

## TEXAS AMMONITES IN ARIZONA ?

By

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## INTRODUCTION

In 1959 I received two specimens of ammonites, each from a different source, within a 2-week period. These ammonites were identified by me as species of "Mortoniceras" (in the broad sense), a genus of Lower Cretaceous ammonite not previously known from Arizona.

Stoyanow (1949) described the then known fauna of the Bisbee Group. This fauna was composed of ammonites belonging to the families Parahoplitidae, Desmoceratidae, and Lyelliceratidae. No members of the subfamily Mortoniceratinae were found in Arizona by Stoyanow. Stoyanow's analysis of the fauna led him to the conclusion that the Bisbee Group ammonite fauna largely entered Arizona from the west and was closely allied to an Asiatic fauna. However, the species of the pelecypod Trigonia studied by Stoyanow indicated to him that they had come from Texas, to the east.

Thus discovery of ammonites derived from Texas faunas in the Arizona section was worth further investigation, as this would help clarify the Cretaceous paleogeography of southern Arizona.

## LOCALITIES OF THE SPECIMENS

The first ammonite seen by the writer was allegedly found in the SE-1/4 sec. 32, T. 22 S., R. 11 E., across the road from Ruby and about 200 yards up a hillside. A careful search of the area failed to reveal any more ammonites.

The second ammonite was reported to have come from the SW-1/4 sec. 19, T. 23 S., R. 29 E., in the Perilla Mountains; it was picked up on the surface of the Lowell Formation, about 15 feet below the Mural Limestone. No additional specimens were located by the author during a later search.

Neither specimen was found by a trained geologist.

## DESCRIPTION OF THE SPECIMENS

The Ruby Mortoniceras consists of an internal cast of over half the whorls of the specimen. It is about 9 inches in diameter, has prominent umbilical and ventrolateral tubercles, and is keeled and shouldered. The ribs are rectiradial and intercalary prorsiradial ribs are approximated; the ribs are

strong, the whorl section is trapezoidal.

The Perilla Mortonicer also consists of an internal cast, to which several small oyster shells are attached. This may indicate the specimen was reworked from older strata. The ammonite is complete, about 8 inches across, and morphologically resembles the Ruby specimen closely. The Ruby specimen probably belongs in Drakeoceras, a new genus of mortoniceratid ammonite described by Keith Young in 1957. The Perilla Mortonicer is figured in plate 1, figures A and B.

#### THE ULTIMATE SOURCE

Being suspicious of the source of the specimens, I dissolved a fragment of the Ruby Mortonicer in acid in order to obtain and examine the insoluble residue. It was composed of about 90 percent  $\text{CaCO}_3$ , and the insoluble residue was mainly clay-sized particles with some fine and very fine silt sizes. Dr. Robert L. DuBois examined the larger fraction of the insoluble residue and recognized that it consisted largely of angular quartz grains with typical sedimentary heavy minerals such as pyroxene, zircon, and tourmaline. No shards of volcanic glass were observed.

The area from which the specimen supposedly came has outcrops of the Atascosa Formation, a Tertiary(?) tuff, underlain by a dark clastic sedimentary unit. Neither unit contains any limestone beds or any appreciable quantities of  $\text{CaCO}_3$ . The ammonite was nearly the same yellowish color as the Atascosa tuff, but its lithology indicates it must have come from a far different unit, quite possibly in Texas.

The Perilla ammonite presented a more difficult problem. Its lithology was not at great contradistinction with the "mother" rock. Stoyanow (1949, p. 36) correlated the Mural Limestone with the Hoplites dentatus and Douvilleiceras mammillatum zones of early Albian age (Trinity equivalent), and he correlated the Lowell Formation with the sequence from the Leymeriella tardefurcata zone of early Albian age to the Parahoplites melchioris zone of Aptian age. However, the genus Mortonicer, in the broad sense, has only been found in rocks of late middle Albian to latest Albian age. The genus Drakeoceras has only been found in upper Albian rocks. It is extremely unlikely that a specimen of Mortonicer would occur in lower Albian rocks, particularly a specimen that may have been reworked. Therefore, we undoubtedly have a second "Texas" ammonite.

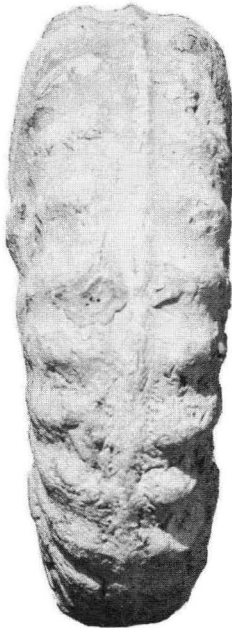
Either of these "discoveries," if taken at the finder's word, could have altered, without reason, our present concept of Cretaceous paleogeography and helped to further confuse our tenuous understanding of the Cretaceous(?) rocks of southern Arizona.

#### ACKNOWLEDGMENTS

The author is indebted to Donald G. Bryant, who took the excellent photograph of the Perilla ammonite, and to Willard D. Pye, who accompanied him on several ammonite seeking trips. The author was also aided in the field by W. N. Hackenbracht, William Mathias, Robert Moore, and Richard T. Moore



Lateral view of Montoniceras "from the Perilla Mountains." The diameter of the specimen is 20.5 cm.



Ventral view of Montoniceras "from the Perilla Mountains." Width of the whorl is 7.5 cm.

during these trips.

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#### REFERENCES

Stoyanow, A. A., 1949, Lower Cretaceous stratigraphy in southeastern Arizona: Geol. Soc. America Mem. 38, p. 1-169, pl. 1-26.