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## THE NEBRASKA STATE MUSEUM

ERWIN H. BARBOUR, Director

A NEW OVIBOVINE, *SYMBOS CONVEXIFRONS*, sp. nov.

BY ERWIN HINCKLEY BARBOUR ROOM

In Bulletin 25, entitled The Musk-oxen of Nebraska, the writer figured and briefly catalogued the ovibovines of this State as known at that date. In the meantime an interesting new form unlike that of any species falling within our experience presents itself from the Pleistocene of Cherry County, Nebraska. The new specimen cannot be assigned a place in any of the four following genera: *Preptoceras*, *Euceratherium*, *Ovibos*, or *Bootherium*, but may possibly be referable to the genus *Symbos*, to which we are assigning it provisionally. It is so unlike *Symbos*, however, that it may be a distinct genus.

The character of *Symbos cavifrons*, as the name implies, is its deeply concave front in which the concavity may equal  $1\frac{1}{2}$  inches or more. As usual, however, there is a considerable range of variation with which to reckon. Sufficient comparison shows that the front of *Symbos cavifrons* varies from fairly convex, to deeply concave, the prevailing condition. Antithetically, the character of the new specimen is its convex front, in which the convexity equals  $1\frac{3}{4}$  inches. Accordingly, we are proposing for the specimen under consideration the name *Symbos convexifrons*. The name may serve also as a mnemonic. The skull seems to be a trifle smaller than that of *Symbos cavifrons*. The brow of this specimen is notably convex, and this, coupled with the slope, length, and sweep of the horn cores, constitutes the main feature of this new species. In the case of *Symbos cavifrons*, the exostosis and the horns were confluent across the head; in *Ovibos moschatus* they virtually met on the median line, but in fact always preserved a deep narrow groove between; while in *Symbos convexifrons* the horns rise from the side of the head, after the manner of bovines, as may be seen in the accompanying figure. The horn cores are not so flattened above and do not droop so abruptly downward as they do in *Symbos cavifrons* and *Ovibos moschatus*; besides, they are longer and much more divergent. They are broad and inflated at the base, taper rapidly, slope gradually downward, forward, distinctly outward, and curve upward but slightly

if at a.l. They measure 24 inches from tip to tip, or about 26 inches or more with the tips restored, whereas *Symbos cavifrons* measures but 16 to 18 inches and the length on the outer curve is about 10 inches.

The horn core of *Symbos convexifrons* measured on the outer curve is  $13\frac{1}{2}$  inches or 16 inches if restored. Judging by the modern musk-ox in which the horn is more than twice

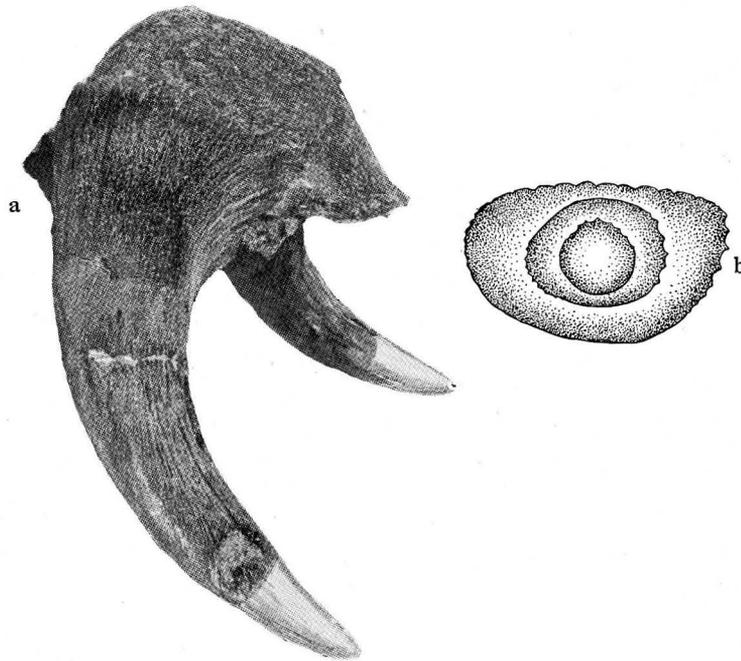


FIG. 173.—a. *Symbos convexifrons*, side view of the skull, about 1/6 natural size. Left horn core restored.

b. Sections of the right horn core at the base, middle, and tip. Antero-posterior diameter at the base  $5\frac{3}{8}$  inches, vertical diameter  $3\frac{3}{8}$  inches.

the length of the horn core, the horn of *Symbos convexifrons* in life must have passed 30 inches in length or about 28 inches from tip to tip. The horn of a seven- or eight-year-old *Ovibos moschatus* measures 27 inches in length and 21 to 25 inches from tip to tip.

There are at hand for comparison eight Nebraska skulls of *Symbos cavifrons*, two examples of *Ovibos moschatus*, and one

of *Bootherium*. In every example of *Symbos* and *Ovibos*, the horn core drops abruptly downward and does not curve forward enough to pass the orbit. In the case of *Symbos convexifrons*, the horns slope downward, notably outward, and forward, and pass the orbit. In none of these is the texture of the exostosis like that of *Symbos convexifrons*, in which the exostosis extends uninterruptedly across the head, runs a short way down the muzzle, and continues about two inches over and below the occipital crest. The exostosis of *Symbos cavifrons* is a rough, bony growth which is pitted and oftentimes has many scattered openings. That of *Symbos convexifrons* is without pits or pores and the surface is covered with innumerable small tubercles not unlike pea-shaped con-

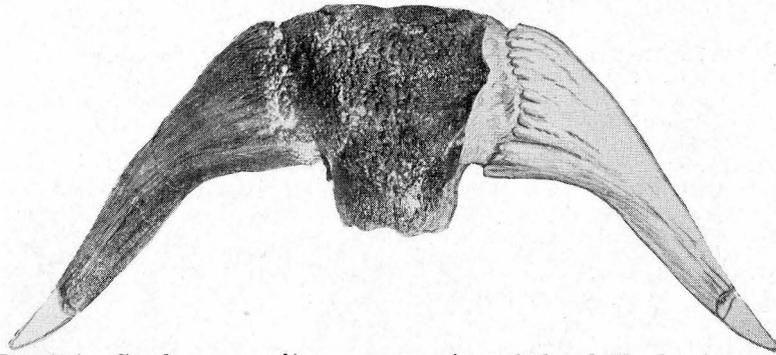


FIG. 174.—*Symbos convexifrons*, crown view of the skull, showing convex forehead. The left horn core is restored from the right. Specimen number 1-2-34, the Nebraska State Museum. Pleistocene, Cherry County, about 1/6 natural size.

cretions more or less flattened. All musk-oxen are a product of the Pleistocene, and all are now extinct save *Ovibos moschatus*, the living form, which is exclusively boreal.

The skull of *Symbos convexifrons*, No. 1-2-34, of the Nebraska State Museum, was collected on December 3, 1933, by Walter Jones and Verne Briggs in a quarry opened and developed in 1930 and 1931 by a field party from the University of Nebraska. In his field notes of 1932, reference is made by Charles Osborne to this quarry as the North Prong quarry. It is located in a small side canyon on the north side of the North Branch of the Middle Loup River in Sec. 18, T. 25 N., R. 33 W., Cherry County, Nebraska. This locality is about 12 miles northwest of Mullen, Nebraska.

The fossiliferous layer in which the skull was found, according to Charles Osborne's field notes of 1930, is a channel sand. This layer is about 80 feet above the water level of the North Branch of the Middle Loup River, and the age probably Middle Pleistocene. The associated fauna taken from C. Bertrand Schultz's faunal list is as follows:

1. *Megalonyx* sp., referred. 2. *Sylvilagus floridanus* Allen, referred. 3. *Citellus* sp., referred. 4. *Thomomys* sp., referred. 5. *Geomys bursarius* Shaw, referred. 6. *Geomys lutescens* Merriam. 7. *Microtus* sp., referred. 8. *Aenocyon* sp., indet. 9. *Metailurus (Pseudaelurus)* sp. 10. *Stegomastodon aftoniae* Osborn. 11. *Archidiskodon imperator* Leidy. 12. *Parelephas columbi* Falconer, referred. 13. *Equus excelsus* Leidy. 14. *Equus colabatus nebrascensis* Frick. 15. *Camelops* sp. indet.

#### MEASUREMENTS

Length of horn-core measured on the outer curve, 13½ inches (343 mm.)  
 Tip to tip of horn cores, 24 inches (609 mm.)  
 Tip to tip when restored, 26 inches (662 mm.)  
 Circumference around base of horn core, 15 inches (382 mm.)  
 Circumference at middle of horn core, 8 inches (203 mm.)  
 Circumference at tip of horn core, 5 inches (127 mm.)  
 Antero-posterior diameter, base of horn core, 5¼ inches (133 mm.)  
 Antero-posterior diameter at middle of horn core, 2¾ inches (70 mm.)  
 Antero-posterior diameter at tip of horn core, 1⅞ inches (35 mm.)  
 Vertical diameter of base of horn core, 3½ inches (88 mm.)  
 Distance across the brow, 8.5 inches (216 mm.) 7½?  
 Height of convexity, 1¾ inches (45 mm.)  
 Length of exostosis, 7¼ inches (185 mm.)  
 Occipital crest to bottom edge of exostosis, 2⅓ inches (52 mm.)  
 Across the occiput at the narrowest point, 4¾ inches (121 mm.)  
 From the neuchal scar to crest of occiput, 4½ inches (113 mm.)  
 Thickness of the diploic layer, 4 inches (101 mm.)

The University of Nebraska,  
 Lincoln, Nebraska,  
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