Forensic Anthropology Vol. 2, No. 2: 113–120
DOI: 10.5744/fa.2019.1014

CASE REPORT

Challenges to Identifications of the Cabanatuan Prison Camp Cemetery Remains

Mary Megyesi[a*]

ABSTRACT: As part of the Defense POW/MIA Accounting Agency's (DPAA) mission to provide the fullest possible accounting for U.S. military personnel lost in past conflicts, disinterments of unknown remains from permanent U.S. military cemeteries have increased (Megyesi et al. 2016). Individuals who died as prisoners of war (POWs) at Cabanatuan Prison Camp and were buried as unknowns in the Manila American Cemetery and Memorial are currently being disinterred and identified at the DPAA Laboratory in Hawai'i. Cabanatuan Prison Camp was one of several Japanese-run POW camps located on Luzon Island in the Philippines. The Cabanatuan remains are highly commingled due to a variety of circumstances related to their initial burial, recovery, and past analyses. Commingling in the Cabanatuan assemblage includes individuals that were identified and resolved soon after World War II and individuals that were unresolved, or "unknown." These circumstances create anthropological and historical complexity for these cases. For instance, given a set of remains from a resolved individual, how do we navigate an identification for those remains, and the set of (now unknown) remains that were buried after an erroneous identification several decades ago? Identifying the commingled remains of Cabanatuan entails revisiting identifications made under completely different operational and scientific standards of the late 1940s. The goals of this article are to introduce the specific challenges of examination and identification of the Cabanatuan remains to the forensic anthropology community and to provide an example of a single identification made from this assemblage.

KEYWORDS: forensic anthropology, commingling, World War II, prisoner of war, Philippines

Historical Background

Cabanatuan Prison Camp was one of several Japanese-run prisoner-of-war (POW) camps located on Luzon Island in the Philippines (Fig. 1). After the Filipino and American surrender on the Bataan Peninsula on 8 April 1942, there were an estimated 65,000 Filipino and 10,000 Americans that were transported to various prison camps (Morton 1953). Many of the POWs were forced to walk approximately 100 kilometers across the Bataan Peninsula (the Bataan "Death March") to a temporary prison camp, Camp O'Donnell. The POWs who endured the forced march across the Bataan Peninsula were in very poor physical condition. At the start of the march they had already spent over four months fighting advancing Japanese forces with dwindling supplies of food, medicine, and ammunition. Many were suffering from malaria, dengue, dysentery, and hookworm (Harris & Beckenbaugh 2014). During the march itself, both American and Filipino prisoners suffered physical abuse by Japanese guards in events that were later judged by an Allied military commission to be a Japanese war crime (Murphy 2014). At Camp O'Donnell, American and Filipino prisoners were housed in separate sections of the camp. Starting in June 1942, the Japanese relocated the senior American officers to Tarlac (a nearby province) and moved the remaining American POWs to Cabanatuan (Kerr 1985; Knox 1981). The Filipino POWs stayed at Camp O'Donnell until their release. More American POWs were sent to Cabanatuan after the surrender of Corregidor Island on 6 May 1942. In general, the Americans from Corregidor were in better overall physical condition than those from Bataan. They had been allowed to keep their personal effects and were even able to purchase supplies at Bilibid Prison on the way to Cabanatuan (Knox 1981).

Cabanatuan Prison Camp was occupied from June 1942 until the end of World War II in September 1945. The population of the camp was at its highest (approximately 7,000 to 10,000 men) after the influx of Americans from Corregidor in June 1942. The camp population fluctuated due to rotating work details where men were taken out of camp for periods

[a]Defense POW/MIA Accounting Agency, Central Identification Laboratory, Joint Base Pearl Harbor–Hickam, Hawai'i, USA
*Correspondence to: Mary Megyesi, Defense POW/MIA Accounting Agency, Central Identification Laboratory, 590 Moffett St., Bldg. 4077, Joint Base Pearl Harbor–Hickam, Hawai'i 96853, USA
e-mail: mary.s.megyesi.civ@mail.mil

The opinions expressed in this presentation are entirely those of the author and do not represent an official position of the Department of Defense.

Portions of this paper were presented at the 70th Annual Scientific Meeting of the American Academy of Forensic Sciences, Seattle, WA, February 19–24, 2018

Received 11 June 2018; Revised 29 August 2018; Accepted 30 August 2018

FIG. 1—*Map of Republic of Philippines with location of Cabanatuan designated by the star.*

of time, in addition to continuous transfers of prisoners to and from other locations. The best estimates indicate there were approximately 5,000 to 6,000 American POWs at Cabanatuan during 1942 and 1943 (Harris & Beckenbaugh 2014). Conditions at the camp were poor: there was often inadequate food, water, shelter, and medical care. Coupled with the severe physical hardships the POWs had already endured, the death rate at Cabanatuan soared. In total, there were 2,763 confirmed casualties of American POWs at Cabanatuan, with over half of these deaths occurring in the first 6 months of occupation (Harris & Beckenbaugh 2014).

While Cabanatuan was occupied, American POWs who died were buried in a prison camp cemetery by burial details made up of other American POWs (Knox 1981). Burials at Cabanatuan were conducted on a daily system, such that all individuals who died within a 24-hour period were interred together in a mass grave. These mass graves were subsequently numbered by the American Graves Registration Service (AGRS) after the camp was liberated (Fig. 2). Each mass grave is referred to as a common grave (CG) along with the number it was assigned by the AGRS (e.g., CG 215). Records of the CG burials, to include casualty names, dates,

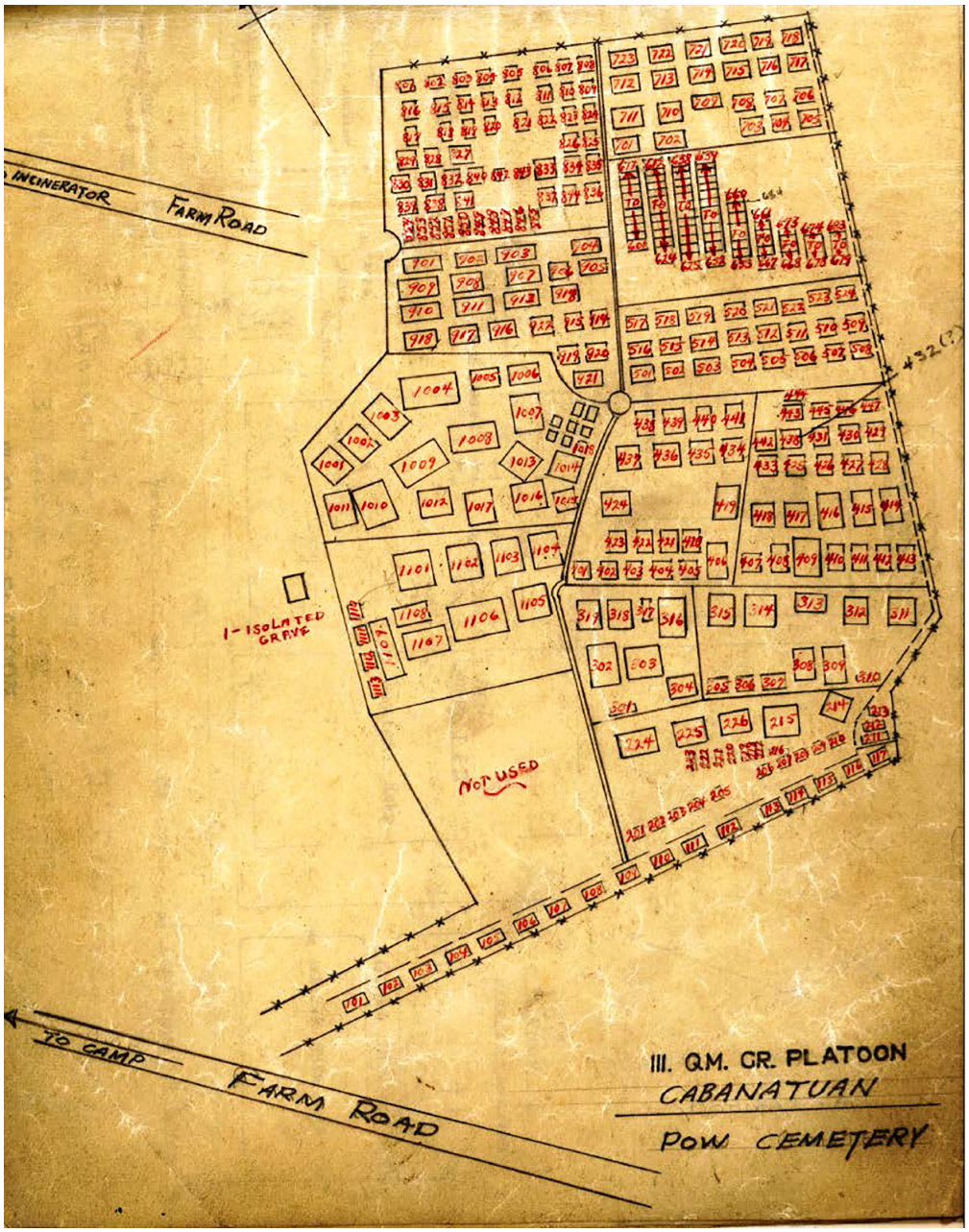


FIG. 2—*Map of common grave designations at Cabanatuan Prison Camp Cemetery created by the 111th Quartermaster Graves Registration Platoon in August 1945.*

and location of the burials, are incomplete and inconsistent. A roster of names of those buried within any given 24-hour period was compiled by American officers, who, like everyone else, were suffering from inadequate food, shelter, and medical care. The difficulty of keeping accurate records was compounded by the high death rate. For instance, in November 1942 alone there were 298 deaths documented. The records compiled by the officers at the time serve as the foundation for all subsequent identification efforts of the Cabanatuan remains; however, as a result of these circumstances, associations between an individual and a particular CG are often tenuous.

Past Analyses of Cabanatuan Remains

1945–1947

Soon after World War II ended in 1945, the AGRS exhumed the Cabanatuan Prison Camp Cemetery. The remains were inventoried, preliminary analysis was performed, and many (1,000+) individuals were identified, primarily on the basis of associated identification media (metal ID tags) or dental comparison. These identifications were made under less rigorous scientific and methodological standards than the ones we currently employ as forensic anthropologists in the 21st century.

Associated identification tags could be easily mixed up during the initial field recovery of the CGs. In addition, at the time of death an individual could have been in possession of another person's identification tag for a variety of reasons. It is unclear exactly how each association was determined and what measures (if any) were taken to mitigate issues that could cause misidentification. As a result, identifications based on ID tags are highly suspect and likely represent the majority of the misidentifications made during the historical analysis period.

Dental identifications made at this time involved a two-step process, in which the dental officer making the identification did not directly examine the dental remains. Dental charts recording teeth present were created by members of the 111th Quartermaster Graves Registration Platoon as the remains were disinterred. Copies of these dental charts were sent to two Dental Corps officers placed on temporary duty in the Memorial Division of the Office of the Quartermaster General in Washington, DC. The two Dental Corps officers then compared the dental records of the men who were reported buried at Cabanatuan with the dental charts created by the 111th Quartermaster Graves Registration Platoon. By early 1947 approximately 284 dental identifications were made via this process (Harris & Beckenbaugh 2014).

As a result of these practices, many of these individuals were misidentified. The unidentified individuals were interred temporarily at the U.S. Army Air Forces Cemetery in Manila. During this initial period of processing, analysis, and identification, commingling of skeletal elements among individuals within the same CG and between CGs likely occurred, in addition to erroneous identifications.

1947–1950

Starting around 1947, the Cabanatuan remains at the U.S. Army Air Forces Cemetery were disinterred and moved to the AGRS Mausoleum at Nichols Field near Manila. Dental and skeletal inventories of the remains were produced by civilian embalmers and AGRS personnel. Stature estimates from long bone lengths were also recorded at this time. The osteological and dental expertise of the individuals analyzing the remains at the mausoleum during this time is unknown. Mausoleum staff compared Cabanatuan casualty records to skeletal and dental remains and forwarded identification recommendations to Memorial Division staff located in Washington, DC. Memorial Division staff then either approved or disapproved the identification. During this time, many identifications were rejected by the Memorial Division staff, often on the grounds that dental records were incomplete and potentially matched several different sets of remains (Harris & Beckenbaugh 2014).

1950–1951

In May 1950 the Memorial Division implemented a focused project dedicated to identifying the Cabanatuan remains. It consisted of the Cabanatuan Project team located in Washington, DC, and the field office staff located with the Cabanatuan remains at the AGRS Mausoleum in Manila.

The project team created and worked with documentation of both the skeletal remains and the Cabanatuan casualties. They created a chronological roster of deaths at Cabanatuan based on the notes and records of the POWs keeping track of the burials at the camp. During this process the project team discovered that individuals were buried together in CGs based on the 24-hour period when bodies were collected at the morgue, and not necessarily the same 24-hour period that included the hour and date of their death. This difference means that burials at Cabanatuan were not systematically conducted based on hour and date of death. While this distinction may seem minor, it did affect how individuals were grouped for eventual burial. With this information the team created a new roster that grouped individuals by accountable burial period, and this new roster was used for all subsequent identification work. In addition, the Cabanatuan Project team assembled physical and dental information for each casualty.

The project team attempted to reconcile casualty records with unknown skeletal remains on the basis of burial period, CG association, age, stature, and dentition. They directed field office staff to examine particular sets of remains, and also asked them to consolidate extra skeletal elements into other

unknown remains in order to make the number of skeletal sets add up to the number of individuals that should have been in a particular CG (Harris & Beckenbaugh 2014). The consolidations and movement of remains during this phase of the Cabanatuan analysis served to further commingle individuals both within and between CGs.

The field office staff did not have access to the casualty records and proceeded at the direction of the project team. During this time, the first physical anthropologists were employed at the mausoleum. They examined remains in response to requests from the project team to look for particular traits or trauma or to segregate/consolidate remains the project team believed were commingled. They did not make direct comparisons between unknown skeletal remains and unidentified individuals.

The project team recognized that previous misidentifications were causing serious downstream effects in the identification effort. These effects created several interlacing problems. First, casualty records of a misidentified individual would be incorrectly excluded when comparing unknown remains to individuals. Second, a set of skeletal remains that in actuality belonged to a misidentified individual would continue to be included in these same comparisons. And finally, the remains that were misidentified and subsequently buried were no longer available to compare to casualty records. In all cases, the correct match between skeletal remains and casualty records would no longer be possible by the project team. An interim report submitted by the project team dated 13 April 1951 outlines that suspected misidentifications could affect approximately 1,319 sets of remains, just under half of the number of total deaths at Cabanatuan (Lee 1951).

In October 1951, a review board that included Dr. Mildred Trotter visited Manila to make recommendations on how to proceed with further identifications. Dr. Trotter wrote:

> During this entire period, I have learned some of the details of the history of these remains since they were first buried in 1942. This history includes a record of burial, disinterment, reburial, etc., etc., a series of processings with resultant papers for three or four or perhaps more successive years; signatures on the papers which do not carry weight scientifically; identification made and the next of kin notified; questioning of the identification with recommendations for correction by personnel who study the papers at a distance of more than 8,000 miles from the remains. (Trotter 1951)

In many cases, the review board could not scientifically substantiate pending identifications when the personnel records were compared directly with the skeletal remains. They noted that the remains were very commingled and expressed concern with elements being removed or added to skeletal sets. In light of these findings, the review board recommended that all identifications cease (Trotter 1951). Subsequently, the remaining unknowns were buried in what is now the Manila American Cemetery and Memorial (MACM) in the Philippines. Historians estimate that between 990 and 1,006 unresolved casualties from Cabanatuan are currently at the MACM, represented by approximately 936 graves (Harris & Beckenbaugh 2014).

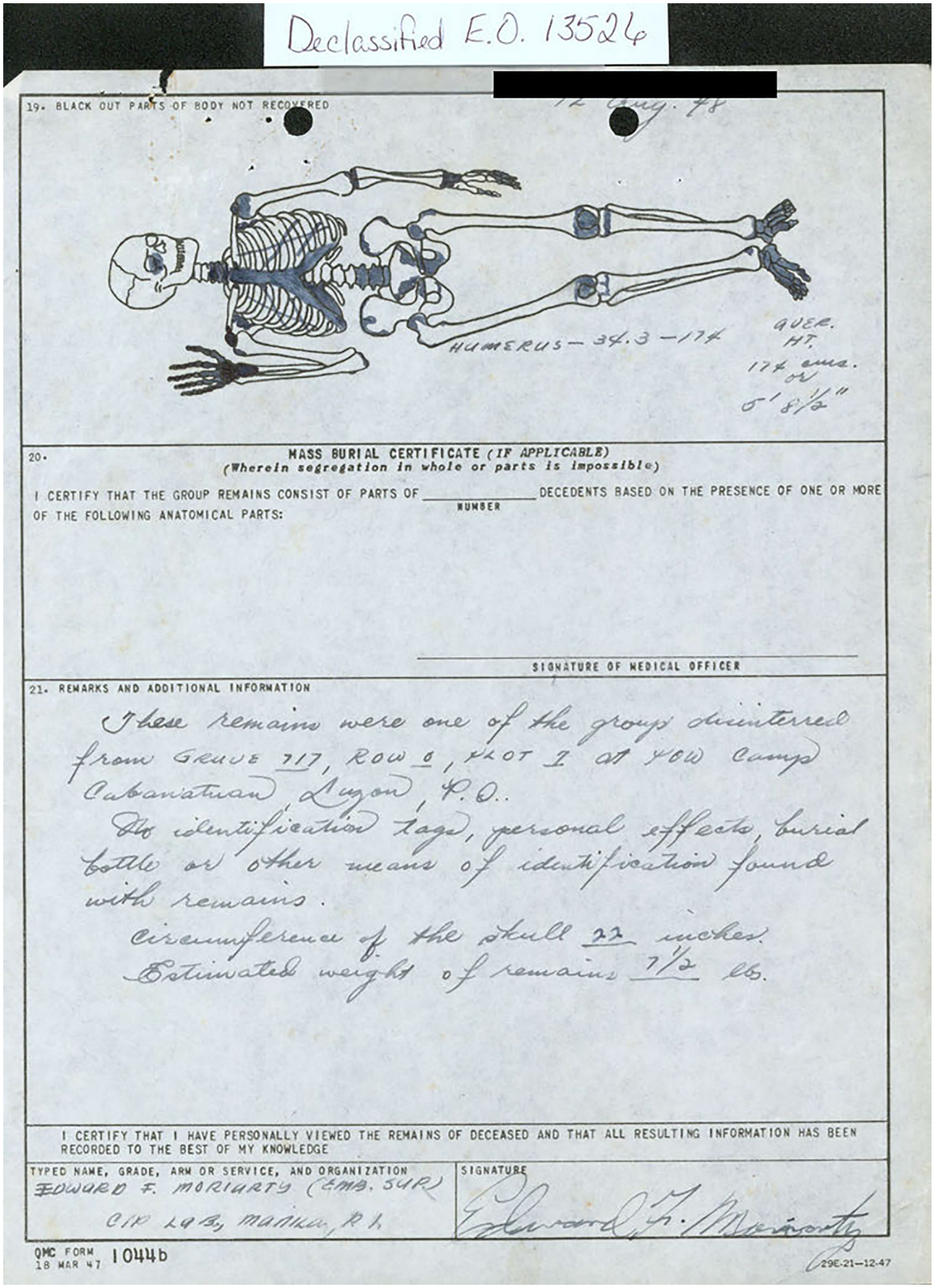
Present-Day Analysis

The Cabanatuan Project is currently housed at the DPAA Laboratory in Hawai'i and represents one of several large commingled human remains projects that the agency is currently managing. Disinterments at MACM are ongoing, with planning in progress to possibly disinter all unresolved Cabanatuan losses. As of July 2018, 87 caskets have been disinterred. The issues that Dr. Trotter noted in 1951 still apply to the remains today, and the path forward to identifying the Cabanatuan remains must resolve both the commingling and the effects of prior misidentifications. A recent identification of an individual from Cabanatuan illustrates how historical research, anthropological analysis, and DNA are used to untangle the effects of commingling and account for past misidentifications.

CG 717 was originally associated with 14 individuals who were buried at the prison camp cemetery on 19 November 1942. According to the Cabanatuan burial roster, Pfc Alpha (not his real name) died on 19 November 1942 and was buried in CG 717. The Office of the Quartermaster General later identified skeletal remains as Pfc Alpha based on dental comparison on 29 October 1946. The remains identified as Pfc Alpha were buried in a family plot in the United States in 1949. The skeletal elements buried include a nearly complete cranium, dental remains, mandible, clavicles, long bones, and pelvis (Fig. 3). Three other individuals associated with CG 717 were also identified in the late 1940s during the initial analysis of the Cabanatuan remains.

The remaining 10 individuals were buried as unknowns at the MACM in the early 1950s. In August 2014, 10 caskets associated with CG 717 were disinterred from the MACM and sent to the DPAA Laboratory in Hawai'i for analysis and eventual identification.

Anthropological and DNA analysis of the 10 caskets from CG 717 show that they are extremely commingled, and as of May 2018 there are 15 mitochondrial DNA (mtDNA) sequences represented in the 10 caskets. These include sequences that are consistent with individuals who were previously identified in the late 1940s, sequences that are consistent with the historical roster of individuals associated with CG 717, and sequences that have no match in the current family reference sample database for Cabanatuan losses. Skeletal elements with a DNA sequence consistent with family reference samples for Pfc Alpha are present in three



Declassified E.O. 13524

19. BLACK OUT PARTS OF BODY NOT RECOVERED

12 Aug. 48

HUMERUS – 34.3 – 17+

AVER. HT. 17+ ems. or 5'8½"

20. MASS BURIAL CERTIFICATE (IF APPLICABLE)
(Wherein segregation in whole or parts is impossible)

I CERTIFY THAT THE GROUP REMAINS CONSIST OF PARTS OF _____ DECEDENTS BASED ON THE PRESENCE OF ONE OR MORE
NUMBER
OF THE FOLLOWING ANATOMICAL PARTS:

SIGNATURE OF MEDICAL OFFICER

21. REMARKS AND ADDITIONAL INFORMATION

These remains were one of the groups disinterred from GRAVE 717, ROW 0, PLOT I at FOW Camp Cabanatuan, Luzon, P.O..

No identification tags, personal effects, burial bottle or other means of identification found with remains.

Circumference of the skull 22 inches.
Estimated weight of remains 7½ lbs.

I CERTIFY THAT I HAVE PERSONALLY VIEWED THE REMAINS OF DECEASED AND THAT ALL RESULTING INFORMATION HAS BEEN RECORDED TO THE BEST OF MY KNOWLEDGE

TYPED NAME, GRADE, ARM OR SERVICE, AND ORGANIZATION	SIGNATURE
EDWARD F. MORIARTY (EMB. SUR) CIR LAB, Manila, P.I.	Edward F. Moriarty

QMC FORM 18 MAR 47 1044b

29E-21-12-47

FIG. 3—*Skeletal homunculus of remains buried as Pfc Alpha in 1949. Shaded areas represent absent portions.*

different caskets (Figs. 4, 5, and 6). These elements include a cranium, dentition, clavicle, long bones, and pelvis, and they duplicate remains that were previously identified and buried as Pfc Alpha in 1949. The dental remains are consistent with available dental records for Pfc Alpha. The DPAA Laboratory identified Pfc Alpha in 2016 based on DNA and dental analysis, and his primary next of kin has been notified.

The remains buried in the United States as Pfc Alpha in 1949 were misidentified in the late 1940s, during the historical period, when non-experts were performing analyses. These remains were exhumed and sent to the DPAA Laboratory in 2016. The skeletal MNI of the set of remains present in the casket is two, based on element duplication. Dental analysis of these remains by DPAA odontologists confirmed that they do not match the available records for Pfc Alpha. Currently, mtDNA testing has been inconclusive, and further testing is pending.

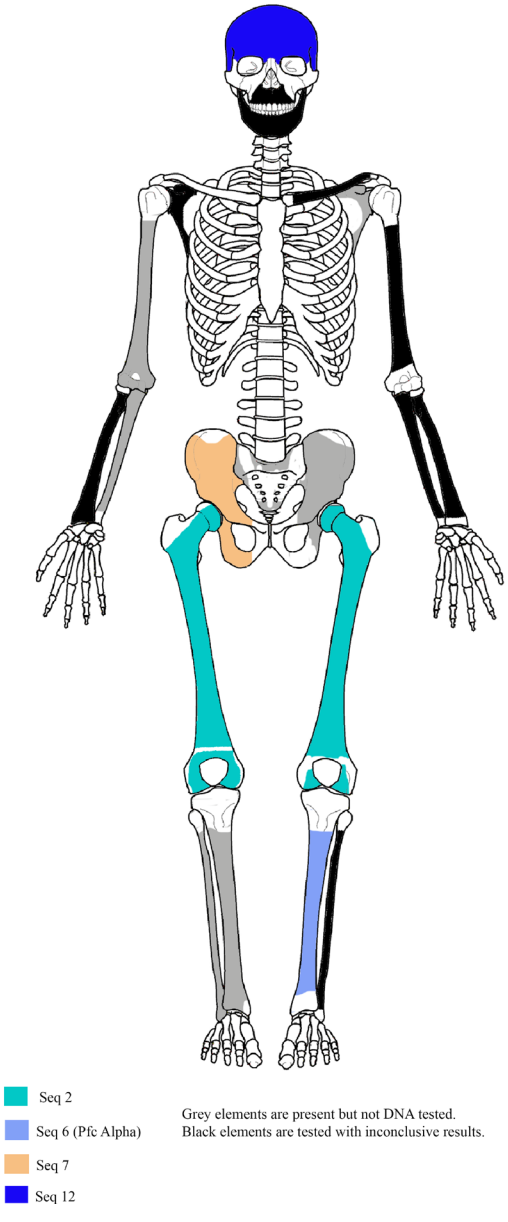


FIG. 4—*Skeletal diagram illustrating commingling present in one of the three caskets in which remains consistent with Pfc Alpha were located. Each color represents a different mtDNA sequence.*

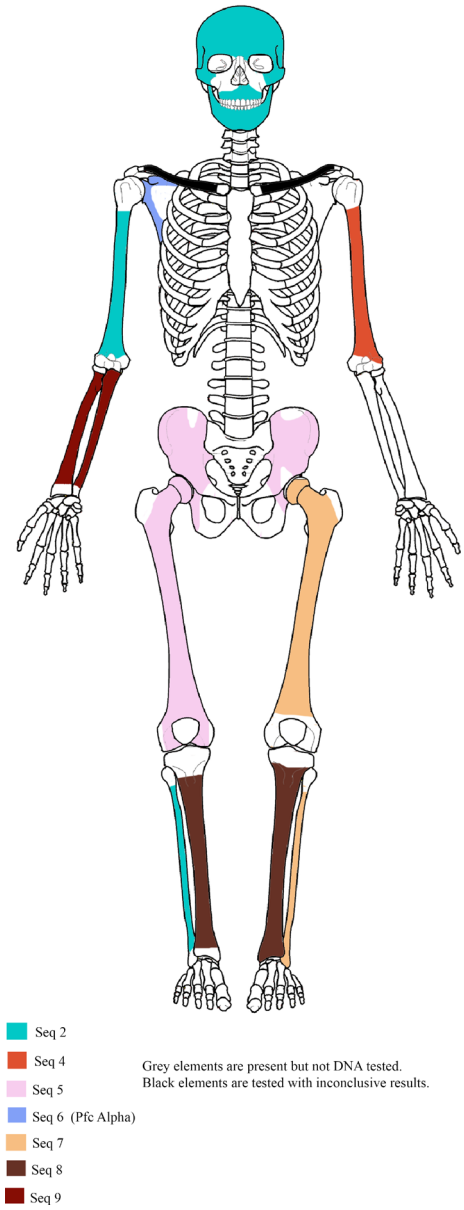


FIG. 5—*Skeletal diagram illustrating commingling present in one of the three caskets in which remains consistent with Pfc Alpha were located. Each color represents a different mtDNA sequence.*

Challenges

The Cabanatuan remains are buried in individual caskets, yet they represent a highly commingled assemblage. The remains were commingled during the various historical processing and identification efforts. Misidentifications during the historical analysis of the assemblage caused cascading effects that

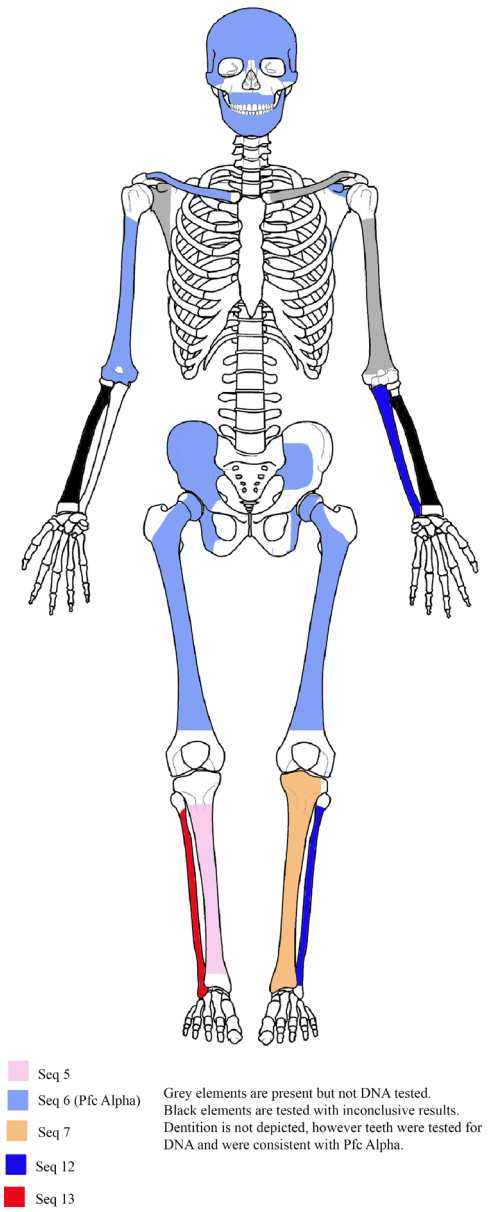


FIG. 6—*Skeletal diagram illustrating commingling present in one of three caskets in which remains consistent with Pfc Alpha were located. Each color represents a different mtDNA sequence.*

could not be rectified at the time. Identifications of the Cabanatuan remains present unique challenges that require understanding the history and circumstances of the remains currently buried as unknowns and the remains that were identified in the 1940s. Part of the current identification process requires delving into past identifications made nearly 70 years ago under different standards and by non-experts. Eventual identification of all the Cabanatuan unknowns will need to consider the large number of misidentified individuals buried across the United States. The unknowns buried at MACM represent only a portion of those who died at Cabanatuan, adding to the complexity of unraveling future identifications.

The historically documented practice of consolidating skeletal elements in order to reconcile the number of sets of skeletal remains for each CG complicates the magnitude of commingling. Working from a historical shortlist of individuals recorded in a particular CG, we can use biological profile, dental records, and DNA to positively identify individuals and exclude others. As of January 2018 a total of 13 identifications have been made by the DPAA Laboratory from the Cabanatuan Project using this combined methodology.

Acknowledgments

The large commingled projects at the DPAA Laboratories are only possible with the combined efforts of many people from various DPAA directorates and other agencies. Larry Adkinson and Bobby Bell of the American Battle Monuments Commission, Manila American Cemetery and Memorial, continue to provide support to the DPAA teams deploying to the Philippines for the ongoing Cabanatuan disinterments. Suni Edson of the Armed Forces DNA Identification Laboratory is crucial to the effort to yield DNA sequences from the Cabanatuan remains. Sarah Richer is part of the Cabanatuan Project team and does a variety of analytical tasks in support of the current identification effort. Jennie Jin, Rebecca Taylor, Carrie Brown, and Laurel Freas are always a source of good advice, solutions, and reality checks.

References

Harris H, Beckenbaugh L. *Casualties of Cabanatuan Prisoner of War Camp #1 and the History of Their Burials*. Washington, DC: WWII Division Memo, Defense Prisoner of War/Missing Personnel Office; 2014.

Kerr EB. *Surrender and Survival: The Experience of American POWs in the Pacific, 1914–1945*. New York: William Morrow; 1985.

Knox D. *Death March: The Survivors of Bataan*. New York: Houghton Mifflin Harcourt; 1981.

Lee VW. Memorandum to the Chief, Memorial Division, "Subject: Cabanatuan Project—Interim Report." 13 April 1951. Memoranda and Reports, 293 GRS Pacific (Cabanatuan): General Correspondence, Miscellaneous File, 1939-54; Record Group 92: Records of the Office of the Quartermaster General, National Archives, College Park, MD.

Megyesi MS, Passalacqua NV, Chrysostomou P, Dolski MR. Commingling among disinterred remains of unknown United States service members from the Korean War. In: Proceedings of the 68th Annual Meeting of the American Academy of Forensic Sciences, February 22–27, 2016; Las Vegas, NV.

Morton L. *The Fall of the Philippines*. Washington, DC: Office of the Chief of Military History, Department of the Army; 1953.

Murphy KC. *Inside the Bataan Death March: Defeat, Travail, and Memory*. Jefferson, NC: McFarland; 2014.

Trotter M. Letter to Col. James Clearwater, 1 November 1951. Mildred Trotter Papers, Special Collections of the Bernard Becker Medical Library Archives, Washington University, St. Louis.