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Introduction

Established in 1966, Clayton Lake State Park is a dam, lake, and recreation area in the valley of Seneca (also known as Cieneguilla) Creek 11 mi northwest of Clayton, New Mexico (Fig. 1). Cretaceous sedimentary rocks and upper Cenozoic alluvium and basalt crop out in the state park (Baldwin and Muehlberger, 1959; Foster, 1983). In 1982, Clayton Lake State Park took on paleontological significance when the existence of nearly 500 dinosaur footprints at the dam spillway was brought to scientific attention. Subsequent descriptions of this dinosaur ichnofauna (Gillette and Thomas, 1983, 1985; Gillette et al., 1985; Thomas and Gillette, 1985) identified the track-bearing horizon as the Dakota Sandstone of Aptian–Albian (Early Cretaceous) age. In this paper, we clarify the rock-stratigraphic and biostratigraphic relationships of the Cretaceous strata at Clayton Lake with particular emphasis on the dinosaur-footprint-bearing strata.

Stratigraphy

Stratigraphic data for Clayton Lake State Park were provided by Baldwin and Muehlberger (1959) and Gillette and Thomas (1985). In their geologic mapping of Union County (scale 1:125,000), Baldwin and Muehlberger (1959, pl. 1a) assigned the Cretaceous bedrock around Clayton Lake to the Dakota Formation. Gillette and Thomas (1985, fig. 5) accepted this stratigraphic designation and presented a measured stratigraphic section of the "principal strata of the Dakota Formation exposed at the spillway at Clayton Lake State Park."

Our measured stratigraphic sections at Clayton Lake (Tables 1, 2) indicate that five distinct rock-stratigraphic units are exposed in the state park (Fig. 2). Based on lithology alone, these five units can be correlated with Cretaceous strata in east-central New Mexico (Harding, San Miguel, Guadalupe, and Quay Counties) with confidence. Thus, the light-gray shale below the dam spillway (Fig. 2, sec. B, unit 1; Fig. 3A) resembles the Tucumcari Shale of east-central New Mexico. The 12.8 m of grayish orange, trough-crossbedded and ripple-laminated, quartzose sandstone that overlie this shale and thus floor the lower part of the dam spillway (Fig. 2, sec. B, unit 2; Fig. 3, B–D) are remarkably similar to the fluvio-deltaic Mesa Rica Sandstone farther south. The lowest of three stratigraphic horizons that contain dinosaur footprints is near the top of this sandstone (Gillette and Thomas, 1985, fig. 5). The upper two dinosaur-footprint horizons occur in a thin sequence (about 4 m thick) of interbedded silty shale, shaly siltstone, and quartzose sandstone that is predominantly gray (Fig. 2, sec. B, units 3–13; Fig. 3E–F) and differs little from the Pajarito Shale in east-central New Mexico. On the south shore of the lake, these strata (Fig. 2, sec. A, units 1–11; Fig. 3G) are overlain by 22.5 m of quartzose sandstone that is mostly yellowish orange and intensively bioturbated (Fig. 2, sec. A, units 12–15; Fig. 3G). This sandstone unit corresponds well with the Dakota Sandstone as used in a restricted sense by Wanek (1962) and Lucas and Kues (1985) in east-central New Mexico. The gray shale above this unit south of Clayton Lake (Fig. 2, sec. A, unit 16; Fig. 3G–H) resembles the Graneros Shale, an Upper Cretaceous marine unit present above the Dakota Sandstone throughout Union County (Baldwin and Muehlberger, 1959; Kauffman et al., 1969). Upper Cenozoic calcareous sandstone truncates the Graneros Shale at Clayton Lake (Fig. 2, sec. A, unit 17).

Foraminifera from the units at Clayton Lake here correlated with the Tucumcari Shale and Graneros Shale support these stratigraphic correlations (see discussion below). However, there are two other approaches to the rock-stratigraphic nomenclature of the Cretaceous strata at Clayton Lake that should be considered.

First, use of the term Dakota Sandstone in a broad sense (as a group) to include the Mesa Rica Sandstone and Pajarito Shale as lower and middle units of a tripartite Dakota is plausible, as used in San Miguel County by Jacka and Brand (1972), Gilbert and Asquith (1976), Bejnar and Lessard (1976), and Mateer (1985). We, however, oppose this broad usage of the term Dakota in northeastern New Mexico because: 1) the Mesa Rica and Pajarito are lithologically dis-

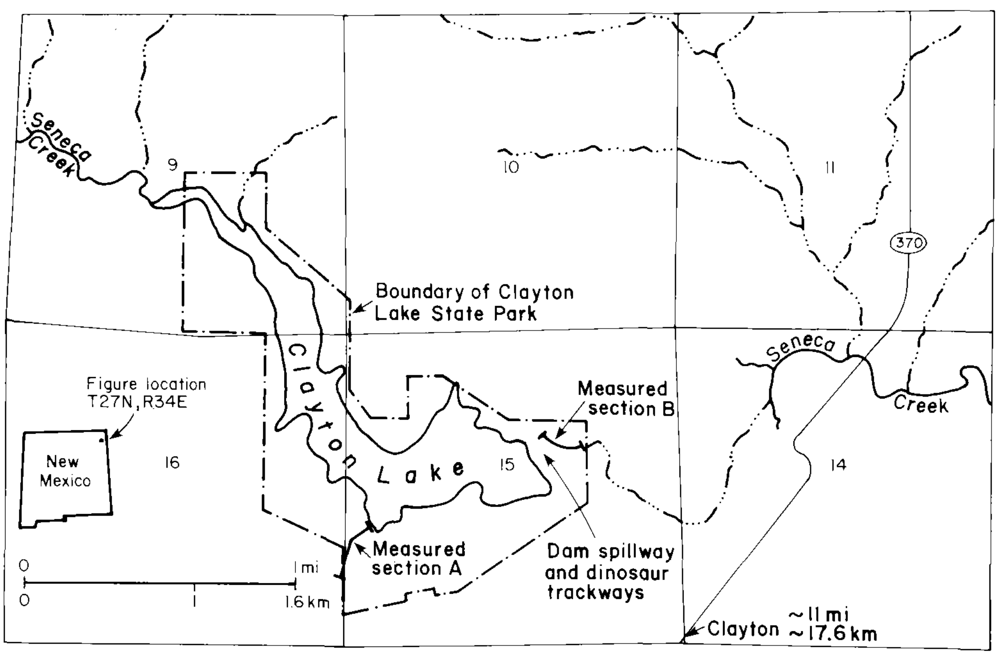

FIGURE 1—Map of Clayton Lake and vicinity showing locations of measured stratigraphic sections (Fig. 2; Tables 1 and 2) and dinosaur trackways.

tinct, widely exposed, and mappable units and; 2) the late Albian Mesa Rica Sandstone antedates and thus is not homotaxial with the Cenomanian Dakota Sandstone of northwestern New Mexico (Peterson and Kirk, 1977; Molenaar, 1983), contrary to a correlation proposed by Scott (1970).

Second, the term Purgatoire Formation was applied by Baldwin and Muehlberger (1959) throughout Union County to the strata at Clayton Lake we correlate with the Tucumcari Shale. We accept Baldwin and Muehlberger's (1959) usage of the term Purgatoire and thus recognize the oldest Cretaceous strata exposed at Clayton Lake as the Glencairn Shale, the upper member of the Purgatoire, and the equivalent of the Tucumcari Shale in northeastern New Mexico, southeastern Colorado, and western Oklahoma (Scott, 1970). The strata above the Purgatoire at Clayton Lake thus could be called Dakota (Baldwin and Muehlberger, 1959) or Mesa Rica, Pajarito, and Dakota (this paper) overlain by Graneros Shale.

Clearly, the alternative nomenclatures applicable to the Cretaceous strata at Clayton Lake indicate a need to clarify the usage of the terms Purgatoire and Dakota in northeastern New Mexico. Currently we prefer restriction of the term Dakota to the marine sandstone immediately below the Graneros Shale, but we recognize that the problems of Dakota terminology in the northeastern portion of New Mexico are complex, and their complete resolution is beyond the scope of this paper. Similarly, we apply the name Glencairn Shale Member of the Purgatoire Formation to the oldest Cretaceous strata exposed at Clayton Lake, recognizing its equivalence to the Tucumcari Shale of east-central New Mexico and, therefore, the redundancy of the names Tucumcari and Glencairn. The important point is that whichever names are applied to the dinosaur-track-bearing strata at Clayton Lake these strata are equivalent to the units called Mesa Rica Sandstone and Pajarito Shale in east-central New Mexico.

Biostratigraphy

Invertebrate microfossils (principally Foraminifera and Ostracoda) and/or megafossils (Mollusca) indicate that the Glencairn Shale and its equivalent, the Tucumcari Shale, are late Albian in age, correlatives of the Duck Creek Formation of the Washita Group of western Texas (Scott, 1970; Kietzke, 1985; Kues et al., 1985). A sample of the Glencairn Shale from Clayton Lake contained a small assemblage of Albian arenaceous Foraminifera. Characteristic species in this assemblage include *Ammobaculoides plummerae, A. ?phaulus, Ammodiscus ganitinus, Ammobaculites subcretaceus, Quinqueloculina nanna, Reophax* sp., *Dentalina* cf. *D. cylindroides,* and *Nodosaria* sp. These are Albian taxa known from the Kiowa Shale of Kansas (Loeblich and Tappan, 1950), the Duck Creek Formation of Texas (Tappan, 1943), and/or the Tucumcari Shale of east-central New Mexico (Brooks, 1959; Kietzke, 1985).

Similar microfossil and megafossil evidence indicates that the Graneros Shale of northeastern New Mexico and adjacent areas is of early Cenomanian age (Kauffman et al., 1969, 1977; Cobban, 1984). At Clayton Lake a sample of the Graneros Shale contained an assemblage of arenaceous Foraminifera dominated by *Bigenerina hastata, Haplophragmium arenatus, Trochammina* sp., *Heterohelix globulosa,* and *Guembelitria harrisi.* Lamb (1968, table 1) reported these taxa from the Graneros Shale of the San Juan Basin of northwestern New Mexico and southwestern Colorado.

Although Scott (1970) considered the Mesa Rica Sandstone to be primarily of Cenomanian age, the presence of the index ammonoid, *Mortoniceras equidistans,* in the Mesa Rica in Guadalupe County indicates that the lower part of this unit is middle late Albian (Kues et al., 1985). Therefore, marine invertebrates from subjacent and superjacent stratigraphic units bracket the age of the uppermost Mesa Rica Sandstone and the Pajarito Shale as latest Albian or earliest Cenomanian. A more exact age determination for these strata cannot be made from current evidence.

Bejnar and Lessard (1976, p. 161) listed the following taxa of spores and palynomorphs from their "Middle Shale Unit" of the Dakota Group (= Pajarito Shale) in San Miguel County: *Cicatricosisporites* cf. *C. magnus, C. dorogensis, Lycopodiacidites* sp., *Dictophyllidites* sp., *Cyathidites* sp., *Alisporites* sp., and *Schizocystia* cf. *S. laevigata.* They concluded that "the overlapping ranges of the pollen and spores from

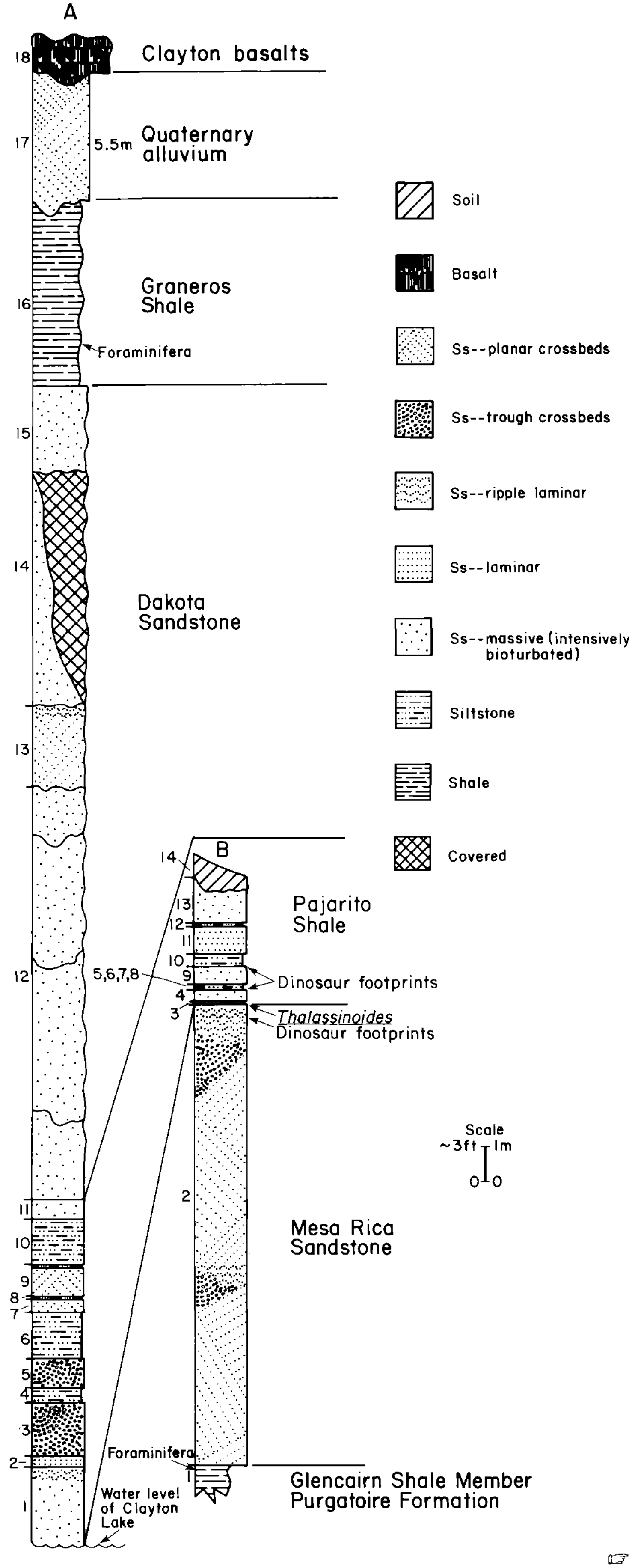

FIGURE 2—Measured stratigraphic sections at Clayton Lake. See Fig. 1 for locations of sections and Tables 1 and 2 for descriptions of lithologic units.

the Middle Shale Unit indicate an upper Lower Cretaceous age (either Aptian or Albian) for the unit" (Bejnar and Lessard, 1976, p. 161). However, examination of more recent studies of Early Cretaceous spores and palynomorphs (e.g., Srivastava, 1981; Tschudy et al., 1984) suggests that these taxa are long-ranging forms of no use in distinguishing Early from Late Cretaceous.

The only megafossil invertebrate known from the Pajarito Shale is *Lopha quadruplicata*, which was reported by Dobrovolny et al. (1946) from Puerto Canyon in Quay County. This taxon has a range of Albian through early Cenomanian (Scott, 1970; Kues et al., 1985), and, thus, it does not aid in refining the age of the Pajarito.

Approximately 500 dinosaur footprints are present in the Mesa Rica Sandstone and the Pajarito Shale in the dam spillway at Clayton

TABLE 1—Section A. Measured from the south shore of Clayton Lake through the recreation area to the top of the valley south of the lake in the SW¼NW¼SW¼ and NW¼SW¼SW¼ sec. 15, T27N, R34E. Strata are essentially flat-lying. This section was measured with a Brunton compass and 1.5-m-long staff; colors from the rock-color chart of Goddard et al. (1979).

Unit	Description	Thickness (m)
	Clayton basalts:	
18	Basalt, dusky brown (5 YR 2/2) and grayish black (N 1).	not measured
	Nonconformity	
	Quaternary alluvium:	
17	Sandstone, quartzose and calcareous, medium grained, well rounded, well sorted, very pale orange (10 YR 8/2).	9
	Disconformity	
	Graneros Shale:	
16	Shale, iron stained locally, light gray (N 7) and pale yellowish orange (10 YR 8/6; Fig. 3H).	5
	Dakota Sandstone:	
15	Sandstone, quartzose, fine grained, subangular, well sorted, silica cement, very pale orange (10 YR 8/2), forms a low bench.	2.4
14	Sandstone, mostly covered by alluvium, vegetation, and the asphalt roadway; but like unit 15 where visible.	6.5
13	Sandstone, quartzose, medium to fine grained, subangular, poorly sorted, iron stained, dark yellowish orange (10 YR 6/6), but weathers moderate brown (5 YR 3/4); low-angle planar crossbeds and ripple laminae.	2.3
12	Sandstone, quartzose, fine grained, subangular, well sorted, silica cement, grayish orange (10 YR 7/4), massive (intensively bioturbated) except for some preserved channel bottoms.	11.3
	Pajarito Shale:	
11	Sandstone, quartzose, fine to very fine grained, subrounded, moderately well sorted, silica cement, some kaolinite, yellowish gray (5 Y 7/2), intensively bioturbated (many vertically oriented, tubular burrows preserved), plant debris on top bedding plane.	0.6
10	Interbedded siltstone and sandstone; siltstone is slightly micaceous, some carbonaceous debris, light gray (N 7); sandstone is quartzose, fine grained, subangular, moderately well sorted, yellowish gray (5 Y 7/2) and, locally, dark yellowish orange (10 YR 6/6).	1.3
9	Sandstone, quartzose, fine grained, subangular, poorly sorted, silica cement, some kaolinite, grayish orange (10 YR 7/4), low-angle planar crossbeds, clay pebbles at base.	0.8
8	Same lithology as unit 10.	0.1
7	Same lithology as unit 9.	0.3
6	Same lithology as unit 10.	1.3
5	Sandstone, quartzose, medium grained, subangular, moderately well sorted, silica cement, some kaolinite, yellowish gray (5 Y 8/1), trough crossbeds, clay pebbles at base, some plant debris.	0.8
4	Same lithology as unit 10.	0.4
3	Sandstone, quartzose, fine to medium grained, subangular, very poorly sorted, silica cement, much kaolinite, yellowish gray (5 Y 7/2) to dark yellowish orange (10 YR 6/6), generally massive with some very low angle trough crossbeds.	1.5
2	Sandstone, quartzose, fine grained, subangular, moderately well sorted, silica cement, some kaolinite, light gray (N 7), laminar bedding.	0.3
1	Sandstone, quartzose, fine to medium grained, subrounded, poorly sorted, silica cement, trace kaolinite, light olive gray (5 Y 6/1), intensively bioturbated, ripple marks on top bedding plane.	2.0+
	Water level of Clayton Lake	

TABLE 2—Section B. Measured from the base of the dam spillway at Clayton Lake to the low hill above the spillway in the SW¼NE¼ sec. 15, T27N, R34E (see Fig. 1). Strata dip 18° to N60°E. This section was measured with a Brunton compass and 1.5-m-long staff; colors from the rock-color chart of Goddard et al. (1979).

Unit	Description	Thickness (m)
	Holocene soil:	
	Not described or measured.	
	Disconformity	
	Pajarito Shale:	
13	Sandstone, quartzose, fine grained, subrounded to rounded, moderately well sorted, silica cement, some kaolinite, unweathered light gray (N 7), weathers to dark yellowish orange (10 YR 6/6) and pale brown (5 YR 5/2), intensively bioturbated (Fig. 3F).	1.0+
12	Sandy, siltstone; siltstone is noncalcareous, light gray (N 7); sandstone is quartzose, very fine grained, subangular, dark yellowish orange (10 YR 6/6).	0.01
11	Sandstone, quartzose, fine grained, subrounded, moderately well sorted, silica cement, much kaolinite, yellowish gray (5 Y 7/2), grayish orange (10 YR 7/4) and dark yellowish orange (10 YR 6/6), laminar.	0.8
10	Same lithology as unit 12.	0.3
9	Sandstone, quartzose, very fine grained, subangular, moderately well sorted, silica cement, some kaolinite, yellowish gray (5 Y 7/2) and dark yellowish orange (10 YR 6/6), massive, hematitic stains, some plant debris, highest dinosaur footprint horizon (Gillette and Thomas, 1985, fig. 5).	0.5
8	Interbedded lithologies of units 6 and 7.	0.8
7	Sandstone, very fine grained, quartzose, silica cement, some kaolinite, subangular, well sorted, medium dark gray (N 4), thin laminae, very well indurated.	0.03
6	Silty shale, slightly micaceous, noncalcareous, some carbonaceous debris, medium gray (N 5).	0.03
5	Same lithology as unit 7.	0.03
4	Sandstone, quartzose, fine grained, subangular, moderately well sorted, silica cement, some kaolinite, grayish orange (10 YR 7/4) to dark yellowish orange (10 YR 6/6), intensively bioturbated, main dinosaur footprint horizon (Gillette and Thomas, 1985, fig. 5).	0.3
3	Siltstone, noncalcareous, medium gray (N 5).	0.08
	Mesa Rica Sandstone:	
2	Sandstone, quartzose, medium to coarse grained, subrounded to rounded, poorly sorted, grayish orange (10 YR 7/4) unweathered, weathers to dark yellowish orange (10 YR 6/6); bedforms range from planar crossbeds to ripple laminae (Fig. 3C) to trough crossbeds (Fig. 3B); clay pebbles and gravel present in trough bases, *Thalassinoides* burrows on top bedding plane (Fig. 3D), lowest dinosaur footprint horizon near top of this unit (Gillette and Thomas, 1985, fig. 5).	12.8
	Purgatoire Formation (Glencairn Shale Member):	
1	Shale, micaceous, noncalcareous, medium light gray (N 6); unit mostly covered by soil and vegetation (Fig. 3A).	not measured

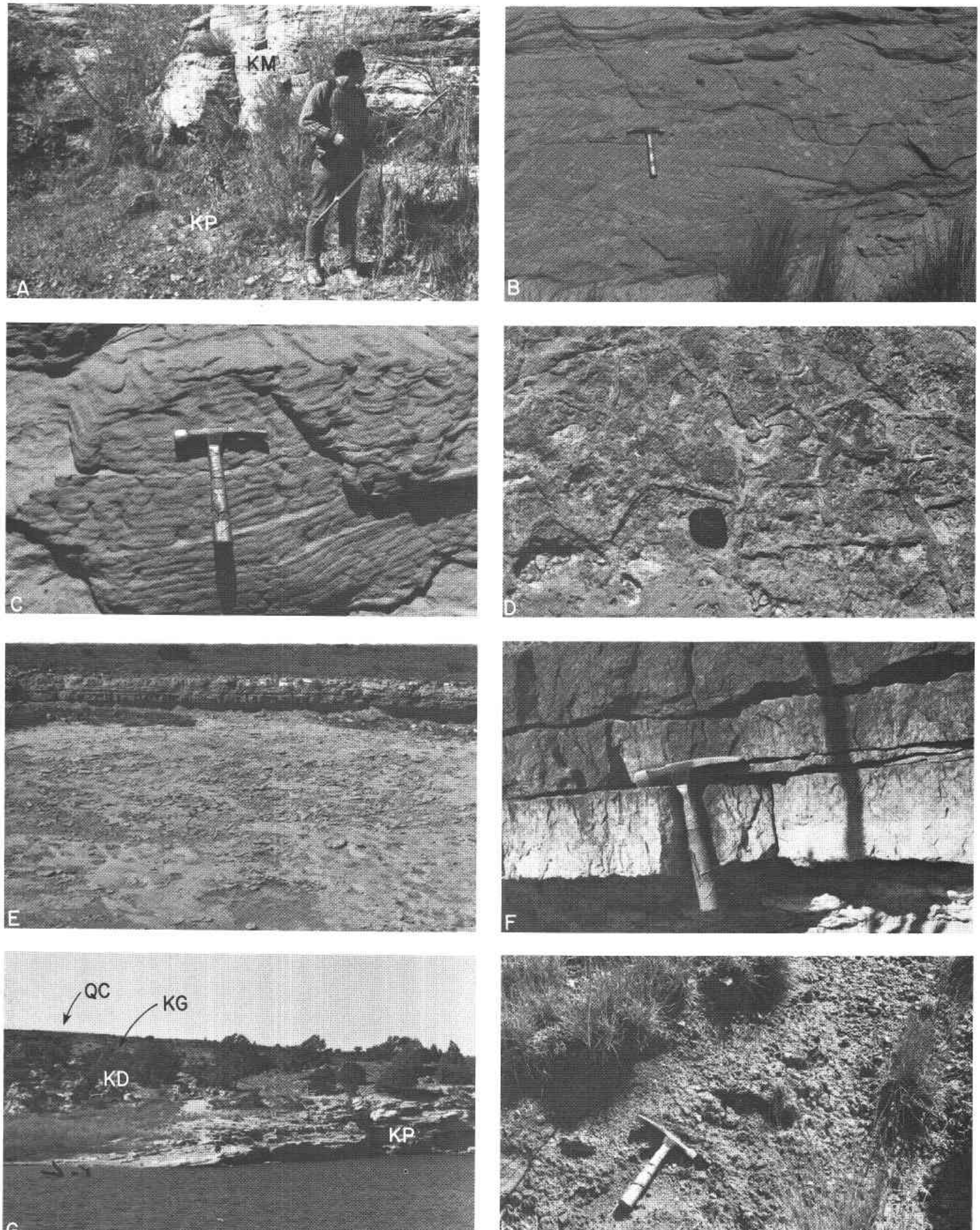

FIGURE 3—Cretaceous strata at Clayton Lake. **A**, Glencairn Shale Member of Purgatoire Formation **(KP)**, overlain by Mesa Rica Sandstone **(KM)** below the dam spillway; **B**, trough-crossbedded sandstone of the Mesa Rica Sandstone in the dam spillway; **C**, ripple-laminated sandstone of the Mesa Rica Sandstone in the dam spillway; **D**, *Thalassinoides* burrows on the top surface of the Mesa Rica Sandstone in the dam spillway; **E**, overview of the middle horizon of dinosaur trackways in the Pajarito Shale in the dam spillway (see Fig. 4 for detail); **F**, top sandstone of the Pajarito Shale in the dam spillway; **G**, south shore of the lake showing Pajarito Shale **(KP)**, Dakota Sandstone **(KD)**, Graneros Shale **(KG)** and Clayton basalts **(QC)**; **H**, Graneros Shale on slope above south shore of lake.

Lake (Figs. 3E, 4). In a series of abstracts and a paper, Gillette and Thomas (1983, 1985; Gillette et al., 1985; Thomas and Gillette, 1985) discussed the taxonomy and biostratigraphic significance of these tracks. According to these workers, at least four different types of tracks can be recognized that represent three theropod taxa and one (or more?) ornithopod taxon. The ornithopod tracks have the greatest biostratigraphic potential because it is possible to distinguish the iguanodontids (primarily Early Cretaceous) from hadrosaurids (primarily Late Cretaceous). However, no consistent identification of the ornithopod footprints from Clayton Lake has been presented.

Thus, these tracks have been assigned to a camptosaur (known mainly from the the Late Jurassic) and hadrosaurid (Gillette and Thomas, 1983), iguanodontids and hadrosaurids (Thomas and Gillette, 1985), or possibly hadrosaurids, iguanodontids, and a "web-footed theropod" (Gillette and Thomas, 1985). As pointed out by Gillette and Thomas (1985), the majority of the ornithopod footprints at Clayton Lake are similar to those of hadrosaurids described by Langston (1960), Currie (1983), and Currie and Sargeant (1979). The presence of blunt hoof impressions and the relatively small length-to-width ratio of these tracks distinguishes them from the tracks of iguanodontids (Currie, 1983).

Despite these differing identifications of the ornithopod footprints from Clayton Lake, Gillette and Thomas (1985) and Thomas and Gillette (1985) assigned an Early Cretaceous (Aptian–Albian) age to the trackways at Clayton Lake, believing them to be correlative with dinosaur tracks from the Dakota Group of central Colorado, which were assigned an Aptian–Albian age by Lockley (1985a). However, Lockley (1985b) subsequently concluded that, in light of the work of Scott (1970) and Tschudy et al. (1984), the Colorado trackways are of late Albian or early Cenomanian age.

Like Gillette and Thomas (1985), we believe the majority of ornithopod tracks from Clayton Lake are hadrosaurids. This might suggest a Late Cretaceous (ergo earliest Cenomanian) age for the uppermost Mesa Rica Sandstone and the Pajarito Shale. However, in North America undoubted hadrosaur body fossils are known from Lower Cretaceous strata (Galton and Jensen, 1979) as are hadrosaur trackways (Currie and Sargeant, 1979; Currie, 1983). Outside of North America, iguanodontids are known from the Upper Cretaceous (Taquet, 1976) and may be present in the North American Upper Cretaceous as well. Thus, the possibility of latest Albian or earliest Cenomanian iguanodontid and hadrosaurid footprints occurring together, as may be the case at Clayton Lake, cannot be discounted. The many theropod footprints at Clayton Lake appear to have no biostratigraphic utility for age discrimination within the Cretaceous.

FIGURE 4—Footprint of a small theropod dinosaur in the Pajarito Shale at the dam spillway, Clayton Lake (Fig. 2, sec. B, unit 4).

Conclusions

Five rock-stratigraphic units of Cretaceous age are exposed at Clayton Lake State Park in Union County. These units are, in ascending order, the Glencairn Shale Member of the Purgatoire Formation, the Mesa Rica Sandstone, the Pajarito Shale, the Dakota Sandstone, and the Graneros Shale. Arenaceous foraminiferans from the Glencairn Shale and Graneros Shale at Clayton Lake indicate late Albian and early Cenomanian ages, respectively, for these units. The dinosaur footprints from Clayton Lake, in what we identify as the uppermost Mesa Rica Sandstone and the Pajarito Shale, are of latest Albian or earliest Cenomanian age, not of Aptian–Albian age as previously reported.

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New Mexico Geological Society news

The annual NMGS business meeting was held on April 4, 1986, in conjunction with the spring meeting in Socorro. The membership voted to publish advertisements in the guidebooks again in order to reduce guidebook costs and to increase society revenues. This year the society awarded a total of $7,500 in scholarships to students working on New Mexico geologic problems. Christopher Menges, University of New Mexico, was awarded the $1,000 NMGS Fellowship; the remaining $6,500 was divided among 19 grants-in-aid recipients. Also awarded this year were two state science fair prizes. John Cosentino, Tularosa, received a $50 savings bond in the Junior Division; and Vicki Tate, Milan, received a $100 savings bond in the Senior Division.

A total of 120 persons registered for the spring meeting, which produced a small profit according to General Chairmen Dave Love and Ron Broadhead. Thirty-eight papers were presented in four sessions (see abstracts, this issue). Awards for Best Student Paper were given to Keith Kelson, University of New Mexico, and Ronald Linden, New Mexico Tech. Paige Christiansen, the banquet speaker, offered a lively anecdotal history of geologic-resource exploitation in New Mexico.

Special attention is called to the upcoming NMGS Fall Field Conference in the Truth or Consequences region, to be held October 16–18, 1986. General Chairman and Road-log Chairman, Bob Osburn, reports that a pre-meeting boat trip on the geology at Elephant Butte Lake is slated for October 15. Because of limited space, early reservations will be a must for this event. We are also pleased to announce that access has been granted to visit the restricted outcrop localities in the Fra Cristobal Range. Any questions regarding the field conference may be directed to the General Chairman, Bob Osburn (505/835-5147) or to the Registration Chairman, Tom Giordano (505/646-2708).

—*Robyn Wright*
NMGS Secretary

Provisional topographic maps
(*continued from page 57*)

*Lovington SE	1979–85	32°45′	103°15′	5	
*Lovington SW	1979–85	32°45′	103°22′30″	5	
*Magdalena	1979–85	34°	107°7′30″	40	
*Magdalena Gap	1976–85	32°15′	107°7′30″	10	5
*Magdalena Peak	1976–85	32°22′30″	107°7′30″	20	
*Malaga	1978–85	32°7′30″	104°	10	5
*Maljamar	1979–85	32°45′	103°45′	10	
*Maljamar NE	1979–85	32°52′30″	103°45′	10	5
*Maverick Mountain	1979–85	32°45′	107°45′	40	
*McClede Mountain	1979–85	32°45′	107°30′	40	
*McLeod Tank	1980–85	32°45′	107°7′30″	40	
*Mesa Gallina	1979–85	34°37′30″	107°7′30″	20	
*Mesa Sarca	1979–85	34°30′	107°7′30″	20	
*Mesas Mojinas	1979–85	34°37′30″	107°	20	
*Midway	1980–85	34°15′	103°7′30″	5	
*Monument North	1979–85	32°37′30″	103°15′	10	5
*Monument South	1979–85	32°30′	103°15′	5	
*Monument SW	1979–85	32°30′	130°22′30″	5	
*Mount Aden	1976–85	32°7′30″	107°7′30″	10	5
*Mount Aden SW	1976–85	32°	107°7′30″	20	
*Mount Nebo (NM–CO)	1981–85	36°52′30″	107°45′	20	2.5
*Mount Riley	1976–85	31°52′30″	107°	20	10
*Mount Riley SE (NM–Mex.)	1976–85	31°45′	107°	10	
*Ned Houk Park	1980–85	34°30′	103°7′30″	5	
*Noria (NM–Mex.)	1976–85	31°45′	106°45′	5	
*Oasis State Park	1980–85	34°15′	103°15′	5	
*Otis	1978–85	32°15′	104°7′30″	5	
*P A Mountain	1979–85	32°45′	107°37′30″	40	
*Pleasant Hill (NM–TX)	1980–85	34°30′	103°	5	
*Pleasant Hill NE (NM–TX)	1980–85	34°37′30″	103°	5	
*Pleasant Hill NW	1980–85	34°37′30″	103°7′30″	5	
*Pleasure Lake (NM–TX)	1980–85	34°15′	103°	5	
*Portair	1980–85	34°22′30″	103°15′	5	
*Portair SW	1980–85	34°15′	103°22′30″	5	
*Portales	1980–84	34°7′30″	103°15′	5	
*Potrillo (NM–Mex.)	1976–85	31°45′	106°52′30″	20	10
*Potrillo Peak	1976–85	31°52′30″	107°7′30″	20	
*Remuda Basin	1978–85	32°15′	103°52′30″	10	
*Riley	1979–85	34°22′30″	107°7′30″	20	
*Rough and Ready Hills	1976–85	32°22′30″	107°	20	
*San Lorenzo	1979–85	32°45′	107°52′30″	40	20
*San Lorenzo Spring	1979–85	34°7′30″	107°	20	10
*Silver Creek	1979–85	34°15′	107°	20	
*Sleeping Lady Hills	1976–85	32°15′	107°	20	
*Smith Ranch	1980–85	34°37′30″	103°15′	10	
*Smouse Mesa	1981–85	36°22′30″	107°30′	20	
*St. Vrain	1980–85	34°22′30″	103°22′30″	5	
*Taylor Mountain	1979–85	32°30′	107°52′30″	20	
*Tower Hill North	1978–85	32°30′	103°52′30″	10	
*Tower Hill South	1978–85	32°22′30″	103°51″	10	
*Thompson Mesa	1981–85	36°22′30″	107°37′30″	20	
*Turley	1981–85	36°45′	107°45′	20	
*Water Canyon	1979–85	34°	107°	20	
*White Ridge	1979–85	34°45′	107°7′30°	20	
*Whitehorse Mountain	1979–85	32°37′30″	107°52′30″	40	
*Williams Sink	1978–85	32°30′	103°45′	10	

(*continued on page 66*)