ABSTRACTS

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Only a limited number of studies have been performed on the primate caudal region, despite the importance of the tail in primate behaviour and taxonomy. Six measurements of the first caudal vertebra were recorded from a sample of 32 primates, including strepsirrhines, platyrrhines, and catarrhines. These data were analysed using both univariate and multivariate statistical methods, and were compared to estimations of tail length for the purposes of predicting the length of the tail from primate skeletal remains.

It was determined that by using discriminant function analysis it is possible to discriminate among three categories of primate tail length (short, intermediate and long) using only six linear measurements of the first caudal vertebra. In addition, measurements of the inferior surface of the first caudal vertebral body were determined to be the most influential variables in estimating the length of the primate tail. These preliminary analyses are meant to build a frame of reference from which to help clarify our knowledge of the evolution of tail loss and reduction among the catarrhines, particularly the hominoids, and in general may contribute to a greater understanding of the morphology and positional behaviour of fossil primate species.

Which anthropometric measures best predict body fat percent measured by electrical bio-impedance?

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Anthropometric measures are a favorite means to collect data in field studies, since electrical bio-impedance apparatus may be costly or may simply not be available because of logistic reasons (no electrical output or exhausted batteries). Therefore, it is of use to determine which anthropometric measures best predict fat content, as measured by bio-electrical impedance analysis (BIA). Here we report data on a study with a small group of adult male and female Indo-Costa Ricans, on whom we took standard anthropometric measures. Also, we collected data with a bioelectrical bioimpedance machine, which gave us measures of body fat percent, body water percent and lean body mass. The purpose of this paper is to determine which set of anthropometric variables best predicts body fat percent. Our results show that there is a significant positive correlation between BMI and the percent body fat (r_s=0.83370, df = 18, p< 0.001). The best model to predict body fat percent has five variables: -26.67 +0.20 (weight) + 0.28 (waist circumference)+0.28(hip circumference)+ 0.39(hip circumference)-1.44(mid-upper arm circumference)+0.62(triceps). This model is significant (F=18.71, def = 5, 18, p<0.001) and it has an adjusted R^2 of 0.83. The best six-

variable model adds to these five variables height, but it has a lower adjusted R^2. Subscapular skinfolds were not entered in the best models. This study shows that a combination of traditional antropometric measures can approximate fat percent measures taken with a bioelectrical impedance apparatus. This project was funded by a University of South Florida Globalization Research Center.

Harris lines in the first metatarsal bones

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Harris lines (HLs) are observed in the first metatarsal bones (FMBs) that are often better preserved than the tibias in archeological samples. We aimed to analyze the variability of HLs in FMBs, compare HLs in the FMBs and tibias, and determine the possible use of HLs in the FMB as stress markers.

We first studied 274 FMBs from the historic burial site at Notre-Dame-du-Bourg in Digne, France, selected within two archeological periods to highlight variations over time (11th-13thcenturies: 110; 16 th -17 th centuries: 164). Sex was determined by studying pelvic features (Bruzek's method). Samples were classified into three age groups by using Lovejoy's modified method: under 30, between 30 and 60, and more than 60 years. Further, 53 tibias from the same cemetery, 264 FMBs from 4 historical and 2 Neolithic sites were compared.

The bones were X-rayed using constant values of X-ray tube distance and radiographic parameters. HLs were defined as all narrow and dense lines extending across a quarter or more of the shaft width. The intraobserver, interobserver, side, and age-at-death variations were not significant. The prevalence of HLs was higher in the 16th-17th centuries sample, but no significant diachronic variations were observed between male and female samples. HLs in the tibias and FMBs were not statistically correlated. Comparison of the prevalence of HLs revealed significant differences between several samples, compatible witharcheological data. HLs in the FMBs exhibit significant intra- and interpopulation variations. However, further investigations are required to precisely determine their association with nonspecific stress.

Taking a closer look at the institutionalized: the late 19th century Colorado Insane Asylum.

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In late 1879, Colorado opened it's State mental hospital. During the first 20 years of operation, nearly 2000 individuals were

admitted. Slightly more than half were discharged after varying amounts of time, while about 500 died at the institution. A brief medical record kept by the asylum superintendent reveals key information about each individual including name, age, marital status, occupation, nativity, and mental illness diagnosis, or cause for admission. Using US census data as a control, we show that the patient population is not a direct reflection of the Colorado population. The medical records reveal that the vast majority of the men were laborers, miners, and farmers, while the women were domestics or housewives. For men, intemperance was an important cause for admission. Syphilis was an epidemic at this time, and it has been estimated that nearly 20% of admissions to mental institutions in the late 19th century would be due to the disease. We find, however, that only about 10-14% of patients at the asylum may have suffered from syphilis. Being single or widowed increased the risk of being admitted by nearly 1.3-2 times compared to those who were married, while males were at far greater risk of being admitted to the institution than females. Finally, immigrants, particularly female Irish immigrants, were at much higher risk of being institutionalized than were the native-born.

Identification of a distinct histomorphological feature of long bones: Potential applications in paleopathology and bioarchaeology.

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Regional variations in microarchitecture are known to affect local strength properties but are often difficult to observe or quantify. Specifically, the endosteal lamellar pocket (ELP) represents an example of easily distinguished micro-structural variation in the endocortex of long bones. In general, the ELP consists of one or several generations of dense endosteal lamellar growth. ELPs are notably devoid of Haversian systems in comparison to surrounding tissue and, instead, are vascularly organized by radially oriented Volkmann's canals. Preliminary observations have identified ELPs in mid-diaphyseal thin-ground sections of adult femora and humeri from Xcambó, Mexico, as well as the humeri and an ulna from the Dakhleh Oasis, Egypt. The ELP forms sometime during the second decade of life in roughly the same anatomical position in each individual. These observations suggest the ELP results from normal processes of long bone growth, specifically, modelling drift. As such, the ELP could provide evidence for periods of rapid change in long bone size and position during growth spurts. Should further investigations corroborate this