Like the rest of the material of Natural Trap, the first phalanges (Ph1) were measured by John Howe and his student(s). John Howe sent me copies of these data on nine sheets. Some data appeared redundant, either because they originated from the right and left side of the same animal or because the same specimen was measured twice by the same researcher or by two different ones. In Table 1 you may find the original data and in Table 2 - the ones I have decided to use.

One measurement (6 : supra-articular distal width) useful for distinguishing anterior from posterior phalanges was missing, and three other were at times inconsistent (7 : length of trigonum phalangis ; 10 : supra-tuberosital length and 13 : infra-tuberosital length) ; they were not used for the sorting.

A few phalanges were obviously different from the rest by their slenderness and/or their size (Fig.0). They will be discussed later. But the bulk of the material (ca. 130 slender middle-sized specimens) took me several weeks to sort out as anterior or posterior, and I am not even absolutely certain of the result.

****Middle-sized slender Ph1 (*A*. cf. *pseudaltidens*)****
In extant Hemiones, the anterior phalanges are almost always longer than the posterior, and the posterior are relatively broader and deeper. Although the slender Ph1 of Natural Trap do not belong to Hemiones, I tried to sort them out according to these criteria.

First I drew a scatter diagram of width at the middle of diaphysyis (3) versus maximal length (1). There appeared a kind of separation at between 81mm and 83mm of length. I decided to keep in mind that phalanges longer than 82.5 were probably anterior and those shorter than 81.5 - posterior, leaving a doubtful zone between 81 and 83 (Fig.1). This diagram evidenced the existence of five ’aberrant’ specimens. It showed also that the width 3 was roughly the same in both groups.

I decided to attempt an ’unorthodox’ approach by plotting the maximal lengtth versus the slenderness (Fig.2). Three of the five previous aberrant Ph1 were still present ; in addition two ’anterior’ Ph1 plotted with the posterior, one well inside and the other in what could be considered as an ’overlap’ zone.

The next step was to find the best way to use other data i.e the proximal and distal widths (4 and 14) and the proximal depth (5). The conventional scatter diagrams were not very helpful and I resorted again to unorthodox ones (Fig.3-6).

Eventually I decided to consider 67 Ph1 as anterior, and 65 as posterior. The Simpson’s diagrams in Tables 3 and 4 show why I could not use the measurements 7 and 13 to sort the Ph1 into anterior and posterior. In accordance, they do not appear on the individual Simpson’s diagrams in Fig.7 and 8. Simpson’s diagrams of indet and problematic Ph1 are given in Fig.9. Unfortunately, I was unable to find any data of similar Ph1 apart a few specimens from Hay Springs measured by John Howe (Fig.11).

****Large slender Ph1****
There are only four of them (Fig.10). I am not certain that they are all anterior nor that they belong to a species different from the previous. There again I have no match except one Ph1 from *E. semiplicatus* of Hay Springs (Fig.11).

****Very large anterior Ph1****
It is strikingly similar to *A. occidentalis* anterior Ph1 from Rancho La Brea (Fig.12).

****Caballine Ph1****
Six anterior and five posterior are close in size and proportions to extant horses’ phalanges (Fig.13). One is Icelandic horse, the other Mongolian.

*****A. leoni*-like Ph1****
I refer to *A. conversidens* five anterior Ph1 and four posterior (Fig.14-15). I found the data for comparison in Dalquest 1967 (Conkling and Slaton) while Arthur Harris kindly communicated his data on Dry Cave.

HARRIS A.H. & PORTER L.S.W. 1980. Late Pleistocene Horses of Dry Cave, Eddy County, New Mexico. Journal of Mammalogy 61(1) : 46-65.