

OSTEOLOGICAL EVALUATION

Prepared by
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Biological Anthropologist



Product No. BC-299

Adult Female Asian Skull



Bone Clones, Inc.

OSTEOLOGICAL REPRODUCTIONS

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Product Number: BC-299

Specimen Evaluated: Bone Clones® replica

Skeletal Inventory: Cranium and mandible

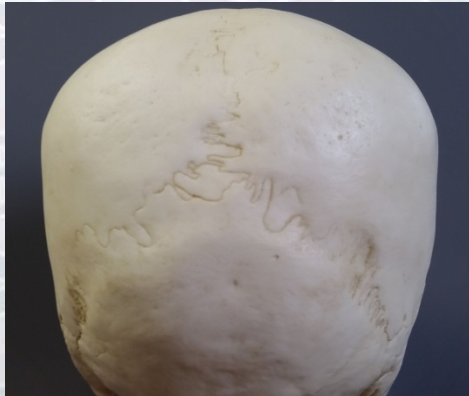
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Osteological Observations:

In general, the casting process has preserved sufficient details necessary for evaluation.

Features of Age:

This skull has been classified as an adult based on the presence of permanent dentition. Furthermore, the skull has been classified as a younger adult. This is based on the incomplete eruption of the lower left third molar and upper right third molar. This is also based on the degree of cranial suture closure, even though there is considerable variability in closure rates (Meindl and Lovejoy, 1985). In addition, miscellaneous traits were evaluated for general indications of whether the skull is from a younger or older adult. Age-related changes such as dental wear and osteoarthritis distinguish older adults from younger adults (Buikstra and Ubelaker, 1994). This skull does not exhibit any evidence of osteoarthritis or dental wear.



Posterior view of skull showing open cranial sutures.

Features of Sex:

Sex is determined most accurately by looking at traits on the pelvis and skull (Mays, 1998); the pelvis being the most reliable indicator (Buikstra and Ubelaker, 1994; Bass, 1995; Schwartz, 1995; White and Folkens, 2000). The absence of the pelvis in this case meant that determination of sex had to be made by visually scoring a variety of sexually dimorphic skeletal criteria evident in the skull. Morphological features such as the lack of robusticity of the nuchal crest, the small size of the mastoid process, the sharpness of the supraorbital margin, the lack of prominent muscle markings, and the projection of the mental eminence on the mandible suggest that this is a female (Buikstra and Ubelaker, 1994; Bass, 1995; White and Folkens, 2000).



Small mastoid process.



Mental eminence.

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Features of Ancestry:

Several morphological traits of the skull were used to determine the Asian ancestry of this individual. For example, the nasal root is long and narrow, the lower nasal border is flat and sharp with a small anterior nasal spine, and there is mild prognathism. All of these features are morphological traits indicative of Asians.

Trauma and Pathology:

There is evidence of healed blunt force trauma along the right lambdoid suture. The lesion has a well-defined circular shape, and the absence of reactive bone rules out an infectious etiology.

There is evidence of artificial cranial modification (oftentimes referred to as cradleboard deformation) on the skull. Artificial cranial modification is deformation of the cranium as a result of an infant's head resting against a board for long periods of time during its development (Brothwell, 1981; White and Folkens, 2000). In some cultures, people strap their infants onto a board called a cradleboard, and then carry it and the baby on their back. During this cranial development stage, the cranial vault flattens where it has been pressed against the cradleboard.



Artificial cranial modification.

There are linear enamel hypoplasias on the dentition. Growth arrest (when the cells responsible for tissue development are disrupted) is indicative of physiological stress during skeletal and dental development, and can lead to linear enamel hypoplasias. Canine teeth may be exclusively observed for evidence of linear enamel hypoplastic defects as indicators of overall metabolic stress. Canines are often used because the development of the crown takes slightly longer than other teeth (Berbesque and Doran, 2008). There are linear enamel hypoplasias on all of the canine teeth (as well as others) in this skull.



Linear enamel hypoplasias.

There is an impacted lower left third molar, and agenesis of the lower right third molar.



Impaction and agenesis of third molars.

SUMMARY:

1. Adult female Asian skull.

Educational Resources:

1. This is an excellent example of an adult female Asian skull.
2. All of the developmental skeletal changes are complete, which makes this a good candidate for discussing morphological traits in adults.

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Disclaimers:

This report is meant only as a teaching tool for introductory level students of the anatomical, anthropology, or forensic sciences who may be using this specimen to learn about human osteology. Evaluation of skeletal material is best done with original specimens. My evaluation was based solely upon studies of a Bone Clones® replica. My opinions are based solely upon the material presented to me, and are based only upon non-metric analyses.