A79 McKern's and Stewart's "Unknowns": A Reappraisal of the Individuals Omitted From the "Skeletal Age Changes in Young American Males" Sample

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After attending this presentation, attendees will understand the nature of the reference sample for one of the foundational studies in forensic anthropology and how a reassessment of military records can improve this sample.

This presentation will impact the forensic science community by showing how one of the most important reference samples for studies of skeletal aging can be enlarged and improved.

McKern's and Stewart's *Skeletal Age Changes in Young American Males: Analysed from the Standpoint of Age Identification* is a foundational study in American forensic anthropology; however, since its publication, little attention has been paid to the original data for the study.[1] According to the monograph's introduction, data was collected from the skeletal remains of 450 American service members repatriated by Communist forces after the Korean War; however, only 375 of these individuals were ever identified. The Joint POW/MIA Accounting Command-Central Identification Laboratory (JPAC-CIL) is actively engaged in the exhumation and identification of unknown remains from the Korean War, and was therefore interested in obtaining additional data on these 75 service members.

McKern and Stewart did not directly analyze the skeletal materials for their project. Instead, Stewart collected data on 450 skeletal cases in the Central Identification Unit (Kokura, Japan), from September 1954 to January 1955. For each case, he scored a predetermined list of age indicators on two punch cards, wrote additional notes on the front of each card, took extensive photographs (a total of 3,861), and made a series of casts, generally including one pubic symphysis, one medial clavicle, and one lateral manubrium and/or corpus sterni. All materials were prepared in duplicate: two identical sets of punch cards were made, two 8"x10" images were printed from each negative, and two casts were made from each mold.

At the time of skeletal processing, the casualties were unidentified. As identities were determined, Stewart added notes to the cards that included dates of birth and death, home of record, cause of death, "national extraction" (determined from race combined with surname), and how the identification had been made (generally, the strength of the dental comparison with antemortem records, although occasional fingerprint comparisons are noted). Upon Stewart's return to the United States, the Army provided him with updates on casualties subsequently identified.

Stewart then sent one set of casts, photographs, and data cards to McKern so he could analyze them, while retaining the others at the National Museum of Natural History (NMNH). While he sent a complete set of casts, so that McKern could use all of them for seriation, he only provided the punch cards and photographs for the series of identified individuals, retaining both sets for the unidentified individuals. Stewart's set of casts are currently curated by the Department of Physical Anthropology while his data cards, notes, and drafts of his chapters of the monograph are in the National Anthropological Archives, both at the NMNH.

Recently the JPAC-CIL acquired the duplicate data cards collected by Stewart from 73 "unknown" individuals (it is not known what accounts for the discrepancy between the "known" totals of 375 reported in the monograph and 377 filed at the NMNH). Comparison of these cards with original military records revealed that, in fact, 37 had been identified as United States service members; it appears that these identifications were made after Stewart sorted out the cards. An additional nine were identified as Australian or British, and thus excluded from a study of "young American males." Two were determined to be Korean, and the remaining 25 were buried as Unknowns. Since 1999, JPAC has exhumed six of these 25 and identified four. These records thus provide an opportunity both to assess how well McKern's and Stewart's aging methods work on a known sample that was set aside from their analyses and to compare Stewart's casts, photographs, and data collection to the actual skeletal remains of some individuals. When their data cards and casts were used to generate age estimates for the 50 known individuals, the actual ages of 31 were within the estimated ranges. Six were younger (average of 1.55 years below the bottom limit of the estimate), while 13 were older (average of 1.67 years above the top limit of the estimate).

Finally, a longer-term project of collecting military records for the identified individuals will eventually provide additional biological information on the original 377 as well, including skeletal measurements and antemortem weights.

Reference:

1. McKern TW & TD Stewart 1957 "Skeletal Age Changes in Young American Males: Analysed from the Standpoint of Identification." Headqu QM Res and Dev Command, Tech Rep EP-45 Natick, MA

Age Determination, War Dead, Skeletal Sample