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**Article XXIV.—LIST OF THE PLEISTOCENE FAUNA
FROM HAY SPRINGS, NEBRASKA.**

By W. D. MATTHEW.

In 1893 and 1897 field-parties from the American Museum were sent out by Professor Osborn to collect in the Pleistocene at this locality, a bone-bed near the Niobrara River, not far from Hay Springs. A large collection of horse and camel remains was obtained, and a few specimens of other animals. The horses have been carefully studied by Mr. Gidley, the camels by Dr. Wortman; the remainder of the fauna has been revised and partially studied by the writer, but no results have hitherto been published. A list of the fauna may be of some interest to compare with that found in the Sheridan or Equus Beds at other localities. The appended lists, when based on materials in the Cope Collection, are from determinations by Professor Cope, revised in a few cases by the writer.

HAY SPRINGS, AMERICAN MUSEUM COLLECTION, 1893 AND 1897.

Canis ? latrans. Lower jaw.

? **Dinocyon** or large Ursid. Metacarpal. This bone appears to exceed in size the corresponding parts in any living species of bear. The character of the diaclasts excludes it from the Felidæ or typical Canidæ, but the Amphicyonine Dogs are somewhat similar, and if not a bear it might represent a very large species of *Dinocyon* (*Borophagus*), a genus known to occur in the late Pliocene (Blanco).

? **Felidæ** indet. Several species are represented by foot-bones and fragments of limb-bones.

Fiber zibethicus. A skull and several jaws, all of which come within the limits of variation of the modern muskrat.

Arvicola, cf. **amphibius.** Upper and lower jaws.

Cynomys, cf. **ludovicianus.** Palate.

Thomomys sp. indet. Upper and lower jaws.

Castoroides sp. indet. Teeth, limb-bones, and astragali.

Mylodon sp. indesc. A complete skull, jaw, and large part

of the skeleton of a sloth allied to but distinct from *Mylodon harlani*. Description is reserved for the present.

Equus complicatus Leidy. This, the first-described and most characteristic of American fossil horses, is by far the most abundant fossil at the Hay Springs locality. Numerous bones of all parts of the skeleton were obtained.

Equus fraternus. Smaller and not nearly as abundant as *E. complicatus*.

Equus ? scotti Gidley. Upper and lower jaws.

Elephas primigenius columbi. Tusk, several foot-bones, and grinders.

Platygonus vetus Leidy. Palate.

Platygonus compressus Leconte. Upper and lower jaws.

Undescribed Porcine, cf. ? *Leptochærus*. Upper premolar (obtained in digging a well near Hay Springs).

Camelops kansanus Leidy. Parts of jaws, teeth, vertebræ, limb- and foot-bones. More than one species is quite probably represented, but the material does not warrant attempt at separation.

Camelops vitakerianus Leidy. Teeth, jaw fragments, etc.

Camelus americanus Wortman. Lower jaw.

Antilocapra, cf. americana. Parts of jaws, limb- and foot-bones.

Capromeryx furcifer, n. g. et sp.

A small jaw containing p_2 - m_3 indicates an animal allied to *Antilocapra* and somewhat more nearly to *Merycodus*, but generically distinct from either. The premolars are most nearly like those of *Merycodus*; p_4 is long, trenchant, simple, lacking the deutoconid; p_3 and especially p_2 are more complicated. In *Antilocapra* p_4 is shorter, with prominent deutoconid, and the anterior premolars are short and simple, thus approaching the premolar characters of goats and sheep. The molars in *Capromeryx* are fully as hypsodont as in *Antilocapra*, much more so than in *Merycodus*, which more nearly approach the brachydont teeth of the deer.

The species was of about two-thirds the (lineal) dimensions of the American antelope.

This unexpected addition to the short list of Ruminants of the American Pleistocene is rather interesting despite its fragmentary character. It is, much more certainly than *Antilocapra*, descended from the little group of antelope deer of the American Miocene, of which *Blastomeryx*, *Cosoryx*, and *Merycodus* are the known forms. This group is characterized by the combination of antlers approaching those of the deer and teeth approaching those of the antelopes. The antlers are forked or several times branched, provided usually (if not always) with a burr,—hence, in Professor Cope's opinion, deciduous; smooth surfaced,—hence probably covered permanently with 'velvet.' The teeth are more hypsodont than in any of the deer, less so than in *Antilocapra*, and the premolars have preserved somewhat of that primitive, long, trenchant character seen among modern genera only in *Tragulus*, but generally present among the older Tertiary selenodonts. *Blastomeryx* (*B. gemmifer*) is the oldest, smallest, and most brachydont genus; *Merycodus* is more hypsodont. *Cosoryx* has a simple forked antler, just above the eyes, like the horn of *Antilocapra*, with a burr at base, and quite hypsodont teeth.

Blastomeryx has antlers like those of the Virginia deer, but I have not seen more than four tines; the face is very short and the antlers more nearly over the eyes than in modern deer, less so than in *Antilocapra*. The position of *Merycodus* is uncertain; present evidence indicates that it may be distinct from *Cosoryx*. The large, completely brachydont species referred by Cope and Scott provisionally to *Blastomeryx* and by Douglas to *Palæomeryx* are distinct from any of these antelope deer (and from any European genus as well), forming a transition between them and the contemporary and later true deer of Europe and America. The new genus, *Capromeryx*, may, when better known, prove to be a transition between the antelope deer and *Antilocapra*.

The above list is obviously a plains fauna. Horses and camels are the most abundant. There are antelopes, but no deer; Canidæ are found, but few if any Felidæ. *Platygonus*

is much more swift-footed and more advanced in dentition than is the modern peccary, and may be supposed to have lived more in the open. Prairie-dogs, gophers, and field-mice are now to be found on the plains in the same region, and muskrats along the streams. Of the habits of *Myiodon* we know little; perhaps it, like the mammoth, frequented the watercourses and valleys of open country, rather than the denser forest regions which were the home of the contemporary mastodons. The *Castoroides* remains are too fragmentary to tell whether it was the same as the eastern species.

SILVER LAKE (LAKE CO.), OREGON.¹

- Canis* ? *latrans*, jaws, limb- and foot-bones.
Canis, cf. *occidentalis*, limb- and foot-bones.
Vulpes, cf. *pennsylvanicus*, femur and tibia.
Lutra canadensis, front of skull, jaws, limb-bones.
Fiber zibethicus, jaws, limb-bones.
Arvicola sp. div., jaws, limb-bones.
Thomomys sp., skeleton nearly complete.
Geomys sp., jaws, limb-bones.
Castor sp., one molar.
Castoroides sp., teeth.
Lepus sp. (cf. *campestris*), parts of jaws, limb-bones, etc.
Myiodon sodalis Cope (? = *M. harlani*), phalanges.
Equus pacificus, numerous bones from all parts of skeleton.
Elephas primigenius ? *columbi*, teeth, foot-bones, vertebræ,
 etc.
Platygonus, cf. *vetus*, teeth.
Platygonus sp. minor, teeth.
Eschatus conidens, parts of jaws.
Camelops kansanus, parts of jaws, limb- and foot-bones.
Camelops vitakerianus, upper jaw, ? foot-bones.
 ? *Camelops* sp. max., teeth, foot-bones, etc.
Antilocapra, fragments of feet.

With the above mammalia were found numerous bird remains, which have been studied by Dr. Shufeldt.

¹ Revised from Prof. Cope's list.

This is equally a plains fauna, with two aquatic mammals, *Castor* and *Lutra*, not found at Hay Springs. Otherwise the list is very similar to that of Hay Springs, and, like it, is characterized by the absence of the forest types found in the Pleistocene cave deposits, river-gravels, and peat-bogs of the East.

OREGON DESERT.

A collection made by Geo. C. Duncan at some point or points of which I can find no exact record. The collection was considered as of Pliocene age by Professor Cope, because it contained *Equus*, *Hipparion*, and *Teleoceras*, along with less characteristic remains referred to *Holomeniscus* (= *Camelops*) and *Elephas*. The *Equus* and *Elephas* bones, however, are from a different matrix from the other bones, and the *Holomeniscus* is more probably *Plianchenia* or *Procamelus*. They are, therefore, probably from two distinct formations, the older one of the age of the later Loup Fork, the newer one of the age of, if not identical with, the Silver Lake Equus Beds.

WASHTUCKNA LAKE, WASHINGTON.

Taxidea sulcata (= *americana*), parts of skulls, jaws, limb- and foot-bones.

Felis, cf. *imperialis*, parts of limb-bones.

Felis, cf. *concolor*, parts of limb-bones.

Felis, cf. *canadensis*, parts of limb-bones.

Myiodon sp., astragali and foot-bones.

Equus sp., bones of feet and some teeth.

? *Camelops*, cf. *kansanus*, foot-bones.

? *Camelops*, cf. *vitakerianus*, foot-bones.

? *Camelops*, sp. max, foot-bones.

Alces brevitrabalis, parts of antlers, foot-bones, etc.

Alces semipalmatus, parts of antlers, foot-bones, etc.

Cariacus ensifer, parts of antlers, foot-bones, etc.

Oreamnus, parts of horn.

This fauna shows a large proportion of forest and mountain types, and no aquatic mammals. It is a very inadequate list,

and I have seen no description of the locality where the specimens were found, but it is probable that the physical conditions were quite different from those prevalent in the Silver Lake and Hay Springs localities.