Article XIII.—A NEW SPECIES OF PLEISTOCENE HORSE FROM THE STAKED PLAINS OF TEXAS.

By J. W. GIDLEY.

Equus scotti, sp. nov.

The type of this species is a nearly complete skeleton (No. 10606), consisting of the skull and lower jaws, the cervical vertebræ, the three anterior dorsal vertebræ, both fore limbs and feet complete, and one hind limb and foot, besides several other vertebræ and some ribs probably belonging with it.

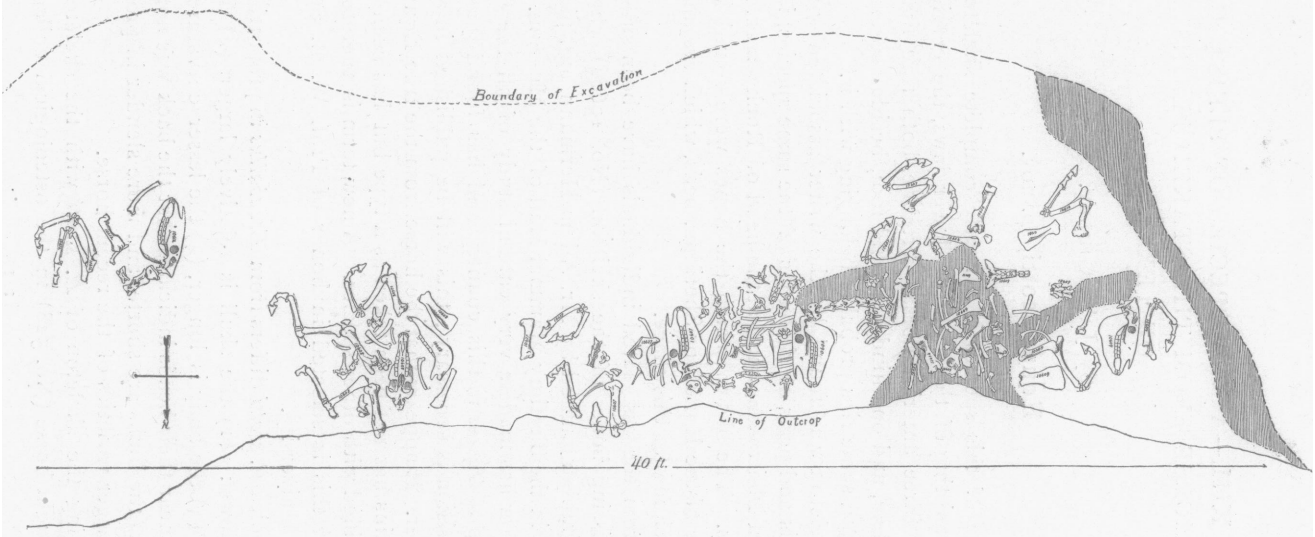
This skeleton was found by the writer associated with four other skulls and parts of skeletons of the same species, in a bed of compact Pleistocene sand at the head of Rock Creek, Briscoe Co., Texas. The bed in which the bones were found is about the middle of the Equus, or Sheridan, beds, which are about 100 feet in thickness at this place.

Bones from the associated individuals have been substituted for the missing bones of the skeleton (No. 10606) which has been admirably mounted by Mr. Adam Hermann, and placed on exhibition in the Tertiary Mammal Hall of the Museum.

The writer has made a very careful study of all the types of the species of *Equus* in this country and has found that an extensive revision is necessary; this will be published in a subsequent paper. It appears that the horse from the true Equus beds of the Plains has not been taken as a type but has been mistakenly identified with other species. A new term is therefore necessary and this is selected in honor of Prof. W. B. Scott, of Princeton University.

The species *E. scotti* differs from *E. caballus* in proportions and size as follows: (1) the skull is relatively larger, (2) the neck is shorter, (3) the body is longer, (4) the lesser curvature of the belly ribs near their heads indicates that the back was not nearly so wide, (5) the limbs are shorter and more slender in proportion than the larger varieties of the recent horse.

Comparing the skeleton of *E. scotti* with the skeleton of a larger draught horse (No. 528) in the osteological collection of



[112] Fig. 1. Sketch showing number and position of remains of *E. scotti*.

the Museum we observe some striking differences. While the skulls are about equal in length and the series of dorso-lumbar vertebræ is only about 1 inch longer in the recent horse, the cervical series of *E. scotti* is about 4 inches shorter and the fore limb, in the standing position, is about 6 inches less in length.

Thus, this skeleton represents an animal with a head about the size of that of a large draught horse, but with the height of body and length of limbs of an ordinary western pony, and with a length of body very similar to that of the Zebra or Quagga.

A comparison of the separate bones of the skeleton reveals very few and unimportant differences, hence it is to the skull and teeth that we have to look for specific differences.

Dentition.

Unfortunately all the bones of these skeletons, while adult, are of young horses, none of them having shed their last milk molars or external milk incisors. As far as can be made out the teeth differ from those of *E. caballus* only in their much larger size. M^1 of the type skull (Fig. 2), indicates perhaps a little greater degree of complexity of the enamel folding on the triturating surface than is usual in *E. caballus*, but it should be taken into account that this is only a slightly worn tooth and shows a greater degree of complexity than it would at a more advanced stage of wear.

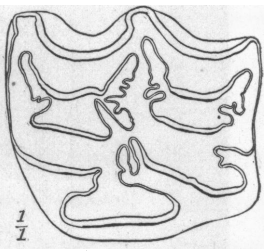


Fig. 2. M^1 of *E. scotti*.

The measurements of the teeth that are enough worn to give their true diameters are as follows :

Diameters of crown of p^3	antero-posterior	33 mm.
	transverse	31 mm.
Diameters of crown of m^1	antero-posterior	32 mm.
	transverse	30 mm.
Long diameter of i^1		23 mm.
Total length of molar-premolar series		190 mm.

Diameters of the corresponding teeth of the large draught horse (No. 528):

Diameters of crown of p^3	antero-posterior	29 mm.
	transverse	27 mm.

Diameters of crown of m^1	antero-posterior	25 mm.
	transverse	25.5 mm.
Long diameter of i^1		18 mm.
Total length of molar-premolar series		172 mm.

Thus it is seen that while the skulls of these individuals representing two species are of about the same size, the teeth of

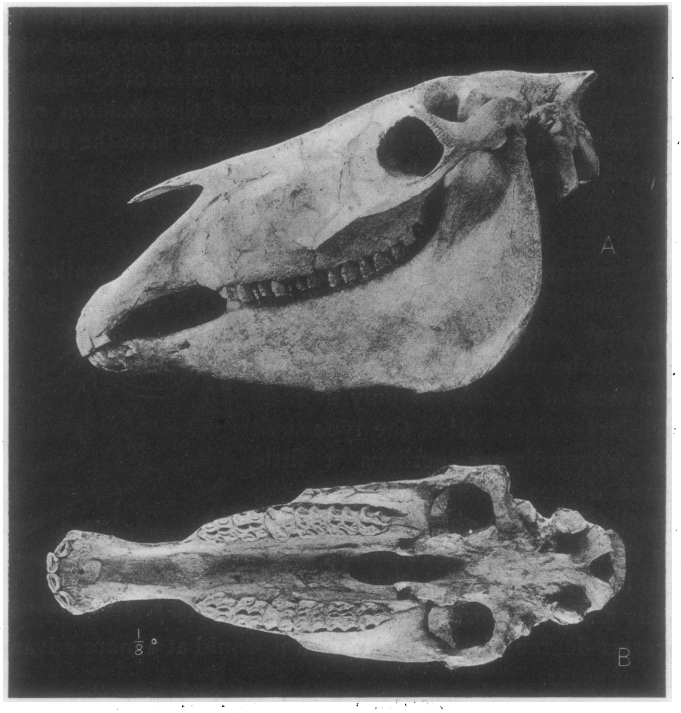


Fig. 3. Skull of *E. scotti*.

E. scotti (Fig. 3) are much larger and the whole masticating apparatus is proportionately shorter and better adapted to grazing than in *E. caballus* (Fig. 4); although the proportion of teeth to skull is not much greater than in the pony. The teeth seem to differ from *E. eous* Hay,[1] a species from Louisiana described by Cope under the name of *E. intermedius*,[2] only in their somewhat larger size.

[1] Science, 1899, p. 593.
[2] Proc. Am. Phil. Soc., Vol. XXXIV, p. 463.

Comparison with E. caballus.

The nose of *E. scotti*, from the anterior premolar forward, is as much elongated as in *E. caballus* and in this character it differs entirely from *E. eous* which has a very much shortened nose. To make up apparently for the longer molar-premolar series, the

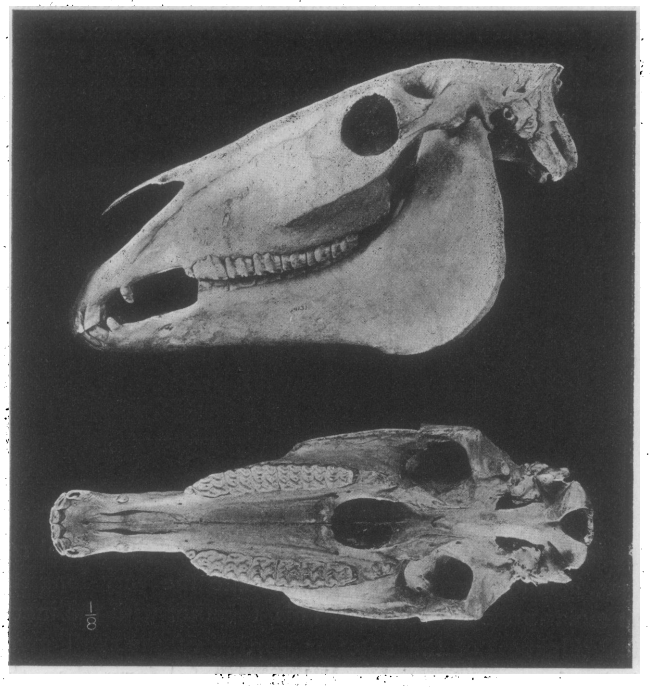


Fig. 4. Skull of *E. scotti*.

skull is very much shortened in the portion between the last molar and the occipital condyles and most of this shortening seems to be in the basioccipital region, the orbits being placed much farther back. The maxillary ridge commences about the middle of p^4, while in *E. caballus* this ridge does not usually extend farther forward than the anterior portion of m^1. The vertical thickness of the skull measured immediately behind the last molar is about the same as in the large skull of *E. caballus*, but the thickness of the forward portion of the skull from the face of

the anterior premolar to the top of the nasals is much greater in *E. scotti.* The processes of the frontals inclosing the posterior portion of the orbits, slope more backward and are much narrower than in *E. caballus.* The occiput seems to be more overhanging; this is due probably to the great shortening of the basioccipital bone. The basioccipital ridge is not so compressed and the fossæ inclosed between the paroccipital processes and the condyles are much deeper. In these last two characters *E. scotti* (Fig. 5, *A*) is like *E. occidentalis* Cope (not of Leidy).[1] The posterior region of the skull, the posterior nares and the palate are narrower than in *E. caballus.*

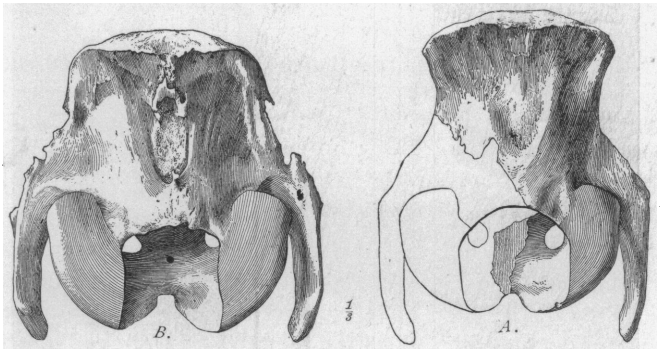


Fig. 5. *A*, occipital view of *E. scotti*; *B*, occipital view of *E. caballus.*

The lower jaw is more massive especially in the dental region. The jaw is much deeper, to accommodate the very long crowns of the molar-premolar series. This, together with the increased vertical thickness of the anterior portion of the skull, gives the whole head a more massive and less graceful form than that of *E. caballus.* Owing to the greater antero-posterior length of the molar-premolar series, the jaw seems to curve upward much more abruptly from the posterior molar. The symphysis mandibuli is heavier and longer than in *E. caballus*, extending back of the mental foramina. The jaw seems compressed laterally at the posterior part of the symphysis, owing to the wide expansion, anteriorly, to accommodate the wide incisors.

The other bones of the skeleton, taken separately, seem to be indistinguishable from those of *E. caballus.*

[1] Proc. Am. Phil. Soc., Vol. XXII, p. 11.