

NEW BACULITES FROM THE CRETACEOUS BEARPAW
FORMATION OF SOUTHWESTERN SASKATCHEWAN¹By HAROLD R. ROBINSON²

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LARGE collections of fossils from the Bearpaw formation in the Cypress Lake area, Saskatchewan, were made by G. M. Furnivall, Geological Survey, in the years 1940 and 1941. A special study of the species of *Baculites* in these collections has been made by the writer. Three species and two varieties, including one new species and one new variety, have been recognized:

Baculites ovatus Say

Baculites compressus Say

Baculites compressus var. *corrugatus* Elias

Baculites compressus var. *ornatus* n. var.

Baculites natosini n. sp.

The new species and new variety are described below.

Special acknowledgment is made to Dr. T. H. Clark of the Geological Department of McGill University under whose direction the study was made.

GENUS *Baculites* Lamarck

Baculites compressus var. *ornatus* n. var.

PLATE I, Figs. 1-4

The shell tapers at about the same rate as that of *Baculites compressus* Say, except that at later stages of growth it tapers rather more rapidly. In cross-section it is strongly compressed and narrowing towards the siphonal margin. With growth it becomes ovate in section, with a broadening of the anti-siphonal margin. Aperture and early stages of growth are unknown.

The sides of the non-septate part are ornamented with broad, arcuate undulations, parallel to the growth lines. The same ornament is faintly developed for some distance backward on the septate portion. The siphonal margin is crossed by plications which vary in size and spacing with the growth of the shell.

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²Lieut. Harold R. Robinson was killed in action in Holland, October 13, 1944. With his death a promising career in geology came to a close.

The septa are closely spaced and less deeply incised than those of *Baculites compressus*, resembling slightly those of *Baculites ovatus* Say. The median saddle of the siphonal lobe is divided into two secondary saddles, flanked by two long, narrow, secondary lobes. The first lateral saddle is not deeply divided, but stands on a broad base rather than on a narrow neck. This is also true of the second lateral saddle. The two terminal portions of the second lateral lobe stand on a broad neck and tend to diverge from one another. The second lateral lobe is somewhat asymmetrical. The top of the anti-siphonal lobe is divided into two portions, although this does not seem characteristic of all specimens.

Measurements of holotype: length, 8.75 inches; maximum diameter at larger end, 1.75 inches; maximum diameter at smaller end, 1.25 inches.

The arcuate undulations on the sides of the shell appear at a much earlier stage of growth than those of the typical species and the tapering is more rapid in later stages of growth. It also has a simpler suture line than the typical species.

It occurs in the Bearpaw formation of Southern Saskatchewan and is most common in the basal beds. The holotype was collected in a sandstone layer about 150 feet above the base of the formation on the south side of Little Boxelder Coulee, section 16, township 11, range 29, west of the 3rd meridian.

Types: Geological Survey collections; holotype, cat. no. 9070; paratype, cat. no. 9071.

Baculites natosini n. sp.

Plate I, Figs. 5 and 6

This species is based on the internal cast of part of the non-septate portion of the shell. The suture line and septate part are unknown.

The shell is very large, tapering at about the same rate as that of *Baculites compressus*. The cross-section is oval-compressed. No surface ornament is present except a few varices of growth. The growth lines indicate an aperture resembling those of *Baculites compressus* Say and *Baculites ovatus* Say.

Measurements of holotype: height at point nearest aperture, 24 cm.; width, 14 cm.

It is distinguished from *Baculites claviformis* Stephenson by the absence of undulations on the flanks of the shell and the lack of any marked ornament. No smaller and younger portions of shells were found in the Bearpaw formation of this area with suture lines re-

sembling those of *B. claviformis*. It is much larger than *Baculites compressus* Say, *Baculites ovatus* Say or *Baculites grandis* Hall and Meek.

The holotype was collected in beds 315 feet below the top of the Bearpaw formation on McShane creek in section 13, township 9, range 27, west of the 3rd meridian.

Natosin, a chief of the North Blackfeet Indians.

Type: Geological Survey collections; holotype, cat. no. 9119.

EXPLANATION OF PLATE I

Baculites compresses var. *ornatus* n. var.

FIGURE 1.—Lateral view of holotype $\times \frac{1}{2}$. Geological Survey collections, cat. no. 9070.

FIGURE 2.—Cross-section same specimen $\times \frac{1}{2}$.

FIGURE 3.—Lateral view of paratype $\times \frac{1}{2}$. Geological Survey collections, cat. no. 9071.

FIGURE 4.—Cross-section same specimen.

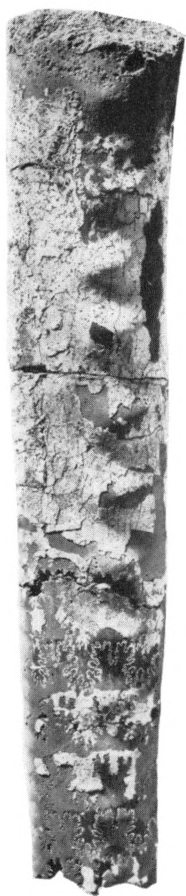
Baculites natosini n. sp.

FIGURE 5.—Cross-section of holotype $\times 1/16$. Geological Survey collections, cat. no. 9119.

FIGURE 6.—Lateral view of same specimen $\times 1/16$.



3



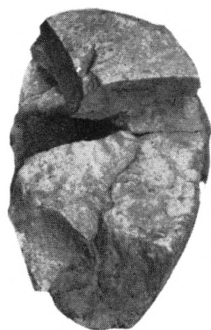
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4



2



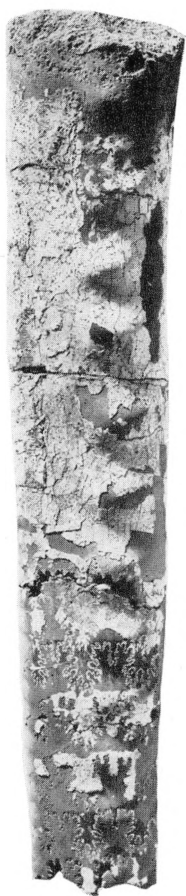
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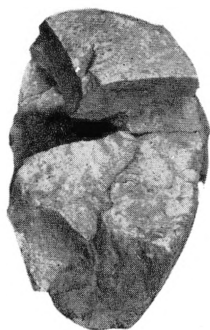
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6