

# THE LOWER CRETACEOUS AMMONITE *HYPACANTHOPLITES* SPATH FROM THE BIG HATCHET MOUNTAINS, SOUTHWESTERN NEW MEXICO

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**ABSTRACT:** We document specimens of the ammonite *Hypacanthoplites* (= *Immunitoceras*) *immunitus* (Stoyanow) from the upper part of the Carbonate Hill Member of the U-Bar Formation in the Big Hatchet Mountains of southwestern New Mexico. They indicate a latest Aptian age for the upper part of the Carbonate Hill Member.

## INTRODUCTION

Zeller (1965) first reported Lower Cretaceous ammonites from the Big Hatchet Mountains in southwestern New Mexico (Fig. 1). These were fossils he collected from the U-Bar and Mojado formations of the Bisbee Group identified by Alexander Stoyanow of the University of California, Los Angeles (UCLA) (Lucas and Estep, 1998a, b). Stoyanow retained these ammonites in the UCLA collection, and after his death they were transferred to the collections of the Los Angeles County Museum (LACM) (L. Saul, oral commun., 1991). Here, we document some of these ammonites and interpret their biochronological significance.

## STRATIGRAPHY

The ammonites described here come from a single locality (LACMIP 17136) in the NW 1/4 NE 1/4 sec. 31, T31S, R15W (UTM 746635E, 3495600N, Zone 12, datum NAD27), Big Hatchet Mountains, Hidalgo County, New Mexico (Fig. 1). This locality is in the stratigraphic unit Zeller (1965) referred to as the oyster-limestone member of the U-Bar Formation. This is the Carbonate Hill Member of the U-Bar Formation *sensu* Lucas and Estep (1998b).

Zeller (1965, p. 65, 113) referred to these ammonites as "collection 73a from near the base of the Big Tank Southwest section." He stated that "several new species of *Immunitoceras* (identification by Stoyanow)" (p. 113) were present and indicated a very late Aptian age.

## SYSTEMATIC PALEONTOLOGY

Family Parahoplitidae Spath, 1922

Subfamily Acanthohoplitinae Stoyanow, 1949

Genus *Hypacanthoplites* Spath, 1923

*Hypacanthoplites immunitus* (Stoyanow, 1949)

Figs. 2-3

*Immunitoceras immunitum* Stoyanow, 1949, p. 117, pl. 20, figs. 8-15.

*Immunitoceras* new sp.: Zeller, 1965, p. 65, 113; pl. 5.

*Hypacanthoplites immunitum*: Casey, 1965, p. 456.

*Hypacanthoplites immunitum*: Young, 1974, p. 217.

**Referred specimens**—LACMIP-12194, large, three-dimensional, complete shell; LACMIP-12195, medium, three-dimensional, complete shell; LACMIP-12196, medium, three-dimensional, half whorl; LACMIP-12197, medium, three-dimensional,

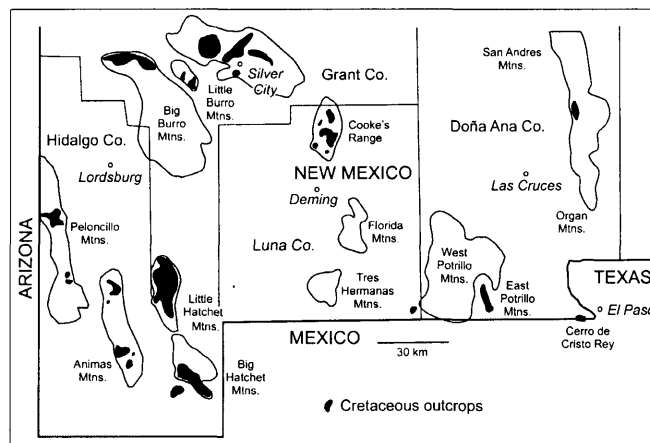
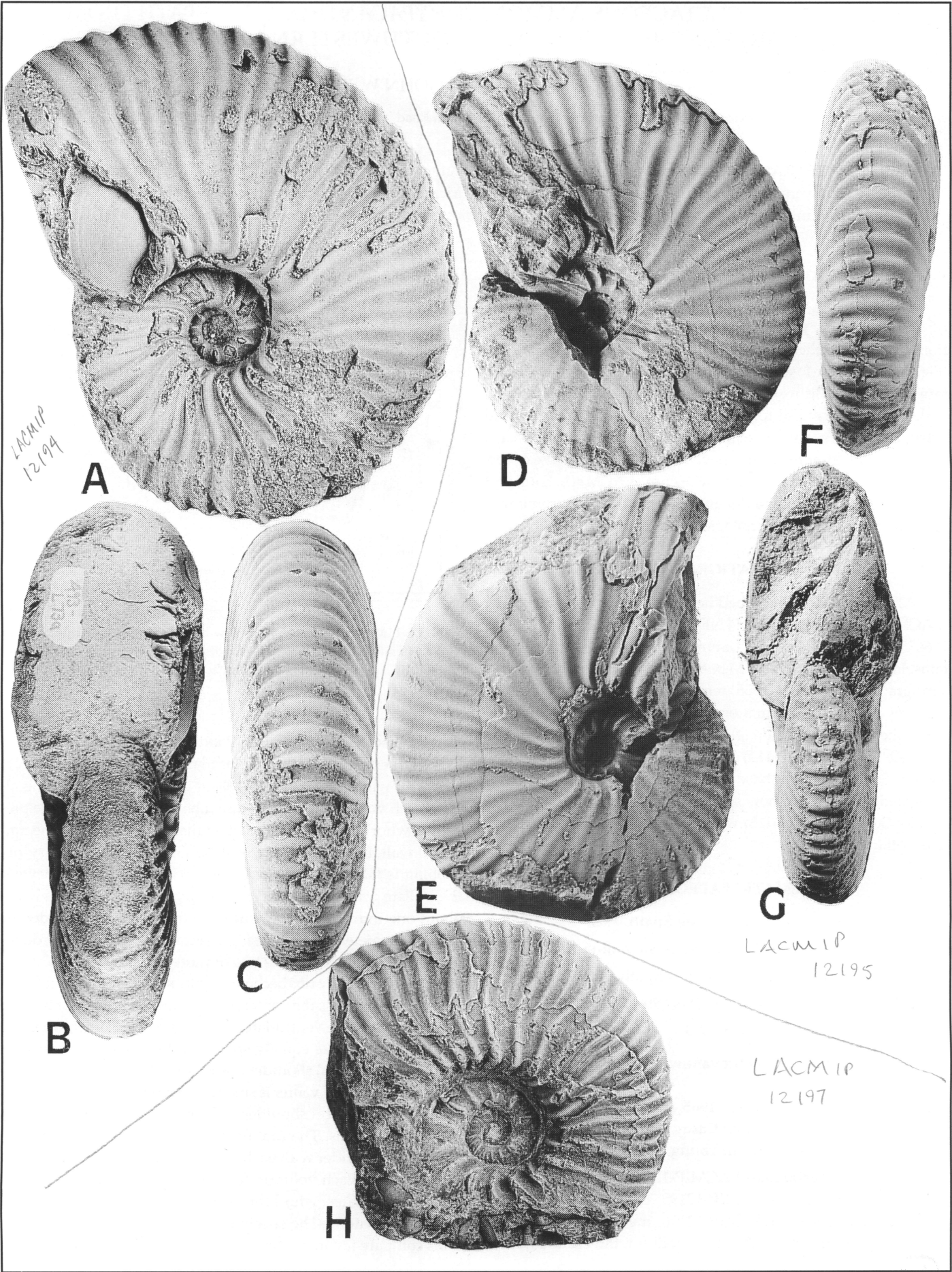


FIGURE 1. Map of southwestern New Mexico showing distribution of Cretaceous strata. The ammonites reported here are from outcrops along the southwestern flank of the Big Hatchet Mountains in Hidalgo County.

three-quarter whorl; LACMIP-12198, small, three-dimensional, quarter whorl; all from LACMIP locality 17136 (see above).

**Description**—Inflated planulate ammonoid of moderate size with whorl width about 60% of height. Involute coiling allows each volution to expose only about one-quarter of the preceding whorl. Strong, rectiradiate bullate nodes form on the umbilical wall, below the umbilical shoulder, on each primary rib. Ribbing is falcoid and becomes distinctly prorsiradiate beyond the bullate umbilical nodes. Secondary, intercalatory ribs begin about one-third of the way out from the umbilical shoulder. At smaller diameters there is a single secondary rib; at larger diameters ( $H > 37$  mm) there are two or more secondary ribs. The primary and secondary ribs become equally strong on the outer flanks and continue across the venter without interruption. The ribs are strongest from one ventro-lateral shoulder to the other, where, at mid-venter, they are equally spaced and as wide as interspaces. At the ventro-lateral shoulder, the ribs are strongly inclined more prorsiradiately. The venter is smoothly rounded, as are the ventro-lateral and umbilical shoulders. The suture is well preserved on several specimens. The umbilicus is deep, with a shelf that becomes slowly wider with each volution. The umbilical wall is almost vertical. Each volution fully exposes the bullate umbilical nodes. The greatest whorl thickness is at the umbilical edge.

**Discussion**—The specimens from the Big Hatchet Mountains compare favorably with the holotype (LACMIP-10754) and

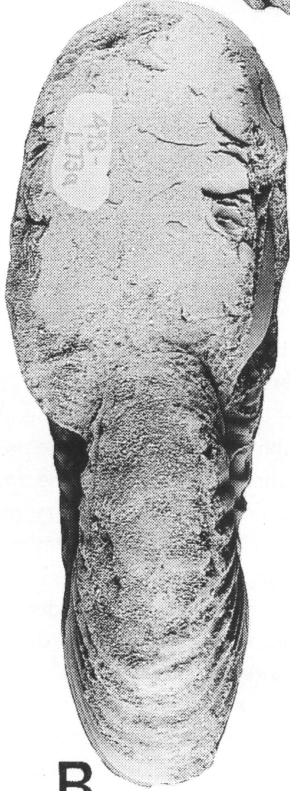


LACMIP  
12194

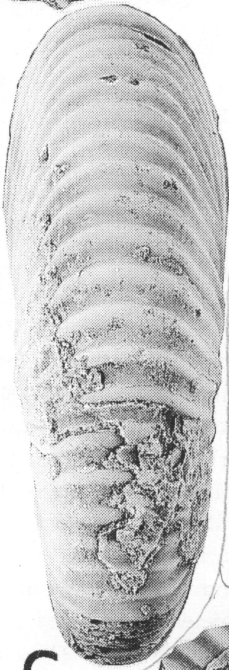
**A**

**D**

**F**



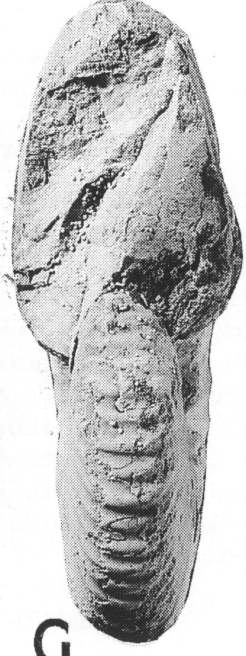
**B**



**C**



**E**



**G**

LACMIP  
12195



**H**

LACMIP  
12197

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