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Article XII.— NOTES ON THE TRAPEZIUM IN THE EQUIDÆ.

By S. H. Chubb.

The trapezium, a bone generally believed to be of very rare occurrence in the domestic horse, seems much more frequently present than has been supposed and careful dissection will no doubt show that it is well worthy of being included in the horse skeleton although it has no important function at the present time. It is rather surprising that it should still exist when the first digit, with which it functioned, must have ceased to be of service early in or before the Eocene epoch.

The writer obtained a miscellaneous collection of 35 sets of carpal bones from adult horses. These also included in most cases the proximal end of the metacarpus. The specimens procured in the flesh were carefully dissected and cleaned with the result that in 57% the trapezium was found perfectly well-defined though varying considerably in size and shape, the larger ones being roughly triangular and about 17 mm. in their greatest diameter. The smallest in the collection is 5 mm. Many of the larger ones have well-defined facets articulating with the trapezoid and also with the 2nd metacarpal (inner splint bone) while the majority articulate only with the trapezoid. Several of the smaller specimens have no articulation whatever, but were simply lodged among the ligaments. With the exception of some of the larger bones there is no uniformity of character but simply an irregularly shaped nugget of bone, so that it would be impossible to identify one if found out of place. Fig. 1 shows one of the more developed specimens and also an average example.

A most unexpected find in the preparation of these specimens was a vestigial 5th metacarpal (Fig. 2). This bone is 16 mm. in length and 7 mm. in diameter and articulated with the 4th metacarpal (outer splint bone). In shape and general appearance it is wonderfully similar to the 5th metacarapal of one of the Middle Oligocene horses *Mesohippus,* also shown in Fig. 2. (No. 9777 American Museum collection.)

Trapezium of the Asses and Zebras.— Judging from the more definite character and comparative uniformity of the trapezia examined in the several species of asses, I should rather expect to find it constant in these species, although it would be unwise to speak positively on this point in view of the small number of subjects examined.

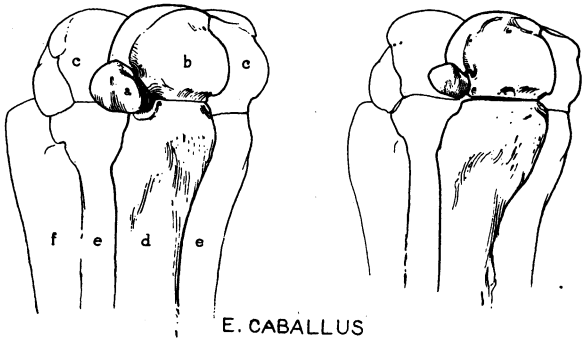

Fig. 1. Distal row of carpal bones and proximal end of metacarpus showing trapezium in place. ½ nat. size.

a, trapezium; *b*, trapezoid; *c*, magnum; *d*, 2nd metacarpal; *e*, 3rd metacarpal; *f*, 4th metacarpal.

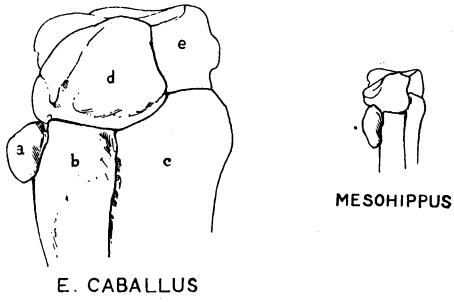

Fig. 2. Lateral view of metacarpus showing 5th metacarpal; ½ nat. size. *a*, vestigial 5th metacarpal; *b*, 4th metacarpal; *c*, 3rd metacarpal; *d*, unciform; *e*, magnum.

The Kiang (*Equus hemionus*).— In this specimen, the wild ass of northern Asia (Fig. 3), the trapezia are perfectly paired and have none of the abortive appearance characteristic in the horses and have no articulation with the 2nd metacarpal.

The Domestic Ass (*Equus asinus*).— In the domestic ass (Fig. 3) they are as nicely formed as in the kiang and are placed low on the trapezoid, having a well developed facet for articulation with the 2nd metacarpal.

In the zebras the few specimens at hand would seem rather to point to the same or a greater irregularity than in the horses.

In Grevy's zebra (*E. grevyi*) the trapezia are placed much higher on the trapezoids than in the asses, widely separating them from the 2nd metacarpal below. The left one is imperfectly formed and much smaller than the right.

E. granti, the last specimen figured, gives further evidence of irregularity.

The right trapezium is very small and simple in form, while on the left side it is entirely absent.

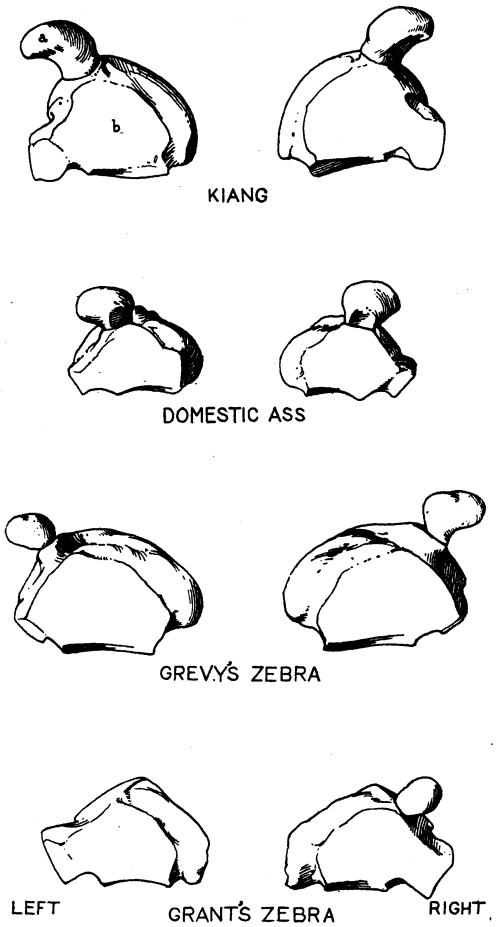

Fig. 3. Trapezia and trapezoids of asses and zebras. Inferior surface. Natural size. *a*, trapezium; *b*, trapezoid.

After more extensive examination the trapezium may prove to be very irregular in the zebras, but in *E. caballus* at least it seems quite permissible to include it when considering the skeleton.