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## **Ibex Iowensis, First Evidence of Fossil Goat in North America**

By HARRIS A. PALMER

One of the problems dealing with the migration of Quaternary Bovid stocks from Eurasia to North America via the Bering Straits, is the extreme fragmentary nature of the fossil record. A number of the dozen or so genera now recognized have been established on the basis of single fragmentary specimens. Many times these consist of isolated bone fragments such as horncores, partial crania, dentitions and even less diagnostic elements of the axial skeleton. As recently as 1937 species of two genera new to the North American continent were identified from Alaskan deposits on the basis of similar fragmentary remains (1).

It is with considerable interest, therefore, that the occurrence of a member of the goat group (genus *Capra*), previously unknown to the American scene, is described from the Quaternary of Iowa. The specimen in question, represented by a partial cranium with horncores, appears to be that of a fossil *Ibex*.

Like many other fossil vertebrate remains from Iowa, this was a river bed find and lacks stratigraphic dating. The skull was removed from a sandbar in the Iowa River, in the SE  $\frac{1}{4}$  of Sec. 3, T. 83N., R. 17W., near the village of Quarry, a few miles southeast of Marshalltown. The boundary between the Kansan and Iowan drift as delineated on the glacial map of Iowa, crosses the river in this immediate vicinity.

The cranium was submitted to the Frick Laboratory of the American Museum of Natural History for identification. In the words of Dr. Frick, "This partial cranium with horncores is indeed an exciting find in that it seems to represent nothing less than that of an *Ibex*. If the specimen, as it would seem, is a Pleistocene fossil, it is the first definite evidence known to me of the presence in America of a member of the *Ibex* group. In a preliminary comparison with the museum's series of Recent *Ibex*, this specimen comes nearest to examples from Italy (2).

It is well known to European anthropologists that the *Ibex* of normal Alpine habitat, descended northward on to the plains during much of middle and late Pleistocene time. Many of the Paleolithic archeological sites of western Europe contain *Ibex* remains, and replicas of this animal are well documented in both portable and mural art of those times. It requires a long stretch of the imagination, however, to project this creature many thousands

of miles eastward to the plains of Iowa, without leaving, at least in America, intervening traces of its kind along the route of migration. Literature describing Siberian Pleistocene fauna is meagre and generally unavailable to American investigators.

In Europe, successful crosses have been made between the *Ibex* and the domestic goat. It seems unlikely that such a domestic hybrid would have been imported to Iowa in the early days of immigration. The brown patina on the specimen almost precludes this interpretation, as it is identical in all respects with the patina usually occurring on bones of known Pleistocene age especially those derived from organic beds.

The chart accompanying this report is a simplified version of the taxonomy of the Superfamily Bovoidea according to the interpretation of Frick (3). The writer proposes the name *Ibex iowensis* on the sub-generic level as the type for North America.



Figure 1. Two views of the partial cranium *Ibex iowensis*. The horncores are triangular in cross section and have sharp anterior edges. Base of cranium to tip of horn-core is about 11 inches; width between projected core tips about 5 inches.

TAXONOMY OF THE SUPERFAMILY BOVIDAE (after Frick)  
DIVISION A. ANTILOPINI

Subfamily 1. ANTILOPINAE

- I. *Neotragocerus*
- II. *Oreamnos*
- III. *Saiga*

DIVISION B. OVINI

Subfamily 2. EUCERATHERINAE

- IV. *Euceratherium*
- V. *Preptoceras*
  - (a) *Aftonius*
  - (b) *Taurotragus*

- Subfamily 3. OVINAE  
 VI. *Ovis*  
 VII. *Capra*  
     (c) *Ibex iowensis*
- Subfamily 4. OVIBOVINAE  
 VIII. *Ovibos*  
 IX. *Symbos*  
 X. *Bootherium*

## DIVISION C. BOVINI

- Subfamily 5. BOVINAE  
 XI. *Bos*  
 XII. *Bison*  
 XIII. *Superbison*

The probable affinities of the specimen are indicated in this taxonomic scheme by the insertion of the genus *Capra* within the family Ovini. The horn curvature of the *Ibex* group is intermediate between that of the Ovini and the Antilopini, so the decision in favor of the former is based more upon the taxonomy of living, rather than fossil forms.

In closing, acknowledgement is made to Mr. John Smith of Laurel, owner of the specimen, Conservation Officer Walter Harvey of Marshalltown, and Mr. Jack Musgrove, Director of the State Historical Museum at Des Moines, for their co-operation in making the cranium available for study.

## Literature Cited

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2. \_\_\_\_\_, Personal Communication.
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