# **Conservation and Analysis of Human Remains from the Khmer Rouge-Period Mass Gravesite of Krang Ta Chan, Cambodia**

### ABSTRACT

Krang Ta Chan (ក្រាំងតាចាន់) (KTC) is a 1970s Cambodian mass gravesite from the Khmer Rouge (KR) genocide. Eight mass graves were excavated in the 1980s with 10,000+ victims. The Humanitarian and Human Rights Resource Center (HHRRC) funded a 2016 project to preserve and study these remains. A Cambodian team analyzed 5,000+ bones. Sex and age for 1,904 crania were estimated: 57% were male, 44% were 20-34 years old. Most injuries (84%) were blunt force trauma. This project details victims' skeletal injuries and provides further comprehension about the KR era.



## INTRODUCTION

KTC, in Takeo Province, is one of nearly 20,000 mass gravesites throughout Cambodia and was a KR detention center and execution site. When 8 graves were excavated, over 10,000 victims were discovered. The site was converted into a memorial where the bones of the victims have been collected. However, the harsh environmental conditions in Southeast Asia (i.e., sun, rain, and humidity) and the lack of appropriate funding for conservation resulted in rapid deterioration of the bones. All bones were removed from the memorial *stupa* (shrine) and transported to the Choeung Ek Genocidal Center in Phnom Penh for analysis and preservation by an exclusively Cambodian team.



Sleng Museum of Genocidal Crimes' Archive

#### Julie M. Fleischman, Ph.D.



## RESULTS

**Skeletal Elements:** 

- 5,233 bones removed
- 1,904 crania = MNI
- 590 cranial fragments & mandibles
- 2,739 postcranial elements

#### Sex:

- Male = 57%
- Female = 37%
- Indeterminate = 6%

#### Age:

- 20-34 years old = 44%
- 35-49 years old = 31%

#### Trauma:

- Blunt force = 84%
- Sharp force = 16%
- Gunshot = 0.03%







Bone	Right	Left	Total
Femur (ឆ្អ៊ីងក្តៅ)	401	365	766
Tibia (ឆ្អ៊ីងកំភួនជើងធំ)	277	246	523
Fibula (ឆ្អ៊ីងកំភួនជើងតូច)	118	120	238
Humerus (ឆ្អ៊ីងដើមដៃ)	201	175	376
Ulna (ឆ្អ៊ីងកំភួនដៃជំ)	71	79	150
Radius (ឆ្អឹងកំភ្លួនដៃតូច)	81	77	158
Clavicle (ឆ្អ៊ីងដងកាំបិត)	20	17	37
Rib (ឆ្អ៊ីងជំនីរ)			340
Scapula (ឆ្អឹងស្លាបប្រចៀវ)			127
Vertebrae (ឆ្អ៊ីងកង)			11
Sacrum (ឆ្អ៊ីងកញ្ញញ)			13
Cranial Fragments/Mandible (បំណែកឆ្អឹងលលាន៍/ឆ្អឹងថ្កាមក្រោម)			590
<b>Total Cranial Fragments and Postcrania</b>	1,169	1,079	3,329
Cranium (លលាឌ៍ក្បាក)			1,904
Grand Total			5,233





Sharp Force Trauma (C & D)







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# ANALYTICAL & **PRESERVATION PROCESS**

Crania labeled with identification number, inventory/analysis sheet started

Remains photographed prior to (and after) cleaning

Remains cleaned with water, soaked in insecticide and fungicide, dried Re-association of disarticulated (separated) cranial bones attempted Analysis of crania:

- Age-at-death
  Sex
  Cranium weight, length, and width taken Traumatic injuries recorded and photographed
- Remains coated with polymers to seal them against humidity

After analysis and preservation were complete, all of the remains were respectfully returned to a renovated stupa. This project provides important information about the demographics of the KR victims and their sustained traumatic injuries, and contributes to a more comprehensive understanding of the KR era.



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