

THE FRONT PAGE

KOREA-COLD WAR
FAMILIES OF THE MISSING
c/o IRENE MANDRA
12 CLIFFORD DRIVE
FARMINGDALE, NY 11735



<http://www.koreacoldwar.org>
May 2016 **Issue #52**
POW-MIA WE Remember!

SEND TO:

2016 TENTATIVE FAMILY UPDATE SCHEDULE

August 11-12, 2016, Korean/Cold War Annual Government Briefings, D.C.
September 10, 2016, Green Bay, WI - November 19, 2016, Reno, NV
January 28, 2017 Phoenix, AZ – February 25, 2017 Charleston, SC

TREASURER'S CORNER

Please register early for your spot at the Korea Cold War Families of the Missing Dinner On Friday August 12, 2016 (more details on page 3)

Mail your check payable to: Korea Cold War Families of the Missing

c/o Irene Mandra
12 Clifford Drive,
Farmingdale, NY 11735

Contact your Congressional Reps through the

U.S. Capitol Switchboard - 1-202-224-3121 or House Cloak Room at 1-202-225-7350 (R) and 1-202-225-7330 (D)

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IN MY OPINION

by Irene Mandra

Dear Members,

This year at our annual dinner in Crystal City, we are honoring Mr. **Robert Goeke** (Family Liaison) and **Mr. Gregory Hayes** (Family Support) from DPAA.

The dinner will be held on Friday August 12, 2016 at 6 pm, after the family update. We would love for you to attend to honor these two distinguished gentlemen. More details pertaining to our dinner can be found on

page 3.

I was very disappointed that there was no news from DPAA about the trip Mr. Linnington made to China. I realize that the talks pertain to archival research, but families are waiting to hear about our missing and our prisoners of war.

There are so many questions that still need to be answered. What happened to our Missing? Where are our mens' remains? Why do we continue to pay China when the questions we need answered are not forthcoming?

Soldiers Missing From Korean War Accounted For in 2016

Army Pfc. James M. Smith
Army Sgt. 1st Class Raymond K. McMillian
Army Cpl. Davey H. Bart
Army Cpl. Eldon W. Ervin
Army Sgt. Wilson Meckley
Army Pfc. Roy A. Henderson
Army Cpl. Robert P. Graham
Army Sgt. Billy J. Williams,
Army Cpl. David J. Wishon
Army Cpl. Dudley L. Evans
Army Cpl. Dennis D. Buckley
Army Pfc. Aubrey D. Vaughn
Army Cpl. Kenneth R. Stuck
Army Pfc. David S. Burke

PLEASE JOIN US FOR OUR ANNUAL DINNER

Honoring Robert Goeke and Gregory Hayes (DPAA)

Friday, August 12, 2016 6 pm to 10 pm

Renaissance Arlington Capital View Hotel
(Same hotel as the Annual Family Update)

Salad
Chicken Breast OR Seared Salmon
Potato, Beans and Roasted Carrots.
Caramel Apple Pie, Whipped Cream or Nutella Torta
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\$45.00

Make your reservation early

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Please indicate Chicken or Fish

NEXT GENERATION DNA SEQUENCING

By Mass Communication Specialist 2nd Class Samantha Thorpe -Armed Forces Medical Examiner System

When American biologist James Watson and English physicist Francis Crick first discovered the double helix in 1953, they could not have imagined the huge strides DNA technology would take in just a few short years. From the 1977 development of the Sanger Sequencing technique by Frederick Sanger to the 1996 birth of Dolly the Sheep, the first ever cloned animal, to the 2003 completion of the Human Genome Project, which sequenced the human genome to 99.9 percent accuracy, scientists have continually improved upon their methods and techniques to lead us to the DNA Sequencing of today.

The DoD DNA Registry, Armed Forces DNA Identification Laboratory (AFDIL), which is part of the Armed Forces Medical Examiner System (AFMES) at Dover AFB, Del., is working with the newest innovation in Forensic DNA science, Mitochondrial DNA (mtDNA) Hybridization Capture and Next Generation DNA Sequencing (NGS). Utilizing this new technology and process, scientists will be able to obtain mtDNA sequencing results from severely degraded DNA samples that previously failed with traditional sequencing methods. "Over the past 15 years, AFDIL has been working with the Defense POW/MIA Accounting Agency (DPAA) to sequence mtDNA samples from 100 of 800 unknown Korean War service members interred, or buried, at the National Memorial Cemetery of the Pacific in Hawaii, also known as the Punchbowl." said Dr. Timothy McMahon, Deputy Director of Forensic Services, Contractor with the American Registry of Pathology Sciences LLC. The problem is that the mtDNA within the cells has been damaged by the environment and preservation methods used in the 1950's."

McMahon explained that in 1953, as part of Operation Glory, North Korea turned over 4,167 deceased U.S. and NATO service member's remains, 849 of which were not identified. The remains were sent to Camp Kokura, Japan where they were prepared for burial using chemicals that were harmful to the mtDNA. Using new instrumentation, AFDIL was able to identify that the mtDNA obtained from these samples is far smaller than their current mtDNA sequencing testing capabilities. Once AFDIL was able to determine the size of the mtDNA, the scientists were able to develop a custom testing method using NGS technologies.

"Since 2000, one hundred of the unknown service members have been disinterred from the Punchbowl by DPAA," said McMahon. "Using current mtDNA sequencing methods, only one of the samples has been accurately sequenced. Thanks to NGS technologies, AFDIL will be the first forensic laboratory in the U.S. to utilize a laboratory developed mtDNA NGS sequencing method to conclusively sequence the smallest, most degraded forensic samples. Additionally, this method has the potential to allow for the identification of any unknown service member whose mtDNA has been chemically treated."

Before this most recent scientific breakthrough, Sanger Sequencing was the forensic standard for mtDNA sequencing, and had been for almost 40 years. The issue that occurred with this long-trusted technology was that it did not give AFDIL the capability to efficiently amplify small fragments, such as the remains from the Punchbowl, in order to sequence them using the Sanger method.

"These samples from the Punchbowl are unique because they were treated post-mortem and the chemicals used to preserve the remains severely damaged the mtDNA," said Supervisory DNA Analyst, Kerriann Meyers. "Our current technology uses primers to target mtDNA fragments that are 120 base pairs in length, but our fragments from the Punchbowl are under 100 base pairs. I

think a lot of analysts used to shy away from working with the Punchbowl samples because only 0.1 percent of the samples would come back conclusive and so it was very discouraging."

In 2003, Senior Research Scientist, Dr. Odile Loreille, was hired to aid in the sequencing of the Punchbowl samples. Due to her background in ancient DNA, Loreille was able to understand the highly damaged mtDNA which then led her to begin work on a new sequencing method in 2010.

"Odile's specialty was working with ancient DNA, which is DNA from archeological and historical specimens," said Higginbotham. "That experience is what gave her the insight to begin work on the new protocol. From there Dr. Charla Marshall, Chief, Emerging Technologies Section, Kim Andreaggi, Research Scientist and I worked tirelessly to turn that idea into a forensic protocol, validate and then implement it."

The massive parallel sequencer used to create the new NGS protocol was originally created to sequence small fragments of DNA with fewer than 350 base pairs, but AFDIL took it even further when they began work on sequencing mtDNA that could be smaller than 120 base pairs.

"Other laboratories are also making progress on [forensically] validating NGS, however none of them are working with samples as degraded as the ones we see coming from the Punchbowl," said Higginbotham. "What we are doing with these samples is unique thanks to our mission, and I don't think other laboratories realize how damaged our samples really are."

In order to begin the process of sequencing the extremely damaged mtDNA, the analysts treat the samples, which they receive from DPAA, similar to how the samples would be treated using the current method.

"The bones are sanded and ground down to a powder, the [DNA] extraction is carried out using a demineralization process and it is then allowed to incubate overnight," said Higginbotham. "The extract then contains the isolated mtDNA which is run through a bio-analyzer instrument to ensure there are enough quality fragments to get an authentic result."

Next, the samples are treated with a Uracil Specific Excision Reagent (USER) kit to remove damaged bases. "While we call this step a repair, we are actually damaging the DNA more by leaving open sites and overhanging ends where the damaged bases were removed and leaving the fragments shorter," said Research DNA Analyst, Jennifer Higginbotham. "After this, we begin our library preparation end repair step."

During this step, a negative control is added to the sample to monitor for any possible contamination throughout the process and a positive control is added to ensure the final reaction functions properly. Next, the open sites and overhanging ends are filled with complementary bases. This forms blunt ends on the samples to which adapters are ligated, or attached.

"We then place a unique barcode on each end of the sample fragments," said Higginbotham. "Once the barcodes are added we can pool, or combine, all the samples in the sequencer at one time. The unique barcodes allows the computer software to later separate and group matching samples." When the library preparation is completed, the samples are screened by the bio-analyzer to assess the quality of the libraries. If the quality is poor, the library preparation is repeated.

"At this point samples using traditional NGS methods could be sequenced, however, the

Punchbowl samples have extremely high amounts of non-human DNA," said Higginbotham. "If we were to sequence them at this time we would have around one percent of the reads mapping as human. So what we do is enrich for the human DNA using a process that the ancient DNA community calls hybridization capture."

Hybridization capture consists of baits, or probes, which are made up of 75-base-pair sequences from the human genome DNA reference sequence (rCRS). These baits are created to be complimentary to and target specific sequences in the mtDNA genome. The baits are added to the sample and incubated for about 24 to 36 hours. Magnetic beads, which have a strong affinity to the baits, are then introduced. When removed, the magnets pull the baits out and with the baits come the sections of the mtDNA fragment they were attached to. This process, which is also called target capture, allows the non-human DNA in the sample to be removed from the human mtDNA being targeted.

Next, a Polymerase Chain Reaction (PCR) copies the target mtDNA in order to increase its yield, giving the sequencer more fragments to work with and a better chance at sequencing them.

"The last step is to combine our samples in equal volume to create a pool which is loaded on the sequencing instrument," said Higginbotham. "Included in the pool is the reagent blank from the extraction process, a negative control which we added in library preparation, three samples and a positive control which is used to ensure the reaction, in whole, is successful."

The pool is then placed in the sequencer and takes approximately 24 hours to complete sequencing. Once this is accomplished, a profile is made for the service member's mtDNA in order for it to be later compared to possible familial matches already on file.

"The whole NGS process from beginning to end takes approximately two weeks to complete and is extremely labor intensive with very low through-put compared to AFDIL's current past accounting processing methods," said Lt. Col. Alice Briones, Deputy Chief Medical Examiner and Director of the DoD DNA Registry. "Although it has taken 10 years of research to develop a method for getting mtDNA forensic results from chemically modified samples, I am extremely proud and honored to be a Medical Examiner and the current director of the DoD DNA Registry as we bring new hope to numerous families of our nation's fallen who thought their loved ones would never be identified."

Over the years, technology and science has continued to evolve and with this growth comes the great opportunity to not only discover new possibilities but also make a difference in many people's lives. "When I was asked to be part of the NGS team I immediately said 'yes, absolutely' because after all the inconclusive results I have had to report, it will be amazing to get the opportunity to report positive results from the Punchbowl mtDNA samples," said Meyers. "I also think the families of these fallen service members have been waiting a very long time for technology to catch up to their unique situations, so I think that it's huge for the families in helping them get answers and maybe some closure. To be part of this process has been just amazing."

As technologies in mtDNA sequencing continue to rapidly grow and evolve, who knows where we will be another 40 years from now. What we do know now, is that the families of our fallen service members from the Korean War are this much closer to getting the answers they have been searching for, for so long.

Remains of U.S. MIAs in North Korea in political limbo

Published in the Military Times

Eric Talmadge, The Associated Press

RYONGYON-RI, North Korea — The village elder put his shovel aside, stooped down by a scraggly bush and pulled a sack from the freshly turned dirt. Spreading open the sack, he reached in to reveal femurs, skull and jaw fragments, boots, and a rusted green helmet.

"These are your American GIs," Song Hong Ik said at a burial mound near the top of a small hill.

Perhaps they are. But for more than a decade, no one has been trying to find out.

"Until They Are Home" is one of the most sacred vows of the U.S. military, yet Washington has long suspended efforts to look for 5,300 American GIs missing in North Korea whose remains are potentially recoverable. The countries' abysmal relations suggest that no restart is coming soon.

In the meantime, possible remains and recovery sites are being lost as North Korea works to improve its infrastructure with projects such as the Chongchon River No. 10 Hydroelectric Power Station. The bones Song revealed came from that project's construction site.

His village, the hamlet of Ryongyon-ri, is nestled among low rolling hills in the heart of a Korean War battleground almost 100 miles north of Pyongyang. The 90-minute drive from the capital runs through mostly flat land covered by rice paddies or fields of corn and potatoes. The scene is quietly rustic. Farmers use ox carts to transport produce and villagers can be seen walking in the distance on narrow dirt roads.

Not far from the highway that leads past the village, a shallow river runs through a wide valley. Song, polite but to the point, explained as he climbed the hill that the valley will be flooded when the dam is completed.

Song said construction on the plant, which involved a lot of digging, began in earnest four years ago.

That's when the bones started piling up, he said. Enough, he added, to fill a half-dozen makeshift burial mounds on the hill, maybe 70 or 100 sets in all.

He dug up a few other mounds to make his point. Then, after a smoke break, he and the plant's construction supervisor put the bones back in their bags and reburied them.

'Bones for Bucks'

Between 1996 and 2005, joint U.S.-North Korea search teams conducted 33 joint recovery operations and recovered 229 sets of American remains. Washington broke them off because it claimed the safety of its searchers was not guaranteed. Critics of the program argued the North was using the deal to squeeze cash out of Washington — "bones for bucks," they said.

Talks to restart recovery work resumed in 2011, only to fall apart after North Korea launched a rocket condemned by the U.S. as a banned test of ballistic missile technology. There has been no progress since.

With distrust between the two countries chronically high, it took months of requests before The Associated Press was allowed to go to Ryongyon-ri, first last May with a Korean People's Army escort and again in December.

The AP made the requests because North Korea's state-run media have repeatedly said — without giving details — that with construction, agricultural and other infrastructure projects going forward, time is running out for the U.S. military to collect its Korean War dead.

In Washington, such claims are often seen as a not-so-subtle jab at the U.S. government for halting the searches, or an effort to guilt the U.S. into formal talks it has refused to engage in as long as Pyongyang continues its nuclear weapons program.

Pyongyang's approval of AP's visits to Ryongyon-ri may have had similar political motivations. That's often how things work in North Korea, though an army official and villagers angrily denied that their reasons for allowing AP to see the remains were anything other than humanitarian.

In any case, Washington isn't biting. And its war dead are not being brought home.

Lack of Verification

More than 7,800 U.S. troops remain lost and unrecovered from the Korean War. About 5,300 were lost in North Korea.

According to the Pentagon's Defense POW/MIA Accounting Agency, most died in major battles or as prisoners of war. Others died "along the wayside or in small villages," and many of the losses from aircraft crashes also occurred near battle zones or roads connecting them. "So," it says, "it is possible that major concentrations of human remains are located in these areas."

The DPAA lists Kujang County, where Ryongyon-ri is located, as part of a prime search area that could potentially yield 1,600 remains. The Chosin Reservoir, where another major campaign was fought, and POW camp burial grounds near the Chinese border are also priority sites.

"The Department of Defense is committed to achieving the fullest possible accounting," Lt. Col. Holly Slaughter, a DPAA spokeswoman, told AP. "U.S. efforts to recover Korean War remains are a humanitarian effort for our missing servicemen, their families and the American people."

Even so, Maj. Natasha Waggoner, another spokeswoman for the agency, said there is no schedule "at this time" to hold talks to send any search teams back.

Until they do, the jury will remain out on the Ryongyon-ri remains.

It's impossible to judge the veracity of remains simply by looking at them. Only expert eyes and a long and difficult forensic identification process can do that. There were no dog tags, unit insignia or other identification clues mixed in with the remains seen by AP.

Villagers acknowledged the remains were gathered haphazardly as construction progressed. It is quite possible, they said, the remains could include animal bones or the remains of combatants from other countries. Villagers old enough to have witnessed the battle have sketchy memories, at best.

By the time the fighting came to their backyard, from mid-November to December 1950, most of the village, a scattering of about 30 households, had already been evacuated. Those who remained were mostly women, children and elderly people. The village was then known as Sangpyong. "My aunt, uncle and grandfather were caught by the U.S. enemies, who beat them so they got sick and died," said Kim Ri Jun, who was then 13 years old.

Kim and Song had no information about specific units the troops were attached to. They did remember that many U.S. soldiers were black, and that troops from other countries, taking part in U.S.-led United Nations forces, were involved in the fighting as well.

The location and time frame coincide with a major clash between the U.S. and its allies and the Chinese "volunteer" forces fighting on Pyongyang's side. The push north was known as the "Home by Christmas" campaign because Gen. Douglas MacArthur thought the war would be won by Christmas. Instead, it would last two and a half more years, end in a stalemate, and claim 36,500 American lives.

The U.S. government has estimated as many as 270 sets of American remains are likely recoverable in Kujang County alone. Searching for them was one of the top priorities when the U.S. missions were still going to North Korea. Nearly a dozen joint searches were conducted in the area from 1998-2000.

But they ended long before the real digging in Ryongyon-ri began U.S.-Korea relations.

That any joint searches were held at all was almost miraculous. That they would break down seems much more predictable. North Korea and the United States remain technically at war because the 1950-53 fighting ended with an armistice, not a peace treaty. Remains recovery is the only project their militaries have ever worked on together.

Relations were much better when the missions began.

Under President Bill Clinton, the two countries had signed an agreement for the North to freeze its illicit plutonium weapons program in exchange for aid. But that deal unraveled in 2002, the same year President George W. Bush declared North Korea part of the "axis of evil." The searches continued for a few more years, but bilateral relations took a nosedive. North Korea conducted its first nuclear test in 2006 and meaningful contact between the two countries has since been minimal.

Slaughter, of the DPAA, said the total cost to the U.S. to carry out the joint missions was \$19.5 million. Of the 229 remains recovered, 110 have been identified. The recovery of remains has since ground to a halt — to only six, all unilaterally handed over to the U.S. by Pyongyang in 2007.

The impasse on a humanitarian — not political — issue doesn't sit well with some Korean War veterans.

"Those of us who fought there really feel it's a travesty that we haven't been able to get there and try to find those that were killed or died in the prison camps," said Larry Kinard, who fought in Korea with the Army's 3rd Infantry Division and is now president of the 15,000-member Korean War Veterans Association. He noted that since 1982 only 332 Korean War remains have been identified and accounted for.

Kinard told the AP from his home in Texas he is in regular contact with the DPAA and feels it is doing the best it can with limited resources and the challenges it faces of getting into North Korea to conduct searches.

But he added that is of little consolation to the families of the missing.

"Approximately 5,300 of our comrades still lie in the ground in North Korea and little or no effort is currently underway to recover them," he said. "The KWVA members, who average nearly 85 years old, want to see their fellow brothers-in-arms found, identified, brought home and laid to rest in our country."

Song, meanwhile, said he had mixed feelings about gathering the bones of his enemy and moving them to the hill so that they wouldn't be lost when the valley is flooded.

"Frankly, I don't care if the Americans come or not," he said. "But they owe us a thank you for taking care of their dead."

SERVICE CASUALTY OFFICES

Service Casualty Offices serve family members. Each Military Department maintains a service casualty office. The Department of State does the same for civilians. The officials in these offices serve as the primary liaisons for families concerning personnel recovery and accounting. Full-time civilians who have worked this issue for many years and are experienced and knowledgeable help answer family member questions. Military officials also assist to help explain the methods used to account for families' missing loved ones.

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Manpower and Reserve Affairs (MRC)
Personal and Family Readiness Division
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Quantico, VA 22134-5103
(800) 847-1597

Navy

Navy Personnel Command
Casualty Assistance Division
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Families United in a Search for Truth, Dignity, Acknowledgment and Closure

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STAR Fields are required. PLEASE PRINT OR TYPE.

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