonda Formation, which appears to have been dominated by small archosauriforms. The putative ornithischian teeth, while fragmentary, constitute the only record of ornithischian body fossils in the Redonda Formation. The diversity from this preliminary sample hints at a large microvertebrate fauna that remains largely undiscovered, and should spur additional interest in the microvertebrate record of the Redonda Formation. Indeed, the Redonda Formation is the most fossiliferous stratigraphic unit of latest Triassic age in western North America, and is clearly the key to understanding latest Triassic vertebrate evolution.

COPROLITES AND COLOLITES FROM THE LATE TRIASSIC THEROPOD DINOSAUR, COELOPHYSIS BAURI, WHITAKER QUARRY, RIO ARRIBA COUNTY, NEW MEXICO, *Larry F. Rinehart*, rinehart@nmmnh.state.nm.us, *Adrian P. Hunt*, *Spencer G. Lucas*, and *Andrew B. Heckert*, New Mexico Museum of Natural History and Science, 1801 Mountain Road NW, Albuquerque, New Mexico 87104

New Mexico Museum of Natural History's Whitaker (*Coelophysis*) Quarry block (C-8-82) from the Apachean-aged Rock Point Formation of the Chinle Group contains abundant fossils of *Coelophysis bauri*, non-dinosaurian tetrapods, fish, and invertebrates. At least three specimens of *C. bauri* have fossil fecal material directly associated with articulated skeletal material. These specimens apparently include material retained within the posterior intestine (cololites) as well as evacuated material (coprolites). The cololites and coprolites occur between the ischia and the proximal caudal vertebrae, and posteroventral to this area. Most of the coprolite material is formless and was apparently somewhat mixed with still-wet mud and silt at or near the time of death. In P-44801, a small amount of coprolite material contains sparse bone fragments. The cololite and/or coprolite material associated with P-42352 is enigmatic; it consists of small bone fragments in a densely packed matrix of small (~1 mm long by ~0.1 mm diameter), rod-shaped material. The coprolitic material associated with P-44552 is copious, formless, and rich in bone fragments. Bone fragments prepared from this material include a distal ulna, an ulnare, and partial phalanges that apparently pertain to juvenile *Coelophysis* and provide further evidence of cannibalism in this dinosaur. Additional material appears to include wrist bones, long-bone and rib fragments, and thin sheets similar to skull or pelvic bone. Few examples of close associations between fecal material and vertebrate fossils are known, and this is a unique occurrence for a dinosaur.