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### **E23 Multidisciplinary Approach to the Identification of Military Remains — An Australian Perspective**

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After attending this presentation, attendees will be aware of: (1) the role and capabilities of the Australian Army with regard to locating and identifying the remains of Australian servicemen who remain unaccounted for from past conflicts on foreign soils; and, (2) the multidisciplinary team approach to facilitate the identification of remains.

This presentation will impact the forensic science community by increasing awareness of the Australian Army's capacity with regard to accounting for Australia's missing servicemen. This presentation will also highlight the utility of a multidisciplinary approach to achieve this task, without which a recent identification could not have been substantiated.

The Unrecovered War Casualties-Army (UWC-A) is a relatively new unit within the Australian Defense Force, established in July 2006. Its mission is to account for Australian soldiers who remain unaccounted for from all past conflicts. The role of UWC-A is to: (1) investigate all notifications relating to the discovery of human remains believed to be those of Australian soldiers; and, (2) investigate information that may lead to the discovery of the remains of Australian soldiers. This mission statement is similar to other organizations; however, the uniqueness of this work is that it is achieved by three permanent public service staff, located at Army Headquarters in Canberra, with the remaining team members located across the country serving only in a part-time capacity. The part-time team members are investigators and forensic specialists drawn from the greater forensic community. These specialists are derived from the fields of anthropology, odontology, pathology, archaeology, crime scene, and molecular biology.

In July 2011, a notification to UWC-A resulted in the deployment of a multidisciplinary team to a remote site located at Eora Creek along the Kokoda track. The Kokoda campaign, July and November 1942 (WWII) in Papua New Guinea, occurred when the Australian militia halted the advancing Japanese Imperial Army, causing them to retreat. This campaign sustained heavy casualties for both armies. In a gravesite at Eora Creek, a near-complete set of human remains was recovered and returned to the Australian Commission in Port Moresby for further examination by anthropologists and an odontologist. Based on the quantitative and qualitative examination, the remains were consistent with a young adult male; however, determination of ancestry posed some issues. Initial quantitative assessment of the cranium established that the remains were most likely Caucasoid; however, the central maxillary incisors were heavily shoveled. Using FORDISC® 2, the quantitative assessment of the crania established the remains to be Caucasoid male with a Posterior Probability (PP)=0.397 and Typical Probability (TP)=0.470. Other near possibilities were Japanese male (PP=0.204, TP=0.283) and Hispanic male (PP=0.292, TP=0.429), though given the context, the Hispanic male was unlikely. Stature was initially reported for both a Caucasoid male as 173.4cm±3.27cm and a Japanese male as 167.2cm-171.3cm. The average height for an Australian male during 1942-1943 was 170.2cm-173.7cm and 160.3cm-161.8cm for a Japanese male. Subsequent DNA analysis was performed and ancestry was determined to be East Asian.

Artifacts located within the gravesite surrounding the body were Japanese in origin. Most of the clothing was degraded; however, the boots were more likely Australian-uniform issue. The artifacts included a stamp pad and personalized stamp. This stamp and the biological results, including the mitochondrial DNA (mDNA), subsequently assisted the case investigator to establish the identity of the remains.

The presentation will discuss the case in more detail. This presentation highlights the necessity of a multidisciplinary approach to identification of military remains. Without this approach the discrepancy between the various observations reported by each specialist could not have been resolved and the identity established.

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#### **WWII Skeletal Remains, Identification, Australia**