

OSTEOLOGICAL EVALUATION

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**Human Female,
39-year-old, Postcranial Set**



Bone Clones, Inc.

OSTEOLOGICAL REPRODUCTIONS

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Human, Female, 39-Year-Old, Postcranial Set

Product Number: FM-534-SET

Known Information:

These are the lower postcranial remains of a 39-year-old European American female who died due to a shotgun wound to the head. She had at least one child and may have been pregnant at the time of death. This information was documented at the time of the individual's death.

Maxwell Museum of Anthropology:

The Maxwell Museum of Anthropology's Laboratory of Human Osteology, at the University of New Mexico, specializes in numerous facets of physical anthropology. The laboratory serves as a repository of human remains and includes prehistoric, historic, documented, and forensic remains.

Established in 1984 by Dr. J. Stanley Rhine, the Maxwell Museum's Documented Skeletal Collection has grown to include 237 individuals (as of July 2005) encompassing both sexes, all ages, and many population groups. The skeletal remains are obtained by donation, either by the individual before death, or by the family of a deceased loved one. Information on the sex, age, population affinity, and cause of death is available for the majority of these individuals, allowing students and visiting researchers to develop and test new techniques and theories.

Since 1995, prospective donors or their families have been asked to provide health and occupational data as well. With this information, researchers are able to examine the skeletal manifestations of particular diseases including degenerative joint and disc diseases, lymphoma, and osteoporosis, as well as the reaction of bone to repetitive motions and trauma. Recent research has included efforts towards the identification of handedness in individuals, determination of body mass from the skeleton, and variation in cranial damage from various projectiles. The importance of the Documented Collection cannot be overstated. No other institution in the American West has as large a collection of human skeletal remains with such extensive demographic data.

Bone Clones is grateful to the Maxwell Museum for allowing us to select specimens for reproduction from their valuable collection and granting us exclusive casting rights to these pieces.

Human, Female, Partial postcranial skeleton

PRODUCT NUMBER: FM-534-SET

SPECIMEN EVALUATED: Bone Clones® replica

SKELETAL INVENTORY: Right and left innominates
One sacrum
Right and left femurs

GENERAL OBSERVATIONS:

In general, the molding process has preserved significant details necessary for evaluation. The remains are totally skeletonized.

OSTEOLOGIC OBSERVATIONS:

General shape and configuration of the individual bones is within normal limits. There are no features suggestive of recent or remote trauma, nor is there evidence of significant primary or secondary bone disease.

TRAUMA:

All skeletal elements are atraumatic.

SEX DETERMINATION:

Pelvic morphology (female):

The pelvic inlet is somewhat rounded. The innominate bones are somewhat gracile, and sites for musculofascial attachment are not prominent. The ilium is not prominent in the superoinferior plane (i.e., does not extend vertically). There is a preauricular sulcus. The greater sciatic notch is broad. The subpubic angle is obtuse. The pubis is prominently widened. There is a ventral arc. There are no “pits of parturition” on the posterior surface of pubic portions of the innominates. There is a slight subpubic concavity. The ischiopubic ramus is thin, and its medial aspect has a sharply defined ridge. The obturator foramen is somewhat small and triangular.

The sacrum is short, broad, and prominently curved (in the anteroposterior plane).

The totality of pelvic features is most in keeping with female sex.[1-4]

Femoral head diameter:

The diameter of the femoral head is 40 mm. This is suggestive of female sex.[5, 6]

The totality of features is most in keeping with female sex.

AGE DETERMINATION:

Todd Pubic Symphysis Scoring System:

Degenerative features on the pubic symphyseal surface are in keeping with Todd phase 9. This suggests that the individual was 45-49 years of age at the time of their death.[7, 8]

Suchey-Brooks Pubic Symphyseal Phase:

Degenerative features on the pubic symphyseal surface are in keeping with a Suchey-Brooks phase IV. This suggests that the individual was 38.9 years +/- 10.9 years (95% confidence interval 26 – 70 years) at the time of their death.[9]

The totality of features is most in keeping with an adult between 30 and 50 years of age.

DETERMINATION OF STATURE:

Measurements were taken from RIGHT-sided elements.

Femur 44.9 cm
Estimated height = 166 cm +/- 3.72 cm

The totality of data produced by regression equation calculation suggests that the individual stood between 162 cm and 170 cm tall.[7]

SUMMARY:

1. Female.
2. 30 – 50 years.
3. 162 – 170 cm.
4. No trauma or significant pathologic alterations.

EDUCATIONAL RESOURCES:

1. This is a good example of the partial, lower portion of an adult female skeleton.
2. Age assessment of skeletal remains is best done in the context of the entire skeleton. Integration of data from a broad set of studies is optimal. Investigators should offer the age range most safely suggested by the totality of studies. Students must be cautioned that statistical data is based on **populations**, and may not necessarily be reflective of reality in an **individual**.
3. Assessment of sex is best done through an evaluation of all available skeletal elements. That said, the pelvis is the most reliably sexually dimorphic element. Many other bones (including, especially, some of the long bones) can be used with some degree of reliability to determine sex. Many resources exist to assist students with such endeavors.[6]

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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 might be using this specimen to learn human and forensic osteology. Evaluation of osteologic 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. This is somewhat artificial as in real forensic investigations additional studies would be undertaken prior to the formulation of diagnoses, and the production of a report. These studies might include plain film radiography, computed tomography (CT) studies, histology, etc.

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