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## **The dental analysis of prehistoric skeletal remains of Pothana, Sigiriya, Sri Lanka**

A detailed analysis of dentition is of utmost importance in finding answers to specific questions regarding health status, dietary preferences, behavioral patterns and biological affinities of prehistoric populations, and is of paramount importance to archaeologists. Dental remains from prehistoric skeletal remains at Pothana date back to more than 4500 BP were used in this study. Permanent teeth (54 in no.) obtained from these adult human skeletal remains were studied. The detailed morphological and metrical analysis of permanent dentition was done and the crown index (B-L/M-Dx100) and robustness values (B-L x M-D) calculated for each tooth by following the methods described in Bass 2005 and Marting and Saller 1957 -1959, using measured mesio-distal and bucco-lingual diameters of lower molar teeth. The morphological traits: shovel shape of incisors, carabelli's cusp, taurodontism, para molar cusps and cusp number and molar groove pattern of mandibular teeth of the dentition were studied. The pattern of dental attrition, staining & discoloration of teeth and pathological conditions were studied.

The crown surface area (robustness value) of available lower teeth decreases Molar 1 (M1) > M2 >M3 and the crown index decreases M3 > M2 >M1 of Pothana skeletal remains. Five cusp patterns were observed in the available first lower molar and the four cusp pattern was observed in lower second and third molar teeth. The upper molar showed the four and three cusp pattern. The groove patterns were not observed on first and second molar due to high stage of attrition but Y groove pattern was observed on 3<sup>rd</sup> lower molar teeth. There was no evidence of crowding, taurodontism, shovel shaped incisors, artificial deformations, carabelli's cusp, para molar cusps. The attrition differential between the anterior and posterior dentition was clearly evident. High attrition was observed in most of the anterior teeth in many instances rather than in molar and premolar. This is comparable to the dental attrition pattern of Pomparippu population reported by Lukacs 1973, and the dental attrition pattern of Balangoda population by Kennedy 1986. This indicates the higher usage of anterior teeth by extinct population than the post canine dentition. The cause for the higher wear pattern on anterior teeth may be due to the higher usage of incisors and canines as tools to manipulate or to hold various objects. The pathological conditions including carious decay, periodontal diseases were absent in the teeth samples from Pothana. This is comparable to the reported good dental health state of Balangoda population by Kennedy 1973, and contrasts with the low dental health of Pomparippu population described by Lukacs 1973.

**Keywords: Dental analysis, Prehistoric population, Pothana**