Ammonoids of the Lower Triassic Thaynes Group in the Pahvant Range, Utah

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Introduction
The Thaynes Group is a marine unit that thins from northwest to southeast across Utah, where it interfingers with the terrestrial Moenkopi Group. The limestones and shales of the Thaynes Group reflect deposition within the Sonoma Foreland Basin, and outcrops of these Lower Triassic rocks can be seen now in the Pahvant Range of central Utah.

Methods
Two sections were measured through a portion of the Lower Thaynes Group at separate localities in the Pahvant Range. Fossils were systematically collected from the limestone beds; fossils are extremely rare in the intercalated shales. Ammonoids, though generally poorly preserved, are abundant in the upper beds in both measured sections.

This report focuses on ammonoids from the upper beds, 7 through 10.

Results
We recognize ammonoids in bed 10 as Anasibirites kingianus. In the underlying beds 7, 8 and 9, the ammonoid fauna is much more diverse and includes: Inoyelles oweni, Wymonginites arnoldi, Churkites nobeli, Guodunites hooveri, Owenites koeneni, Lanceolites bicarinatus, Juvenites septentrionalis, ?Xenoceltites intermontanus, an ussuriid, and an unidentified proptychitid. The upper bed, 10, is assignable to the informal Anasibirites kingianus Zone, while the underlying beds, 7-9, belong to the upper part of the Meekoceras gracilitatis Zone. Furthermore, the A. kingianus Zone correlates with the A. multiformis Zone (Upper Smithian), while the upper part of the M. gracilitatis Zone correlates with the Owenites Beds (Middle Smithian) of the Tethyan Paleoequatorial Zonation. An Inoyelles Horizon is also recognized just below the Anasibirites beds which is also recognized in Tethyan faunas.

Conclusions
Our results complement recent reports of the occurrence of the Upper Smithian Anasibirites fauna in the Sinbad Formation (Thaynes Group) at several sites in southern and southeastern Utah. These faunas provide an important geographic link between localities to the east and south and localities to the west and north. Interestingly, ammonoids of the Middle Smithian Meekoceras fauna appear to be absent in the correlative Sinbad Formation localities to the south and east. Therefore, the occurrence of the Meekoceras fauna in the Pahvant Range represents the farthest southeast this fauna has been reported in Utah. The lower beds of the Thaynes Group in the Pahvant Range also contain ammonoids, which continue to be investigated and may soon yield more significant discoveries.

References


