



Fiji Bones Search 2011

Introduction

From May 7-22, 2011, Karl Kern, Jon Overholt, M.D., Gary F. Quigg and Lonnie Schorer of The International Group for Historic Aircraft Recovery (TIGHAR) conducted a research expedition on Viti Levu, Fiji in an attempt to locate the human remains discovered on Gardner Island (Nikumaroro) in 1940 and subsequently transported to Suva. TIGHAR hypothesizes these remains may be those of Amelia Earhart. Investigations included a comprehensive, thorough search of all buildings on the grounds of Colonial War Memorial Hospital (CWMH), Fiji School of Medicine (Hoodless House, Pasifika and Tamavua campuses, and the Collections Storage Room of the Fiji National Museum. The team also interviewed local persons of interest as a part of this initiative. This final report provides an overview of the research conducted by TIGHAR during this expedition, as a part of further testing the Earhart Project's Nikumaroro Hypothesis. All information contained herein that is not footnoted is derived from the field notes recorded by Quigg and Schorer. See "TIGHAR Fiji Bones Search Team III" and "Suva CWM Report 2011" by Schorer for a more detailed account of daily operations during this expedition.¹

Background

In September 1940 a human skull and twelve additional bones were discovered on Nikumaroro (Gardner Island), in close proximity to a number of artifacts, including a shoe, sextant box and bottle. The bones and associated objects were sent to Suva, Fiji for investigation. David Winn Hoodless, M.D., Principal of the Central Medical School, examined the bones in April 1941 and concluded they were remains of a male between 45

¹ TIGHAR's work was primarily self-funded by participating team members. Gardner Island is the historic name for today's Nikumaroro. For clarity, this report refers to this island as Nikumaroro throughout. The Nikumaroro Hypothesis of TIGHAR's Earhart Project posits that Amelia Earhart and her navigator Fred Noonan landed on Nikumaroro on July 2, 1937 and survived for an undetermined period of time before dying there. See "The Earhart Project" at <http://www.tighar.org/>.

and 55 years of age, possibly “of a short, stocky, muscular European, or even a half-caste, or person of mixed European descent.” Following Dr. Hoodless’ report he was asked to “retain the remains until further notice.” This is the last documentation known to exist regarding the disposition of the remains. The former Central Medical School buildings where Dr. Hoodless examined the bones remain extant as a part of CWMH. Present-day forensic anthropologists who have analyzed Dr. Hoodless’ measurements of the remains disagree with his conclusions, asserting the bones are those of a female of Nordic-European descent. Two previous TIGHAR expeditions (1999 and 2003) conducted investigations in Fiji in an effort to locate the bones and associated artifacts with negative results. More information on the bones discovery and Dr. Hoodless’ examination, recent forensic anthropologic re-examination, as well as TIGHAR expeditions on Fiji, may be found on the TIGHAR website <http://www.tighar.org>.²

Procedures

May 9, 2011

Upon arrival in Suva on Monday, May 9, Kern, Overholt, Quigg and Schorer settled into the Five Princes Hotel. The hotel served as an excellent base of operations, providing on site meals and meeting areas. Owners, Roderic Evers and Tarei Weeks, not only ensured outstanding service during our stay, but also assisted the team in obtaining contact information for individuals helpful to our investigation.

The team spent this first day of the expedition on logistical preparations. A rental car was obtained, along with a Vodafone cell phone with local number, and Fijian currency. A familiarization drive around the city allowed for locating the Colonial War Memorial Hospital (CWMH), Fiji School of Medicine (Fiji National University), Fiji National Museum, Fiji National Archives and United States Embassy in relation to our lodging. Time spent on foot at CWMH was particularly helpful in the afternoon, allowing for reconnaissance of the hospital complex.

May 10, 2011

On Tuesday, May 10 at 9am the team arrived at the U.S. Embassy for a meeting with Ambassador C. Steven McGann and Deputy Chief of Mission Richard K. Pruett. Also a TIGHAR member, Mr. Pruett was instrumental in assisting with logistics in Suva both prior to, and during the research expedition. Among his many contributions, Pruett secured the cooperation of the Fiji School of Medicine, made the initial request for permission to search CWMH, and participated personally in search operations. Embassy physician James J. Schellenger, M.D. and Regional Public Affairs Officer Douglas Morris attended the morning meeting as well. Following a discussion of the team’s research plan, Pruett arranged a team meeting with Dean Ian Roush of the College of Medicine (Fiji National University), offered to arrange such a meeting with Minister of Health Neil Sharma, and committed to contacting the Fiji National Museum to request permission for the team to access the museum’s collections storage room. All agreed a pivotal step in initiating the search would be obtaining formal permission from CWMH administrator Sereani Bainimarama to search the hospital campus.

Following the embassy meeting the team lunched with Pruett for further logistical discussions then split up for the afternoon. Quigg and Schorer went to the National Archives while Kern and Overholt returned to the hotel to plan subsequent initiatives.

Focusing on materials between 1935 and 1960, in hopes of locating original documents related to the bones discovered on Nikumaroro in 1941 as well as information on Dr. David Winn Hoodless and the Central Medical School of this era, Quigg and Schorer closely reviewed numerous primary sources in the archives. Files examined included annual Fiji Colonial Report(s), Journal of the Legislative Council, Reports by Inspecting Medical Officers, History and Graduates Central Medical School 1928-1960, and Central Medical School, a history written by Dr. Hoodless himself and published in 1947. Despite spending the entire afternoon with these materials, nothing of relevance was located therein.

² “The Bones Chronology,” http://tighar.org/Projects/Earhart/Archives/Documents/Bones_Chronology.html (Accessed June 12, 2014); “Amelia Earhart’s Bones and Shoes,” http://tighar.org/Publications/TTracks/14_2/14-2Bones.html (Accessed June 12, 2014); “1999 Bones Search I,” http://tighar.org/wiki/1999_Bones_Search_I (Accessed June 12, 2014); “Fiji Bones Search II Final Report,” http://tighar.org/Projects/Earhart/Archives/Research/Bulletins/42_FijiBoneSearch.html (Accessed June 12, 2014).



Map of Colonial War Memorial Hospital-Fiji School of Medicine, Suva, Fiji. Google Earth satellite image, labelled by Gary F. Quigg, <https://www.earth.google.com/> (Accessed July 14, 2014).

May 11, 2011

Wednesday morning at 9am the team met with Ian Rouse, Ph.D., Dean of the College of Medicine, Fiji National University (formerly Central Medical School) at his office within Hoodless House, an administrative building named in honor of Dr. D.W. Hoodless. Following introductions and an overview of the research project, Dr. Rouse provided the team permission to search all areas of the medical school (composed of three campuses: *Hoodless House* and *Pasifika* which are adjacent to CWMH and *Tamavua* located seven kilometers northeast), and all teaching collections of human bones. Dr. Rouse explained the medical school's bone collection is housed in the anatomy section of Pasifika House, adjacent to CWMH, and that he would arrange a meeting for the team with anatomy professor Dr. Neel Arora and his assistant Swastika Devi. At the close of the meeting Dr. Rouse introduced us to his assistant, Peter Sipeli, who offered to help the team as needed. See the map on page five for a helpful visual orientation, including spatial relationships between CWMH and the two adjacent medical school campuses.³

From the Hoodless House office building the team drove to the new United States Embassy compound nearing completion in a suburb of Suva, where Ambassador McGann and Deputy Mission Chief Pruett provided a tour of the facilities. The team had the honor of being the first tour group on the grounds.

The team next visited the Fiji National Museum, where hopes of searching the collections storage room were dashed upon the revelation that Jon Balenalvalu (Head of the Archaeology Department and keeper of the collections storage room key) was in Nadi for a conference. Arrangements were made to return to search the collections storage room on Tuesday, May 17 at 10:00am. While at the museum, the team searched the library and archives index with negative results.

At noon the team met with Minister of Health Neil Sharma, M.D., who pledged his support to our endeavor. Dr. Sharma recommended the team speak with Dr. Jone Sanilagekali and Dr. Patelle (first name unknown), regarding the bones search, but the team was unable to contact these individuals during the expedition. Dr. Sharma also suggested the team work with his Public Relations Officer, Peni Namotu who could assist in getting media attention for the expedition in hopes of bringing forth individuals helpful to the investigation.⁴

Following the meeting with Dr. Sharma the team was able to contact Ms. Bainimarama's administrative assistant Ms. Wara, who arranged a 2pm meeting with the CWMH administrator. During this meeting it became clear that Ms. Bainimarama was not particularly supportive of the team searching the hospital, ultimately declaring there was no point in looking for the bones there, as "There are no cupboards or closets in the hospital." Perplexed, and frustrated having failed to obtain permission to search the primary objective (CWMH), the team regrouped for a situation analysis.

In a brainstorming effort to produce an alternative option to obtain permission for search operations at CWMH, the team agreed the best initiative would be to contact the Chief of Medical Staff at the hospital, Ifereimi Waqainabete, M.D. who also served as Medical Superintendent at the Ministry of Health. Waqainabete had voiced support of TIGHAR's search efforts in email correspondence with Overholt prior to the team's arrival in Suva. Having met with resistance from hospital administration, the team determined to request permission from the medical staff, through Waqainabete, at the earliest opportunity.

3 The following clarifications may be helpful regarding the three campuses of the Fiji School of Medicine (aka College of Medicine) and of the use of the term "Hoodless House" in this report. "Hoodless House" is used by students and staff of the medical school to refer to both the multi-story office building containing administration areas and classrooms on Brown Street as well as all surrounding school facilities (dormitories, etc.) on the south side of the sprawling CWMH complex. This term, of course, honors former Central Medical School principal (and Nikumaroro bones examiner) David Winn Hoodless, M.D. Pasifika campus is located on Extension Street which is along the north side of CWMH. Tamavua campus, as mentioned above, is located seven kilometers northeast of CWMH. To add to the confusion, Dr. Hoodless' former residence is located across the street from Hoodless House (office building) and serves presently as the Kitchen Building for the south dormitories. So, Hoodless' old house is now a part of Hoodless House campus. See the map on page five for further orientation or consternation.

4 The team failed to note Dr. Patelle's first name at the time of our meeting with Dr. Sharma, and has yet to determine which Dr. Patelle he was referring to. Locating and interviewing Dr. Patelle (as well as Dr. Sanilagekali) is among the recommendations offered in the conclusion of this report, which would, of course, begin with contacting Dr. Sharma for his first name and contact information.



Hoodless House Office/Classroom Building. Photograph by Gary F. Quigg.

Returning to the Hoodless House office building at 3pm, the team met with Dr. Apenisa Ratu (dentist), Director of Academic Services at Fiji College of Medicine. Dr. Ratu suggested we contact the Facilities Department of Fiji National University for plans/drawings of the medical school buildings to assist with our search efforts there. Like Dr. Sharma, Dr. Ratu mentioned Dr. Jone Senilagekali (former anatomy tutor at the medical school) as perhaps being a helpful resource. As noted, the team was unable to reach Dr. Senilagekali during our time in Fiji.

After concluding our meeting with Dr. Ratu, the team walked to Pasifika campus (classroom building) to introduce ourselves to anatomy professor Dr. Neel Arora. Dr. Arora and his assistant, Swastika Devi, provided access to the teaching col-

lection of bones in the anatomy laboratory directly. After a cursory review of the collection, it was determined the late hour of the day did not allow enough time for a thorough examination of the bones. The team made an appointment to meet Dr. Arora and Ms. Devi in the lab at 8am the following morning.

Returning to the hotel, Overholt wrote a press release (approved by TIGHAR Executive Director Ric Gillespie) regarding the team's search effort. Schorer emailed the release to Peni Namotu, Public Relations Officer at the Ministry of Health, and copied it to Douglas Morris, Regional Public Affairs Officer at the United States Embassy in Suva:



Classroom/Laboratory Building (left) and Library (right) on Pasifika Campus. Photograph by Gary F. Quigg.

Sent: Wednesday, May 11, 2011 7:22 PM
 To: Peni Namotu
 Cc: Morris, Douglas A; Jon Overholt
 Subject: TIGHAR/Earhart/Fiji press release

Four members of the International Group for Historic Aircraft Recovery, TIGHAR, arrived in Fiji Monday for a two week visit. The group is attempting to answer the question "What happened to Amelia Earhart?" Earhart, the world famous aviator, went missing in July of 1937, as she attempted to fly around the world. This intriguing question has brought them here to Fiji.

Fiji has an interesting connection to Ms. Earhart dating back to the time just after her disappearance. A number of artifacts from Nikumaroro, in Kiribati, made their way to Fiji in 1941, and, were examined here by British physician D. W. Hoodless, M.D.

The whereabouts of the artifacts following his evaluation remains part of the mystery, and, a question TIGHAR hopes to answer.

Anyone with new information about Ms. Earhart, or, things related to her disappearance, is encouraged to contact TIGHAR members at the 5 Princes Hotel in Suva, 338.1575."⁵

5 Email to Peni Namotu from Carolyn "Lonnie" Schorer, May 11, 2011.

May 12, 2011

The first hours of Thursday morning were spent on the Pasifika campus of the medical school. While Quigg conducted research in the library, Kern, Overholt and Schorer examined, measured, and photographed the bones in the anatomy laboratory in hopes of matching one or more of them to the description and measurements of the Nikumaroro bones recorded by Dr. Hoodless in 1941. Upon completing the review of all bones in the anatomy collection (finding no matches with the Nikumaroro bones) Kern and Schorer visited the pathology lab next door and met with Romeo Dotollo, M.D. who assured them that only soft tissue examples were kept there. All team members rendezvoused at 10am in the library (Pasifika campus) for a meeting with Mary-Clare Ame, Manager of Library Services.

The meeting with Ms. Ame was primarily introductory, and she kindly agreed to conduct research on our behalf for materials related to Dr. Hoodless and the era of the bones discovery on Nikumaroro. The group agreed to meet again with Ms. Ame the following morning.



Schorer and Overholt examining bones collection in anatomy lab. Photograph by Karl Kern.



Team members poised for rainforest insertion/tunnel investigation. Photograph by Karl Kern.

After obtaining rubber boots for all team members in preparation of underground investigations, the group drove seven kilometers northeast to search the medical school's Tamavua campus. Accompanied by security guard escort, the team searched every room, closet and cupboard of every building on campus with negative results. Upon completing the above-ground search, the team pulled on their rubber boots, along with vinyl raincoats, hard hats, head lamps, gloves and masks provided by campus facilities staff, and commenced subterranean reconnaissance.

Led by machete-wielding maintenance employees, the team slowly made its way through the adjacent rainforest downhill to the opening of a tunnel system sprawling beneath the Tamavua campus. Built as defensive bunkers (bomb shelters with emergency medical facilities) during World War II in the event of Japanese attack, the tunnels became secure storage facilities when enemy incursion failed to materialize. After walking every passage and examining each alcove (including a blast wall-lined route leading uphill to a locked steel-grate door at street level across from the former U.S. Army barracks complex), only a few old tires, a modicum of trash, and a fair amount of soot were located within. The team emerged from the tunnels and rainforest in need of a good rinse, overzealously provided by a garden hose-wielding Kern.

Our primary contact at Tamavua campus was Violet Prasad, Secretary, Department of Public Health, who introduced us to Alanieta Navono, whom, at the time of our investigation, had been with the Environmental Health Laboratory at Tamavua for twenty-one years. In conversations with Ms. Navano, the team learned all bones and skeletons at Tamavua were moved to Hoodless House campus in 1991, and later to the Pasifika cam-

pus anatomy laboratory, where Kern, Overholt and Schorer had examined them that morning. Ms. Navano also informed us that Satya Deo, who once cared for the collections of bones, skeletons, and cadavers at Tamavua, resigned some years ago but still resides in the area. The team was unable to contact Mr. Deo during the expedition.⁶

After returning from Tamavua the team went to the Defence Club of Suva at 6pm in hopes of meeting retired physicians who might have memories helpful to our investigation. We were rewarded by conversations with Tukaha Mua, M.D. a 76-year-old anesthesiologist still working at CWMH, and I. R. Bakani, M.D., a retired cardiologist in his 80s. Unfortunately, neither of these informants had information helpful to the bones search.

May 13, 2011

The team began the day meeting Mary-Clare Ame at the medical school library on Pasifika campus, who, as promised, had pulled together a number of items for our review. While the historic photographs, archival material, and secondary resources were all interesting, none directly focused on the bones discovered on Nikumaroro in 1940. Additional materials worth noting were copies of TIGHAR reports on the missing bones and the kana-wa wood box found on Nikumaroro, as well as a copy of the biography of Dr. Hoodless written by his daughter, Margaret W. Guthrie. Published in 1979, *Misi Utu: Dr. D.W. Hoodless and the Development of Medical Education in the South Pacific*, is an edited version of a much longer manuscript. It may be helpful to obtain a copy of the unedited manuscript for further examination in hopes material therein may be of some use in the continuing search for the missing bones. Ms. Ame gave the team the edited version of *Misi Utu* as a parting gift.

The next several hours were spent on search logistics, including the procurement of internet thumb drives to enhance laptop communication and search capabilities as well as phone calls to key individuals who may help move the research forward. The most fruitful of these calls was made by Dr. Waqinabete's secretary. Overholt and Schorer had gone to Waqinabete's office at CWMH in hopes of finally obtaining permission to search the entire hospital campus for the bones. Though the team members had been told the doctor would be returning to this office that afternoon, the secretary informed them that he would not be back in his office until the following Monday. At Overholt's and Schorer's polite insistence, the secretary phoned Dr. Waqinabete at that moment and obtained his permission to search CWMH with full access to all buildings. This was a seminal moment in the expedition, as a frustrating week had passed since our arrival without permission to execute our primary mission of searching CWMH. The team wasted no time in getting started. Meeting with the Hospital's Housekeeping Supervisor, Overholt and Schorer arranged a meeting for the team with Suman Ram, Head Housekeeper, the following morning at 8am to begin search operations on site.

Once back at the Five Princes Hotel, the team ended the day with interviews by local media. Hopeful that public exposure of the search efforts would bring forth helpful informants, the team was interviewed by Samantha Rina of *Fiji Times* and by Ricardo Morris and Hosanna Kabakoro of *Mai Life* magazine. Articles appeared in *Fiji Times* May 15 and 22, and the search was profiled in the June issue of *Mai Life*.⁷

May 14, 2011

Search operations commenced shortly after 8am within the west wing of CWMH. The team was accompanied by Head Housekeeper Suman Ram and Security Guard Niko (last name withheld). As the sprawling hospital complex presents an architectural challenge, Schorer was placed in charge of directing and documenting the search of CWMH. Balancing investigation methodology with the utmost sensitivity in patient care areas, the team completed a systematic search of both the west and south wings of CWMH (excepting ceiling crawl spaces and attics due to the lack of a ladder) by the end of the day with negative results.⁸

6 Mr. Deo was interviewed by TIGHAR's 1999 Fiji bones research team. See Thomas F. King, "1999 Bones Search I," http://tighar.org/wiki/1999_Bones_Search_I (Accessed August 7, 2014).

7 "Mission to Trace Remains of Aviatrix," *Fiji Times*, May 15, 2011; *Fiji Times*, May 22, 2011, *Mai Life*, June 2011.

8 As an architect, Ms. Schorer's leadership was crucial to our hospital search. Under her direction, informed by expertise in structural design and an intuitive nature, the investigation of this extensive complex proceeded with optimal efficiency.

May 15, 2011

The team began the day searching the hospital morgue with the assistance of Bal Ram, Morgue Attendant. In a narrow closet filled with miscellany, a small cardboard box was located containing fourteen human bones: three femurs, two tibias, four radii, four ribs, and a partial skull. Overholt measured the bones while Schorer recorded notes and Kern took photos of the collection. Quigg observed while interviewing Ram, who explained no one knew the origin of these remains and that they had lain unclaimed in the closet for many years.



Colonial War Memorial Hospital (SWMH), south wing. Photograph from <https://www.google.com> (Accessed July 9, 2014).



Bones discovered in CWMH morgue closet. Photograph by Lonnie Schorer.

It was clear not all of the CWMH morgue closet bones were the same *type* of bones found on Nikumaroro in 1940 and recorded by Hoodless in 1941. Dr. Hoodless described and measured the following thirteen bones in his report to Sir Harry Luke of April 4, 1941:

(1) a skull with the right zygoma and malar bones broken off; (2) mandible with only four teeth in position; (3) part of the right scapula; (4) the first thoracic vertebra; (5) portion of a rib (? 2nd right rib); (6) left humerus; (7) right radius; (8) right innominate bone; (9) right femur; (10) left femur; (11) right tibia; (12) right fibula; and (13) the right scaphoid bone of the foot.⁹

However, some of the CWMH morgue closet bones most certainly were the same types in the Hoodless report, including the tibia, ribs, radiuses and femurs. With the possibility that some of the bones found in the morgue may have been those measured by Hoodless, team spirit peaked with this potentially momentous discovery.¹⁰

Upon concluding the examination and recording of the morgue closet bones, the team proceeded to Richard Pruett's home after lunch to borrow a ladder to search attics and ceiling crawl spaces of

the hospital. Mr. Pruett joined the team for the afternoon search. All areas above ceilings in the west, south and north wings were accessed and searched with negative results.

During search operations this day, team members were informed of tunnels that existed underneath the hospital campus. Plans were made to include the CWMH tunnels on the search list of the campus.

⁹ Karen R. Burns, Richard L. Jantz, Thomas F. King, and Richard E. Gillespie, "Amelia Earhart's Bones and Shoes," December 5, 1998, http://tighar.org/Publications/TTracks/14_2/14-2Bones.html (Accessed July 9, 2014). Sir Harry Luke served as Governor of Fiji and High Commissioner of the British Western Pacific Territories from 1938 to 1942.

¹⁰ The team did not have calipers or an osteometric board available at the time of the bones discovery, and all agreed that a more formal analysis of the remains should be undertaken by forensic anthropologist and TIGHAR member Karen Ramey Burns, Ph.D. This would require transport of the bones to the United States and all necessary permissions.



Central Medical School students and Dr. Hoodless (right), 1937. Margaret W. Guthrie, Misi Utu: Dr. D.W. Hoodless and the Development of Medical Education in the South Pacific (Suva: I.P.S., 1979).

May 16, 2011

While Quigg informed Ric Gillespie, Executive Director of TIGHAR, of the morgue closet bones discovery in an early morning phone call, Kern and Schorer emailed Gillespie photos of same. Both the team and Gillespie agreed the bones should be brought to the United States for further analysis. Quigg volunteered to meet with appropriate staff at the United States Embassy in Suva, as well as Dr. Waquinabete to make all necessary arrangements to obtain the remains.

As Kern, Overholt, and Schorer made their way to CWMH to continue search operations at 8am, Quigg went to the embassy for a meeting with Ambassador McGann and Deputy Chief of Mission Pruett

to inform them of the bones discovery. Pruett suggested that he and Quigg should meet in person with Dr. Waquinabete to inform him of the discovery and request permission to obtain the morgue closet bones on loan for study in the United States. With Ambassador McGann's agreement, Pruett contacted Dr. Waquinabete and plans were made for a lunchtime meeting on May 18.

Following the meeting Quigg joined the CWMH search for the rest of the day, where the team was engaged in obtaining access to all locked areas of the west, south and north wings, and a complete search of the dental school facility. Several individuals informed the team that news of the search was in Sunday's *Fiji Times* and had been heard/seen on local radio and television stations.

May 17, 2011

The team met for tea with Dr. Waquinabete and Ms. Bainimarama at 9:15am in the administration department of CWMH to provide them with an update on our search progress. Given the sensitivity of the closet bones discovery the team had decided not to mention it at the meeting, as Pruett and Quigg would meet with Dr. Waquinabete the following day to request permission to obtain the bones on loan. Dr. Waquinabete was very enthusiastic about our search efforts, and asked us for a list of areas we had not yet been able to access at CWMH due to locked doors or staff resistance, in order that he might ensure we have the opportunity to examine those spaces as well.

By 10:30 a.m. the team was back at the Fiji National Museum where we were granted access to the collections storage areas inside the main museum building. Staff members Mereia Luvunakoro



Quigg examines latched case with dovetailed joinery in museum storage area. Photograph by Lonnie Schorer.

Lesi and Sakiusa Kataiwi, as well as archaeologist Sepeti Matararaba (who had worked with the 1999 TIGHAR

bones search team) assisted Kern, Overholt, Quigg and Schorer in searching for human remains, kanawa wood boxes, and any other items known to have been associated with the discovery of bones on Nikumaroro in 1940. After an extensive, comprehensive search wherein many items were removed from their assigned locations on shelving and other objects were relocated to ensure complete access to hidden spaces, neither bones nor artifacts matching the description of anything found near the Nikumaroro bones at the time of their discovery were located in the museum storage areas searched.

Returning to the Hoodless House office building in the afternoon, the team interviewed faculty members of the School of Oral Health within the Fiji School of Medicine: Doctors Mark Cumberbatch, Leenu Maimunuku, and Temalesi King. Dr. Leenu recalled that a former colleague, J.B. Savou (now deceased) kept a wooden box on his desk that “no one touched.” The team subsequently searched Savou’s old office with negative results. Dr. King, who graduated from the dental school in 1985, recalled that both authentic and replica human skulls were used during her anatomy training, and that one of the real skulls had gone missing while she was a student there.

May 18, 2011

Back at CWMH at 8am, the team focused on the east wing, the attics above the dental school, radiology storage, the free-standing laundry and Sister’s Quarters (nursing staff housing). Dedicating the day to these areas, and accessing previously locked spaces, nothing of interest was located.

Pruett and Quigg met Dr. Waquinabete at 12:30 p.m. for their luncheon meeting. Once the doctor was informed of the bones discovery in the morgue closet, he graciously provided verbal permission for the loan and agreed that utmost confidentiality should be used in the procurement of these remains. From this point forward Quigg would be responsible for obtaining the morgue closet bones and all necessary legal, documentary, and transportation logistics (with Pruetts support) in order to hand carry the remains to the United States on the May 22 return flights.

The team concluded the days search efforts at CWMH in time to make a scheduled 4pm meeting with Elizabeth Erasito, Director of the National Trust of the Fiji Islands. After the team briefed Ms. Erasito on our search efforts, she offered some insight regarding the Trust mission in Fiji and cultural values of the region. In Fiji, preservation efforts are more focused on natural resources than material culture such as historic structures. Pacific cultures, according to Ms. Erasito, do not place value on objects, but rather on traditional stories and songs, such that, in her opinion, an old box wouldn’t necessarily get handed down as a generational heirloom among native Fijians.

May 19, 2011

Search operations continued on the CWMH campus with the remaining freestanding facilities and the entire roofline of the inter-connected wings. Kern and Quigg examined the carpenter house/woodshed and additional attic space above the dental school. Overholt searched the surgical suites and operating room theater, and was joined by Schorer for an exploration of the HIV/STI building. As the pair crossed the street heading back to the main campus, they were stopped by Nirbhay Prasad, Project Manager for hospital renovations, who introduced himself and wanted to inform the team about a recent bones discovery by workers.

According to Prasad, Midland Construction employees (under foreman Baram Deo) had seen bones in an attic when they were replacing the roof on the freestanding Kitchen Building (formerly the residence of Dr. Hoodless) across from the Hoodless House office building in December 2009. Prasad also shared an anecdote about a wrist and finger bones (wired together), and a skull supposedly in a room of the boys’ dormitory on Pasifika campus nearby. It was unclear during the conversation with Prasad if the wrist/finger bones and skull were the same bones seen by the roof workers or unassoci-



Kitchen Building (former Hoodless residence). Photograph by Gary Quigg.

ated. Schorer later scheduled a meeting with Prasad for 8 a.m. the following morning so the entire team would have an opportunity to obtain any additional information.

May 20, 2011

The morning meeting with Nibhay Prasad was unexpectedly brief as he could offer no further details about the bones discovered across from Hoodless House, but he was able to arrange a meeting for Quigg with Baram Deo, Midland Construction foreman, at 4pm that afternoon.

Kern, Overholt and Schorer began the days search plan, which included the Kitchen Building (former residence of Dr. Hoodless) across from the Hoodless House office building, the boys' and girls' dormitories adjacent to the kitchen building, the Reproductive Health building, and the dental prosthetics laboratory. Kern and Schorer followed up on a staff rumor that human bones found by workers (unclear if these were remains from the attic of the kitchen building/former Hoodless residence or others) had been put into a box and placed in the dental x-ray room. All of these structures/areas were thoroughly searched, yielding negative results.

One interesting anecdote was obtained by Schorer upon meeting Tevita Baravilala to search his office in the West wing of CWMH. According to Dr. Baravilala, his grandfather (age 96) was a student at Central Medical School when Dr. Hoodless served as principal, and he recalled there was considerable excitement when "something" arrived from Kiribati and all present were told "it was a secret."¹¹

Following the Prasad meeting Quigg spent the entire day handling the myriad legal and logistical challenges involved in getting the morgue bones in TIGHAR's possession for transport out of Fiji. The following synopsis explains the effort entailed.

Bone Loan

Despite assurances that he would immediately provide written permission for TIGHAR to obtain the morgue closet bones on loan for study in the United States, Dr. Waquinabete had produced no such document since his verbal authorization of May 18. The team would be departing for the United States May 22, hopefully with the bones in tow, and it was now May 20.

After waiting an hour outside Dr. Waquinabete's office for his return, Quigg received a phone call at 10:20 a.m. from Justin Tull, Consular officer of the U.S. Embassy in Suva. Mr. Tull advised Quigg that in order for the bones to meet the requirements for transport to the United States they must be sealed within clear plastic, and placed within an approved ossuary which, following inspection by the Fijian Ministry of Health, must then be sealed with wax. Further, the U.S. Embassy must inspect the sealed ossuary before the consulate offices close at 3 p.m. that afternoon. Tull recommended the mortuary firm of Patton & Storck, Ltd., to construct the ossuary and provided company's phone number. Quigg immediately called Patton & Storck and spoke with Ramesh Kumar, Director, who completely understood the urgent status of the request and asked Quigg to make his way immediately to the company facilities in the Suva suburb of Vatuwaqa. Locating the first available taxi cab, Quigg sped off to Vatuwaqa.

Arriving at Patton & Storck, Quigg briefed Kumar, whom, upon obtaining dimensions for the ossuary, assigned his son Edwin to construct it immediately from materials available in the company wood shop. Kumar priced the ossuary at \$250 Fijian and Quigg hopped another cab for the nearest ATM, returning with the cash just as the container was completed. Understanding time was of the essence, and the value of a Fijian mortician to scale the upcoming bureaucratic barriers, the senior Kumar offered the services of his son Edwin to accompany Quigg and the ossuary in the company truck until the shipment was approved and sealed for transport. In effect, this gracious action by the Kumar family made the entire initiative possible.¹²

Edwin Kumar drove directly to the CWMH. Arriving on the hospital campus at noon, Quigg found Dr. Waquinabete in his office. The administrative assistant typed the written letter of permission and obtained the doctor's signature. Rushing to the morgue with the letter approving the bone loan, Quigg met with attendant Bal Ram and obtained the morgue closet bones collection at 12:45 p.m.

¹¹ Kiribati, the nation in which the island of Nikumaroro is located, gained independence from Great Britain in 1977.

¹² Patton & Storck, LTD was founded in 1928 as the first mortuary service in Suva. Now owned and operated by the Kumar family, the company is well-known and respected throughout Fiji. See <http://www.fjiodirectoryonline.com/index.php/others/474-Patton-and-Storck-Limited> (Accessed June 26, 2014).

Back in the truck, young Kumar drove fifteen minutes to an auto body repair shop, which was somewhat perplexing to Quigg. Once inside the shop, with the business negotiations undertaken in the Fijian language, Quigg eventually realized the workers were gathering a heavy upholstery-grade sheet of vinyl. An industrial sewing machine was used to create a clear pouch, the bones were placed inside, and the opening was sewn shut. Now the bones could be taken, sealed in transparent plastic inside the well-padded ossuary, to the Ministry of Health for examination prior to approval for shipping.

Arriving at the Ministry of Health at 1:30 p.m., Kumar and Quigg found the staff necessary to inspect and approve the ossuary for shipment remained out to lunch. After an hour, the staff returned to their desks, where Kumar and Quigg explained their request for immediate processing and opened the ossuary for examination. The staff politely declined the shipping request, stating that it would be impossible to obtain approval for shipment prior to the following week. Despite the best efforts of Quigg and Kumar, the staff remained unconvinced of the urgency and unwilling to reverse their decision. Quigg asked if he were to obtain approval for immediate shipment directly from His Excellency, Minister of Health Dr. Neal Sharma if that would resolve the matter. The staff said that it would, but that Minister Sharma was out of his office until Monday.

Quigg walked directly to Minister Sharma's office, where he found the doctor seated at his desk. His Excellency remembered Quigg from their meeting the previous week, and kindly welcomed him into his office asking how he may be of service. Five minutes later, Quigg walked back to the staff area with a signed letter from the Minister of Health approving the ossuary for immediate shipment. Kumar sealed the ossuary opening in wax while Quigg completed the necessary paperwork. It was now 2:45 p.m., prompting Kumar and Quigg to get to the American embassy as soon as possible before the consular department closed in fifteen minutes.

Once at the embassy, Kumar departed with heartfelt thanks from Quigg, who went directly through security to the consular offices. Justin Tull, having anticipated Quigg's arrival with the bones, had all paperwork ready for signatures. Quigg departed the embassy with the ossuary and all necessary transportation documentation in hand to bring the collection to the United States as carry-on baggage.

Carrying the ossuary, Quigg took a cab directly to Midland Construction for the 4 p.m. meeting with Baram Deo, foreman on the renovation project at the kitchen building (former Hoodless residence). Mr. Deo explained the bones found in the attic area of the building during roof replacement in December 2009 were put in a "rubbish pile" outside on the ground, along with everything else from the attic. He repeated the rumor the team had heard from other individuals at CWMH that a skull and arm bones were in the boys' dormitory on Pasifika campus. The team had searched all dormitories with negative results.

While Quigg was working on the bone loan, the rest of the team had spent the afternoon investigating the tunnels beneath CWMH. Kern, Overholt and Schorer, in hard hats, headlamps, rubber boots and masks, climbed over the concrete-edged entrance and lowered themselves into standing water and silt. Following the tunnel uphill and northward (349 degrees magnetic) the explorers found a junction with a shorter east-west tunnel with alcoves before arriving at the terminus of the tunnel under the Sister's Quarters (nurses housing) where three flights of concrete steps led to a sealed opening to this building. The tunnels were empty except for old electrical connections and exposed rebar. These passages, like those of the Tamavua campus, are of World War II origin.¹³

Upon our return to the hotel, a two-person New Zealand television crew requested an interview, but it was decided any media exposure at this time might draw unwanted attention as we wished to leave Fiji quietly with the bones in tow. The team politely declined the request.

May 21, 2011

Overholt and Schorer remained at the hotel making preparations for the next day departure and keeping a watchful eye on the ossuary at all times while Kern and Quigg made one final attempt to access the sole remaining un-searched room at CWMH. According to morgue attendant, Bal Ram, the unsearched room (on the second floor of the building next door [west] of the morgue, where Dr. Hoodless' first floor office was formerly located) was used, usually on Saturdays, by the Fiji Police. Attempts to contact the police to obtain access to the room had proved fruitless thus far. Kern and Quigg began trading watches at 8 a.m., sitting in front of the door in the faint hope that someone would arrive during the day to provide access.

13 "Colonial War Memorial Hospital," http://tighar.org/wiki/Colonial_War_Memorial_Hospital (Accessed July 9, 2014).

At 1130 a.m. Quigg took a lunch break and Kern took the next watch; just before Quigg returned at 12:30 p.m. three men appeared and allowed him inside to search the room. Quigg returned to the room shortly thereafter, joining the search and the conversation in progress. The individuals allowing access to the room were R. Ponnu, Swamy Goundar, M.D., Director of the Fiji Institute of Forensic Science in the Fiji Police Force (and an associate professor at the Fiji School of Medicine), along with Asaeli Buli and Atish Lal of the Suva South Police Post. Dr. Goundar explained the police used the room for forensics storage in ongoing cases, and showed Kern and Quigg a collection of human remains he was working with as a part of a cold case. The male victim had been found a few years before at Lavouka.

Neither Dr. Goundar nor the two police officers had ever heard of the bones recovered on Nikumaroro in 1940 and examined by Dr. Hoodless in 1941 at the hospital, and had no knowledge of the rumors of bones being found recently nearby. Dr. Goundar indicated he would be happy to assist TIGHAR in its continuing effort to locate the collection of remains examined by Hoodless and associated material. With the search of the vast CWMH complex and all three campuses of the Fiji School of Medicine now entirely complete, Kern and Quigg returned to the hotel.

May 22, 2011

The team spent the morning handling final logistics for leaving Fiji, and then enjoyed a farewell luncheon with Richard Pruett at 12:30 p.m. before taking a taxi to the airport to begin the trip home. Travel back to the United States was largely uneventful, with the exception of security inspections focused on the ossuary and its contents. Invariably, as the bones revealed themselves on each x-ray screen, the following conversation was repeated.

Security Officer: What's in the box sir?

Quigg: Human remains.

Security Officer: Please step over here, sir.

After examining the paperwork Quigg carried with the ossuary, the bones were free to go...sometimes with a parting verbal jest from security such as, "Amelia Earhart right? See you on Discovery."

Quigg flew to Salt Lake City, Utah to deliver the ossuary to Karen Ramey Burns, Ph.D., forensic anthropologist and TIGHAR member. Burns had been consulted by phone from Fiji and would soon conduct a thorough forensic examination of the closet bones, recording precise measurements and providing analysis on whether or not any of these bones matched the description of those recorded by Dr. Hoodless in 1941. Quigg delivered the ossuary to Dr. Burns' home on May 23.



*Remains of cold case victim in police forensics storage room, CWMH.
Photograph by Karl Kern,*

Closet Bones Analysis

The fourteen bones found in a cardboard box in the CMWH morgue closet in May 2011 are different from the thirteen bones described by Dr. Hoodless in his April 1941 report. The five types of bones appearing in both sets included femurs, a tibia, a radius, a rib, and a partial skull. However, the general condition of the closet bones appeared to be similar to the condition of those examined by Hoodless, and, with the right sequence of speculative events, it was possible that the 2011 closet bones collection included one or more of the bones detailed in the 1941 report.

In June 2011, Dr. Burns completed her examination of the CWMH closet bones and the collection was forwarded to Dr. Cecil Lewis at the Molecular Anthropology Laboratories of Oklahoma University. Dr. Burns found that thirteen of the fourteen bones appeared to be from a single female individual, but the remaining femur (one of three) was clearly unrelated to the rest. Mitochondrial DNA was successfully extracted and sequenced from three of the related fourteen bones (including the skull frontal bone) in the university laboratory, where Dr. Lewis confirmed all three sequences matched one another as being from the same individual. Further, Dr. Lewis concluded that these sequences are similar to several known Polynesian haplogroups (DNA patterns common in particular ethnic groups) and are not similar to the Earhart mitochondrial DNA sample TIGHAR has on file. Simply stated, the closet bones from the CWMH morgue do not include the remains of Amelia Earhart or Fred Noonan.¹⁴

A key question is whether or not the morgue closet bones could contain at least *some* of the bones examined by Dr. Hoodless in 1941. As noted above, the 1941 Hoodless collection (13 bones) and the 2011 morgue closet collection (14 bones) have only five types of bones in common. For the morgue closet bones to be those examined by Hoodless one must speculate that some of the Hoodless collection was lost and some additional bones from the same individual (with the exception of the third femur) were found and added to the collection between 1941 and 2011. The five types of bones common to both collections differ in dimensions and condition. Dr. Burns addresses this issue directly in her report (see Attachment):

This assemblage of bones is not the same as the one examined and described by Dr. Hoodless in 1941. It is possible that some of the bones examined by Hoodless were ultimately disassociated and deposited with other stray bones, but if this box contained such a collection of bones, the bones would be expected to be in different states of deterioration and staining. Also bone densities would be different and matched pairs would be the exception. Unfortunately, this does not seem to be the case. The bones are remarkably consistent in degree and type of weathering and deterioration. Also, where the left and right of the same bone are present, the sides seem to match, suggesting that they are from the same person.¹⁵

DNA analysis has proven the 2011 morgue closet bones are those of a Polynesian per DNA analysis. Though DNA testing was unavailable to Dr. Hoodless in 1941 (making conclusions of ethnicity imprecise) he does state, "I am not prepared to give an opinion of race or nationality of this skeleton, except to state that it is probably not that of a pure South Sea Islander-Micronesian or Polynesian."¹⁶

Summary of Search Results

All expedition initiatives were successfully completed by the 2011 Fiji team, including:

- 1) A comprehensive search of all buildings on the grounds of Colonial War Memorial Hospital in Suva, Fiji. Two collections of bones found, unrelated to Earhart.
- 2) A comprehensive search of all buildings on the Hoodless House, Pasifika, and Tamavua campuses of the Fiji School of Medicine. Study collection of bones examined in Anthropology Laboratory of Pasifika campus, unrelated to Earhart.

The above two search initiatives included the close examination of every alcove, attic, basement, boiler, closet, crawl space, cupboard, electrical and maintenance area, refuse pile, restroom, roof,

14 Email to Gary F. Quigg, et. al. from Ric Gillespie, September 12, 2011; Noted forensic anthropologist, TIGHAR member Dr. Karen "Kar" Ramey Burns died unexpectedly in January 2012. Her expertise and friendship are greatly missed. Dr. Waquinabete was informed of the test results on the bones and asked for his preferences regarding the return of the collection to CWMH.

15 Karen Ramey Burns, "Observations of Bones from the Fiji School of Medicine, Suva," (unpublished) June 7, 2011.

16 "Amelia Earhart's Bones and Shoes," http://tighar.org/Publications/TTracks/14_2/14-2Bones.html (Accessed June 12, 2014).

shower stall, storage space, tunnel, and work area in every structure, including the smallest ancillary facilities.

- 3) A comprehensive search of the Collections Storage Room in the main building of the Fiji National Museum. No bones or associated items were located.
- 4) Interviews of persons of interest, including:
 - Mary-Clare Ame, Manager, Library Services, Fiji School of Medicine (Pasifika)
 - I. R. Bakani, M.D., Cardiologist, CWMH (retired)
 - Sereani Bainimarama, Chief Hospital Administrator, CWMH
 - Elizabeth Erasito, Director of the National Trust of the Fiji Islands
 - Tukaha Mua, M.D., Anesthesiologist, CWMH
 - Alanieta Navono, Environmental Health Laboratory, Fiji School of Medicine (Tamavua)
 - Bal Ram, Morgue Attendant, CWMH
 - Ian Rouse, Ph.D., Dean, Fiji School of Medicine
 - Ifereimi Waqainabete, M.D., Medical Superintendent, Ministry of Health

Conclusions

As of May 22, 2011, after a meticulous search of all areas of Colonial War Memorial Hospital, all three campuses of the Fiji School of Medicine, and the Collections Storage Room of the Fiji National Museum, none of the bones or associated items found on Nikumaroro in September 1940 and examined by Dr. David Winn Hoodless at the Central Medical School in Suva, Fiji in April 1941 were located. While the discovery of a cardboard box containing fourteen bones of unknown origin in the closet of the CWMH morgue during this expedition led to great expectations, subsequent analysis proved these remains were unrelated to the Earhart disappearance. Although new anecdotal data was collected regarding the unexpected discovery of human bones at the former residence of Dr. Hoodless in December 2009, the location of these remains was not determined. Further research in Fiji to locate the bones and artifacts found on Nikumaroro is merited. The following initiatives are recommended:

- 1) Further discussions with R. Ponnu Swamy Goundar, M.D., Director of the Fiji Institute of Forensic Science of the Fiji Police Force, Suva.
- 2) Locate and again interview Satya Deo, formerly in charge of human remains at Tamavua campus, Fiji School of Medicine. Mr. Deo was first interviewed by TIGHAR in 1999.
- 3) Locate and interview Jone Senilagekali, M.D., former anatomy tutor at the Fiji School of Medicine, and Dr. Patelle (first name unknown) whom Dr. Neil Sharma (Minister of Health) recommended as helpful informants.
- 4) Continued investigation of the Fiji National Museum facilities, particularly a search of all storage areas in ancillary structures.
- 5) Continued investigation of the December 2009 bones discovery in the attic of the Kitchen Building (former Hoodless residence) and the related anecdote of a skull and wrist/finger bones being located in a campus dormitory.
- 6) Obtain a copy of the unedited manuscript for *Misi Utu: Dr. D.W. Hoodless and the Development of Medical Education in the South Pacific* by Margaret W. Guthrie.
- 7) Follow up, and continual contact, with key personnel the 2011 team met at CWMH, Fiji School of Medicine, and Fiji National Museum in hopes that keeping TIGHAR's bone search on their minds may lead to additional information leads or relevant discoveries.
- 8) Pursue all reliable information leads obtained on the 1999, 2003, and 2011 Fiji Bone Search expeditions that remain uninvestigated.¹⁷

¹⁷ See Thomas F. King, "1999 Bones Search I," http://tighar.org/wiki/1999_Bones_Search_I (Accessed August 8, 2014) and Martin X. Moleski, "Fiji Bones Search II Final Report," http://tighar.org/Projects/Earhart/Archives/Research/Bulletins/42_FijiBone-Search.html (Accessed August 8, 2014).

The Fiji Bones Search 2011 team wishes to thank TIGHAR administration, and the board of directors, for their support in this endeavor.



Gary F. Quigg, Karl Kern, Lonnie Schorer, Jon Overholt, M.D. Mai Life Magazine, June 2011.



Colonial War Memorial Hospital, c. 1930. Photograph from <https://www.google.com> (Accessed July 10, 2014).

Attachment

Observations of Bones from the Fiji School of Medicine, Suva

by K.R. Burns, Ph.D., Forensic Anthropologist, University of Utah

Date: June 7, 2011

Background: This box of bones was delivered to 1926 Imperial St, Salt Lake City, Utah, by Gary Quigg on May 23, 2011. I was not in Utah at the time, but the bones were secured in a locked house by Tom Walsh. The box was intact and unaltered when I returned on May 28, 2011.

The box is built of clean plywood. The box lid was secured with 10 brass screws, 3 of which were covered with an intact layer of glue or sealing wax. The box was covered with a layer of cardboard secured with packing tape and addressed to Gary Quigg in Indiana. A metal drawer or cabinet handle was attached to the box at the narrow end.

The bones appear to be the same as seen in the photos emailed by Gary Quigg and the TIGHAR team from the Fiji School of Medicine in Suva. The photos were discussed in the report of May 15, 2011.

Inventory:

1. cranial bones (all in consistent condition, probably from same skull)
 - a. frontal bone
 - b. left zygoma and attached maxilla fragment
 - c. left temporal fragment
2. left clavicle shaft (no proximal or distal ends)
3. three left rib shafts (These are mid-thoracic ribs, not ##1, 2, 11, or 12)
4. right and left radius shafts (no proximal or distal ends, not measurable for stature)
5. right and left ulna shafts (no proximal or distal ends, not measurable for stature)
6. two intact right femurs (a teaching-quality femur: max length 43.5 cm., and a weathered femur: max length 47.0 cm.)
7. one intact left femur (a weathered femur: max length 47.1 cm.)
8. one intact right tibia (max length: 38.9 cm.; minimum articular length*: 37.2 cm.) *articular length excludes the medial malleolus
9. one left tibia shaft (no proximal or distal ends)

MNI: Minimum Number of Individuals (based on duplicate elements): 2

The second right femur (described as "teaching quality") is from a second individual with a distinct postmortem history. It is completely different in size, weight, coloration, and preservation. It is coated with a protective substance and has hand-written printing on surface. It reads, "CHRIS 9T7," and "TO BE OR NOT TO BE," in addition to other, less legible, script. The teaching femur also sports a bracelet of paper covered in transparent tape. The paper appears to be torn from scrap typing paper. I cut off the bracelet in order to read the paper. A date from '96 is partially visible. The maximum length of the teaching femur is 435 mm.

Condition of Bones:

The taphonomic changes in the bones are relatively consistent, with the one exception of the odd second right femur, as described in MNI. The bones are completely devoid of soft tissue and without odor. Oils are leached out with the exception of the distal ends of the tibiae which remain somewhat smooth and brownish-yellow. The overall color is grayish tan, the typical result of sun-bleaching and general weathering. The majority of the surfaces are etched with fine lines or pitted. A small quantity of brownish sand is caked on the inner table of the frontal bone. The proximal and distal ends of most of the long bones appear to have been gnawed. Several of the

marrow cavities are hollowed out in an unusually smooth manner. Much of the spongy bone is gone. (See the clavicle, proximal right tibia and distal left femur for good examples.)

Note: The unique pattern of unstained pitting covering the shaft of the left femur is curious. I have seen similar pitting resulting from surface molds, but it was accompanied by heavy staining. I have also seen pitting associated with attachment of marine invertebrates, but this is different.

Bone-by-bone Comparison:

The following section compares the descriptions from Dr. Hoodless' report to the contents of the cardboard and plywood box from Fiji School of Medicine.

Hoodless' Report, April 4, 1941:

“The bones included:- (1) a skull with the right zygoma and malar bones broken off: (2) mandible with only four teeth in position; (3) part of the right scapula; (4) the first thoracic vertebra; (5) portion of a rib (? 2nd right rib); (6) left humerus; (7) right radius; (8) right innominate bone; (9) right femur; (10) left femur; (11) right tibia; (12) right fibula; and (13) the right scaphoid bone of the foot.”

(1) a skull with the right zygoma and malar bones broken off:

- There is no complete skull, but there is a complete frontal bone, a complete left zygoma still attached to a fragment of the left maxillary bone, and a fragment of the temporal bone, including the mastoid process.
- The bones appear to be from a young adult. This is based on the fact that the bones are cleanly disarticulated at the sutures from the other skull bones. The only sutural fusion in this sample is within the nasal sinus.
- The skull bones are consistent in form with those of a female. The supraorbital ridges are not prominent, the supraorbital margin is fairly sharp, and the mastoid process is small.

(2) mandible with only four teeth in position;

(3) part of the right scapula;

- There is no mandible.
- There is no scapula.

(4) the first thoracic vertebra;

- There are no vertebrae.

(5) portion of a rib (? 2nd right rib);

- There are three left ribs, but not a 2nd rib, right or left.

(6) left humerus;

- There is no humerus.

(7) right radius; (Hoodless measured it for stature estimation. It was 24.5 cm.)

- There is a right radius, but the ends are missing and therefore the bone is not measurable for stature. The length of the shaft fragment is 23.5 cm.

(8) right innominate bone;

- There is no innominate bone.

(9) right femur; (Hoodless reported that he measured it for stature estimation, but he did not list the measurement in his notes. Therefore, we have no way to compare, other than to see if the femur length is consistent with the height generated by Hoodless' measurements.)

- There are two right femora. The first is weathered and appears to be a match to the left femur included in the box. The maximum length of the “weathered” right femur is 47.0 cm. For a woman of European genetic origin, this femur is consistent with a stature of 5 feet, 7 inches +/- 1.5 inches.
- The second right femur is in excellent condition (not weathered) and is covered with a protective coating and miscellaneous ink writing. It looks like a teaching exhibit. The maximum length of the “teaching” right femur is 43.5 cm. For a woman of European genetic origin, this femur is consistent with a stature of 5 feet, 4 inches +/- 1.5 inches.

(10) left femur; (We have no record of Hoodless’s measurement.) There is a left femur. The maximum length is 47.1 cm. For a woman of European genetic origin, this femur is consistent with a stature of 5 feet, 7 inches +/- 1.5 inches.

(11) right tibia; (Hoodless measured it for stature estimation. It was 37.2 cm.)

- There is a right and a left tibia in the box. Unfortunately, the right tibia is not measurable for stature because the ends are not present. However, the left tibia is complete and the minimum articular length is 37.2 cm -the same as Dr. Hoodless’ measurement for the right tibia. This is interesting, but it is not definitive. First, it is the wrong tibia. (But what if Hoodless mis-identified or mis-recorded the side?) Second, a minimum articular length is only one of many ways to measure a tibia. For various anatomical reasons, the tibia is awkward to measure. We do not know which method Hoodless used.

(12) right fibula;

- There is no fibula.

(13) the right scaphoid bone of the foot.

- There is no scaphoid of the foot (also called a navicular).

Conclusions:

The bad news: This assemblage of bones is not the same as the one examined and described by Dr. Hoodless in 1941. It is possible that some of the bones examined by Hoodless were ultimately disassociated and deposited with other stray bones, but if this box contained such a collection of bones, the bones would be expected to be in different states of deterioration and staining. Also bone densities would be different and matched pairs would be the exception. Unfortunately, this does not seem to be the case. The bones are remarkably consistent in degree and type of weathering and deterioration. Also, where the left and right of the same bone are present, the sides seem to match, suggesting that they are from the same person. It would be odd for Hoodless to report a right femur and fail to report that the left was present also.

The good news: The sex appears to be female. This is based on morphological features of the frontal and temporal bones. Also, the stature estimate is within the range that would include Amelia. This is based on femoral length measurements. Finally, the left tibia, if measured from the lateral plateau of the proximal articular surface to the distal articular surface, i.e. not including the medial malleolus, is the same length as the right tibia measurement in Hoodless’ report.