VARIABILITY SIZE INDEX (VSI)

The Variability Size Index (VSI) is one of the size index scaling techniques used by archeozoologists (Uerpmann 1982, 1986; Meadow 1986, 1999). Using this technique, global size comparisons are possible even of samples of various but fragmentary and not numerous bones. It enables to evidence temporal fluctuations, as in the case of Quaternary horses (Eisenmann & David 2002).

A good sample including all the bones of a taxon is choosen as reference*.* Mean and standard deviation are calculated for each measurement of this sample*.* The comparisons are done using the following formula: VSI (variability size index) = 25(x-m)/s where (s) is the standard deviation of the mean (m) of the reference measurement to which another measurement (x) is being compared. The obtained values are plotted on a histogram graduated in one, two, three, or more standard deviations from the reference*.* As phrased by Meadow (1986), ‘Using this formula, the standard dimension is set at zero; a measurement one standard deviation larger than the standard (reference) dimension will be plotted at 25, one standard deviation smaller at –25, etc’.

In theory, all adult skeletal measurements can be used but it is advisable not to mix lengths, breadths and depths, and - if possible - not to use several measurements for the same specimen. In practice, the choice depends on the richess of the studied sample and its composition.

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Meadow R.H., 1986. - Some Equid Remains from Cayönü, Southeastern Turquey. In : MEADOW R.H. & H.P. UERPMANN, eds, Equids in the ancient world. Beihefte zum Tübinger Atlas des Vorderen Orients, Reihe A : 266-301, 3 fig., 7 tabl., Wiesbaden

Meadow R., 1999. - The use of size index scaling techniques for research on archaezoological collections from the Middle East. In : Historia Animalium ex Ossibus. Festschrift für Angela von den Driesch zum 65. Geburtstag, 285-300. Internationale Archäologie, Bd 8 : Studia honoraria. Verlag Marie Leidorf, Rahden, Westf.

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VSI OF HORSES

The reference is the horse of Jaurens (table), 29.300 to 32.600 years old (Mourer-Chauviré 1980), for which personal measurements were used.

Choice

The histogram of the VSI is based on proximal or distal articular metapodial breadths (MC 5 or MC 11, MT 5 or MT 11), distal articular breadths of Tali (Astr 5), maximal lengths of anterior and posterior first phalanges (PhIA 1 et PhIP 1), minimal breadths of anterior and posterior second phalanges (PhIIAP 3), and articular breadths of anterior and posterior third phalanges (PhIIIA 5 et PhIIIP 5). The choice was dictated by the composition of the material and by the wish to use one single measurement by specimen.

VSI OF ALLOHIPPUS

Equid fossils from the old collections from Saint-Vallier give, by their abundance and variety, an ideal reference for the comparison of most Plio-Pleistocene equids.

Choice

Seventeen categories of skeletal dimensions (one breadth by specimen) were used for calculating the size index of the equid from Saint-Vallier (table, histogram).