


5-1934

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BULLETIN 36

VOLUME I

THE NEBRASKA STATE MUSEUM

ERWIN H. BARBOUR, Director

A NEW GIANT CAMEL,

TITANOTYLOPUS NEBRASKENSIS, gen. et sp. nov.

By ERWIN HINCKLEY BARBOUR AND C. BERTRAND SCHULTZ

The purpose of this bulletin is to figure and describe a camel brought to light in the field season of 1933, which seems to be the giant of all camels found in the State. The specimen consists of the right ramus with the symphysial portion. The mandible is  $26\frac{1}{8}$  inches long, or about the length of one's outstretched arm to the finger tips. This jaw is nine inches longer than that of *Camelops kansanus*. Such an extraordinary jaw indicates a camel nearly twice as large as *Alticamelus altus*. In reference to its unusual size we are proposing for it the name *Titanotylopus nebraskensis*.

The teeth are very brachyodont, and the incisors are not spatulate. The dental formula of *Titanotylopus nebraskensis* reads as follows: i 3, c 1, p 2, m 3.

The third incisor was practically aborted as indicated by the small and very shallow alveolus crowded close to the base of the canine.

The first left incisor has the enamel preserved on the inner side. It measures but 19 mm. in height.

It should be noted that in *Plianchenia* the cheek teeth are subbrachyodont to hypsodont; in *Megatylopus* they are more or less hypsodont; and in *Titanotylopus* they are distinctly brachyodont.

Obviously premolars 1 and 2 have long been missing in this genus for not a vestige of them has been left.

Such an assemblage of characters seems well beyond the realm of mere variation, and we find no ready escape from making this a new genus. So few genera of camels are reported as yet from the Pleistocene that *Titanotylopus* deserves the more attention.

This unusual specimen was secured during the first week in September, 1933, by Frank Crabill (Class of 1935), a member of the Morrill Palaeontological Expedition of 1933, but was found, collected, and donated by Mr. and Mrs. S. E. Jensen of Red Cloud who found it in a small pit about eight miles northwest of Red Cloud, Webster County, Ne-

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braska. The exact location of this pit is the N.W. $\frac{1}{4}$ , Sec. 17, T. 2 N., R. 11 W. The jaw was found 33 feet below the surface in Pleistocene gravel of supposed Kansan age, and is accessioned 1-6-9-33, the Nebraska State Museum. The specimen consists of the right ramus of the mandible together with the symphysis intact, the dentition being complete but damaged by exposure.

## MEASUREMENTS

Total length of jaw.....	662 mm.	26 $\frac{1}{8}$ in.
Height of jaw at the coronoid.....	346 mm.	13 $\frac{5}{8}$ in.
Depth below M <sub>3</sub> .....	95 mm.	3 $\frac{3}{4}$ in.
Depth below P <sub>3</sub> .....	76 mm.	3 in.
Depth at mental foramen.....	69 mm.	2 $\frac{3}{4}$ in.
Length of premolar-molar series.....	220 mm.	8 $\frac{5}{8}$ in.
Length of molar series.....	159 mm.	6 $\frac{1}{4}$ in.
Length of diastema from P <sub>3</sub> to canine.....	120 mm.	4 $\frac{3}{4}$ in.
Antero-posterior diameter of canine at base.....	50 mm.	2 in.
Transverse diameter of canine at base.....	28 mm.	1 $\frac{1}{8}$ in.
Height of canine measured from internal border to tip of crown.....	69 mm.	2 $\frac{3}{4}$ in.
Distance from most anterior portion to the base of canine.....	88 mm.	3 $\frac{1}{2}$ in.
Width of symphysis between bases of canines.....	43 mm.	1 $\frac{3}{4}$ in.
Length of symphysis.....	191 mm.	7 $\frac{1}{2}$ in.

Comparisons of the measurements with those of other camels will show what an imposing creature *Titanotylopus nebraskensis* must have been in life. The skull must have passed 32 inches in length.

A section, by Crabill and Schultz, at this pit, NW $\frac{1}{4}$ , Sec. 17, T. 2 N., R. 11 W., is as follows:

- 1, Soil, 6 inches.
- 2, Peorian Loess, 4 feet to 20 feet.
- 3, Old Soil line, 1 foot.
- 4, Loveland Loess, 9 feet.
- 5, Crossbedded sands and gravels with greenish gray clay lenses, probably Kansan, 19 feet. Mandible at the very bottom.

Camels were introduced in the Eocene by the pygmies *Protilyopus* and *Oromeryx*. As the ages passed camels grew larger in size and better in organization until there were realized such large examples as *Alticamelus*, *Pliauchenia*, *Camelops*, *Megatylopus* and *Titanotylopus*.

Those who are at all familiar with the winter climate of most of this country are ill-prepared for the statement that North America was the cradle of the camels. Later it became their cemetery. Relics of ancestral camels lie buried, sometimes profusely, in every formation from the Eocene to the

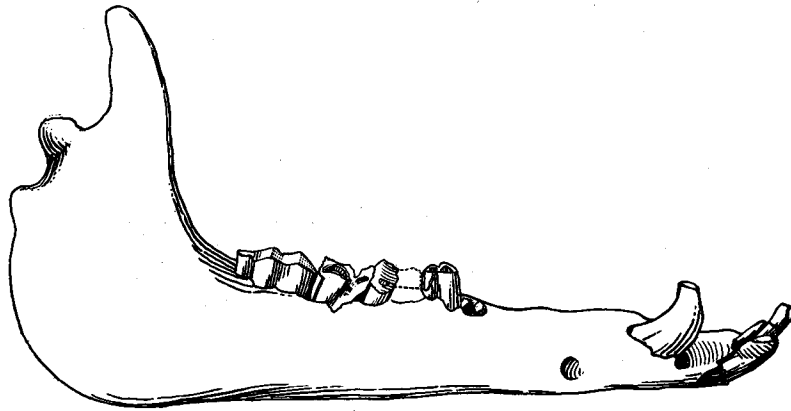


FIG. 171.—*Titanotylopus nebraskensis*, a giant camel. The right ramus of mandible. From Red Cloud, Webster County, Nebraska. Morrill Palaeontological Collections of the Nebraska State Museum. No. 1-6-9-33. About 1/6 natural size. Pleistocene, Kansan.

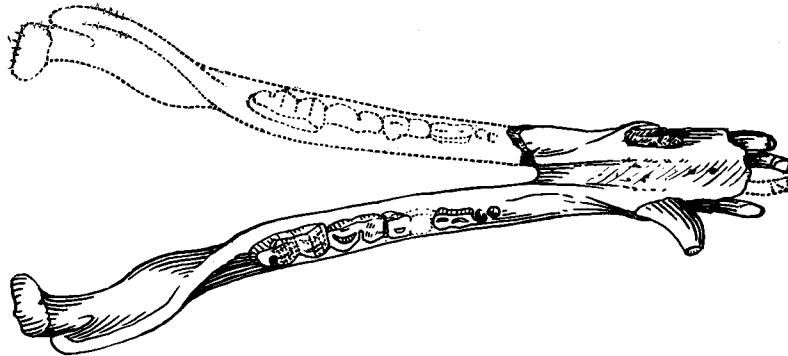


FIG. 172.—The same, crown view. The crowns of the molars are damaged more or less.

Pleistocene, and show that camels varied from pygmies in the start to giants at the finish. Nebraska seems to have been about the center of the great camel population and witnessed the many progressive changes which took place in this prolific group. With so many workers in the field and with such profusion of material and diversity of form, the geological history of the camel must eventually be complete. They were widely distributed in North America, and migrated into South America, where the llamas live today, and crossed to the Old World where camels still flourish. Out of the great assemblage of camels but two genera, namely, the Old World *Camelus* and the South American *Auchenia*, survive. Camels appeared late in the Old World, for the reason that they did not migrate from North America until the close of the Miocene. The frequent occurrence of their bones shows that they once roved over our plains in immense herds. For instance, several thousand of one genus, the gazelle-camel, *Stenomylus*, are known to lie buried in one bone quarry in central Sioux County, Nebraska.

#### A LARGE PHALANX

On the 29th of July, 1933, phalangeal bone No. 1 of some giant camel was found in a gravel pit of Pleistocene age  $1\frac{1}{2}$  miles south of Hartington, Cedar County, Nebraska. It was secured on an archaeological expedition by Dr. E. H. Bell and Dr. William Van Royen.

The size of this phalange is unusual, and we are referring it to *Titanotylopus nebraskensis*, to which it may properly belong.

#### MEASUREMENTS

Length of first phalanx No. 29-7-33,  $5\frac{1}{2}$  inches (146 mm.)  
Width of proximal end, 2 inches (51 mm.)  
Width of distal end,  $1\frac{1}{2}$  inches (38 mm.)  
Width of shaft at narrowest point,  $1\frac{1}{16}$  inches (27 mm.)

The University of Nebraska,  
Lincoln, Nebraska,  
December, 1933.