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Evidence of Violent Conflict in Males from Pot Creek Pueblo

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INTRODUCTION

Evidence of violent conflict in the American Southwest is present in almost all regions, with a marked increase beginning in the late AD 1100s and almost ubiquitous by the 1300s.⁸ Much of the literature, however, only provides indirect evidence for interpersonal conflict. Many of the studies argue violent conflict occurred because of the presence of defensive architecture, site burning¹, non-formally buried bodies^{9, 13, 19}, rock art depicting warriors holding clubs and shields¹³, ethnographic data of prehistoric conflict¹, extreme dismemberment of individuals^{2, 12}, and healed blunt force cranial trauma¹¹. Direct evidence of fatal trauma appears only sporadically in the archaeological record⁹, leaving much of the evidence indirect or probabilistic in nature. Much of the skeletal evidence of conflict is limited to cases of extreme dismemberment, healed blunt force trauma in locations on the skull that suggest possible accident or abuse and not actual combat, or non-formally buried skeletal remains sprawled on floors of pithouses or kivas with no evidence of direct trauma. Thus, there are few means to determine whether fighting actually occurred, or if the violence was the result of ritual deposits, raiding parties, massacres, or abuse. Evidence of fatal trauma from face-to-face conflict is rare in the Southwest, even though much rock art is devoted to the depiction of warriors using shields and clubs or warriors engaged in combat.¹³

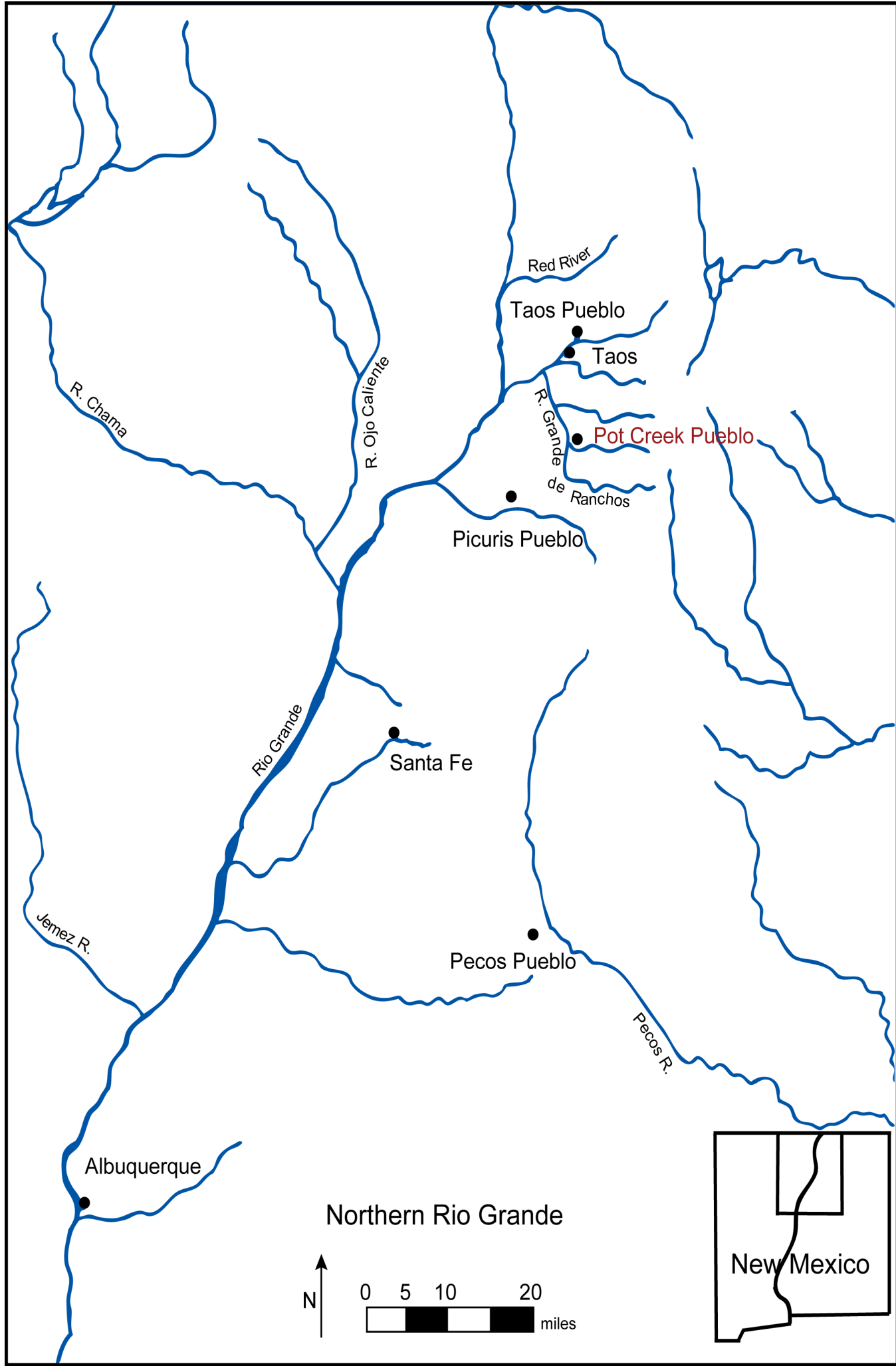
The present study focuses on skeletal remains from Pot Creek Pueblo (AD 1260-1320), a Coalition, Pueblo III site in Taos, New Mexico. Though interpersonal violence can be inferred from cases of healed blunt force trauma to the cranium, non-formally buried bodies, and dismemberment evident at numerous sites in the Taos Valley during the proceeding Developmental Period¹⁹, only the remains from Pot Creek Pueblo have direct evidence of fatal, peri-mortem trauma. These remains represent a rare line of evidence for interpersonal violence, and potentially warfare related deaths, in the American Southwest.

ARCHAEOLOGICAL CONTEXT

The Taos Valley is located in the foothills of the Sangre de Cristo Mountains and the Ancestral Puebloan inhabitants of this region represent the northern-most occupation in the Northern Rio Grande. The valley is bounded by the Rio Grande on the west and the Sangre de Cristo Mountains on the east.

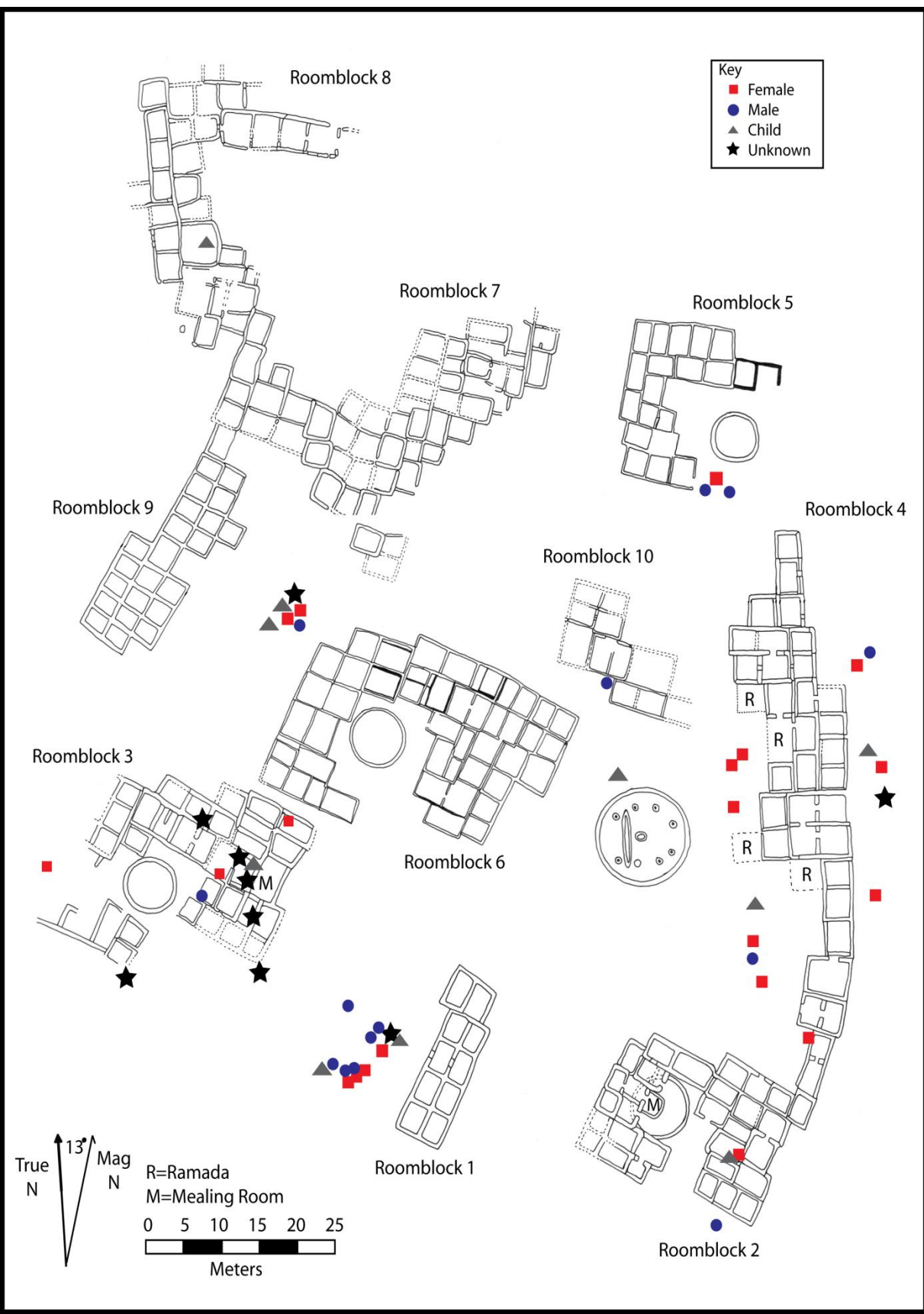
Pot Creek Pueblo is situated in the Rio Grande del Rancho Valley in the southern portion of the Taos Valley. Two permanent water sources are available close to the site, the Rio Grande del Rancho and Rito del la Olla. Pot Creek Pueblo was occupied approximately AD 1260-1320 and represents a very short lived aggregated puebloan occupation that spanned approximately three generations. Construction of the aggregated pueblo rooms began in the late 1260s with and a building surge in the 1310s created plaza spaces surrounding a Great Kiva, dating to AD 1318.¹⁹ The site was excavated over a fifty-year period by Southern Methodist University and burials were encountered between 1957 and 1984.

Abandonment of the site occurred sometime during the 1320s, and the Great Kiva was never completed. Adler notes evidence that much of the southern portion of the site was purposefully burned at abandonment and that social friction caused by the death of a woman may have caused the split and abandonment of the village.¹



Map of the Northern Rio Grande

MATERIALS AND METHODS

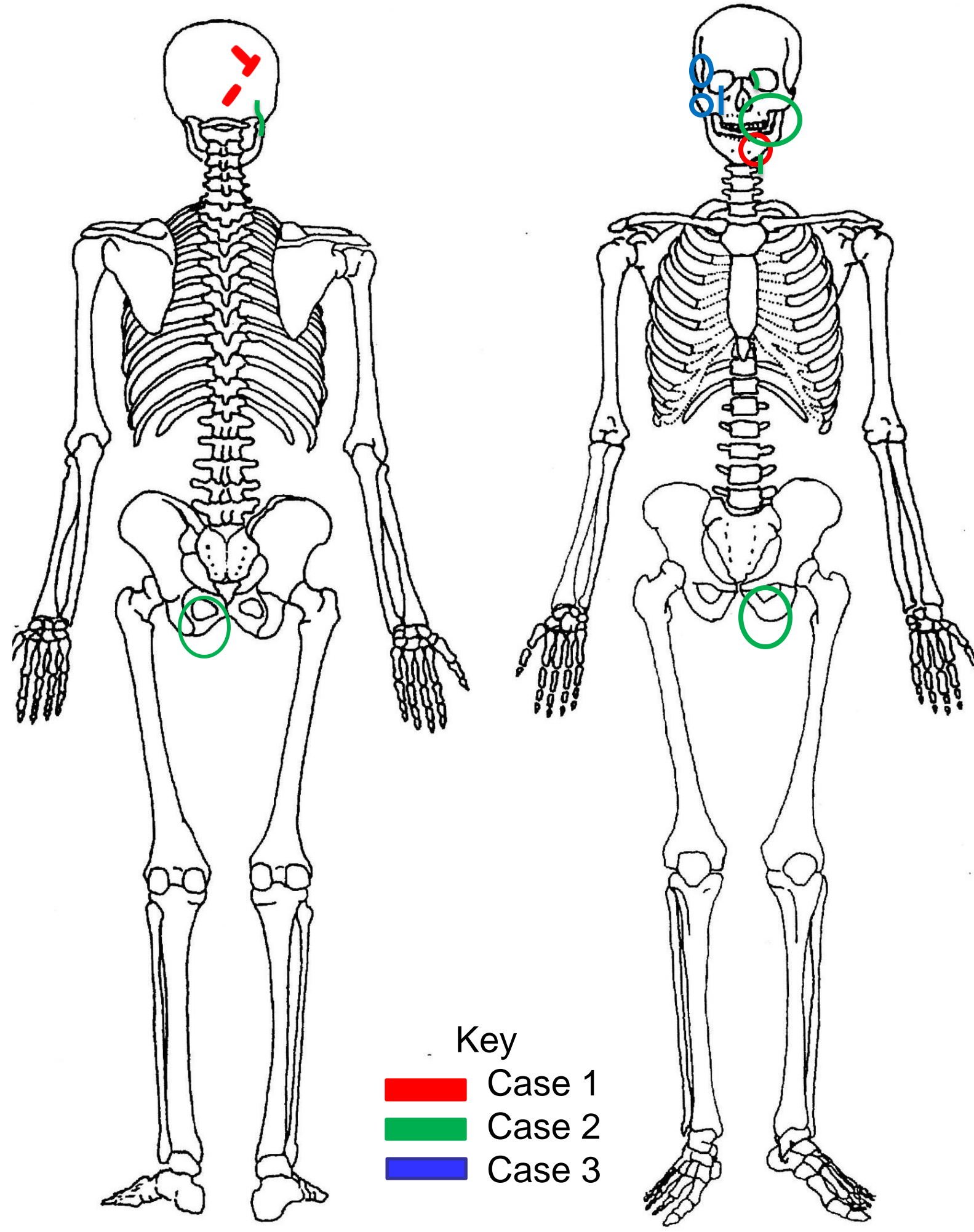


Burial Spatial Patterning at Pot Creek Pueblo

Skeletal remains available for study from Pot Creek Pueblo included 47 individuals, 18 males, 21 females, and 8 children 0-5 years of age.¹⁹ Life expectancy was 24.47 years at birth. Average stature for males was 156.80 +/- 7.72 cm and females was 150.92 +/- 5.19 cm.¹⁹

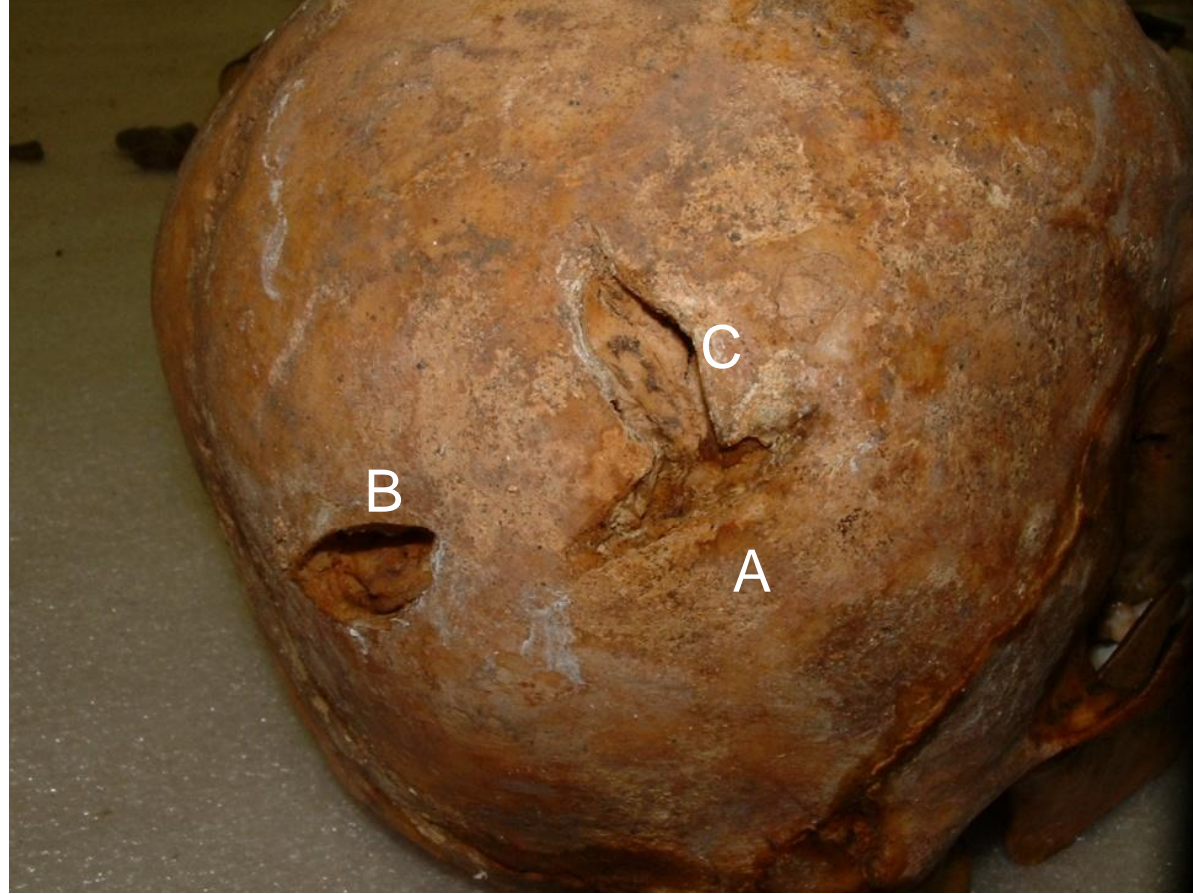
All remains, excluding two individuals buried on the second floor of roomblock two and one child in a kiva in roomblock eight, were found with ash, trash, and one or more stones covering the body and were in an extramural context.¹⁹

Differential diagnosis of trauma included recording the location, number of fractures, types of fractures, presence of abnormal/pathological bone, color of the edges, and shape of the trauma.^{7,10,17} Blunt force trauma patterns were categorized and described according to the terminology defined by Galloway.⁴ CT scans were taken of the skulls for documentation and inspection of fracture patterns to the endocranial surfaces.



Key

Case 1
Case 2
Case 3



CASE 1

1984-TA1-S8W4-2383
Sex: Male
Age: 20-29 years

- An anterior, alveolar hinge fracture with avulsion of the left pre-molar 1 is on the mandible.
- Fractures of the mandibular pre-molar 2 and maxillary left lateral incisor, canine and pre-molar 1 are present.
- Three blunt force, elliptical, depressed fractures are on the posterior aspect of the right parietal.

Each traumatic injury is peri-mortem and evidence of healing is absent. The multiple injuries, which include trauma to the face and chopping trauma to the posterior portion of the skull, indicates at least a portion of the conflict occurred in a face-to-face manner. The multiple peri-mortem chopping fractures suggest they were inflicted with the intention of causing fatal trauma to the individual. The linear orientation of marks A and B, and the intersection of mark C into mark A, indicate defects A and B occurred before C, with B potentially occurring first due to depth and severity of the strike.



CASE 2

1973-TA1-39-B197
Sex: Male
Age: 18-20 years

- Severe blunt force trauma occurred to the right mid-facial region. The blow was delivered with considerable force and resulted in a Le Fort III fracture.
- Diastatic fractures are present in the left frontal-zygomatic suture, right zygomatic arch, and right and left occipito-temporal sutures posterior to the mastoid.
- A linear fracture is superior to the left eye orbit.
- A linear fracture extends from the occipital temporal suture on the right posterior parietal.
- A linear fracture extends across the left temporal bone.
- Mandible: A comminuted body fracture is present with peeling between the left pre-molar 2 and molar 1.
- Post-Cranial: An isolated rami fracture is present on the left pubic rami.

The blunt force trauma to the left midface region probably resulted in a comminuted fracture of the zygomatic and maxilla and Le Fort III fracture. Such an injury usually occurs in crushing incidents with great force that was applied with little speed.⁴ The lack of fracturing of the teeth in the mandibular body suggests the majority of the force was directed in the zygomatic region. Due to the missing cranial elements, it is difficult to ascertain if the trauma is the result of one or more than one impact. The pelvic fracture, though not pictured, resulted from superior, vertical compression trauma lateral to the pubic symphysis. This type of isolated rami fracture is one of the most common pelvic fractures and is produced by direct blows.⁴ The pattern of fractures suggest face-to-face conflict with multiple strikes.



CASE 3

1961-TA1-375-F10
Sex: Male
Age: 15-19

- A blunt force depression fracture is on the right parietal adjacent to the coronal suture.
- CT scans revealed a hinge fracture of the greater wing of the sphenoid within the orbit. Peeling is evident.
- Buckling is present on the orbital wall of the greater wing of the sphenoid.
- Buckling and a crush/compression fracture are on the ectocranial surface of the right greater wing of the sphenoid, occurring secondary to severe posterior/inferior compression of the orbital rim.
- Post-mortem damage of the zygomatic required analysis of CT scans to differentiate between post and peri-mortem trauma.

The location of the blunt force trauma suggests face-to-face combat. There is potential that the injuries of the parietal and sphenoid were sustained by a single blow, although multiple blows may have occurred with one resulting in the depression fracture and the second with a blow to zygomatic close to the zygomatic-frontal suture. However, it is most probable that both injuries occurred as a result of a single incident. Anterior temporal impacts lead to fractures that migrate down across the orbital plate or the speno-temporal region and fractures to the sphenoid are common in blunt trauma.¹⁰ The transmission of direct force to the superior edge of the orbital rim can cause buckling of the greater wing of the sphenoid, a blow-in fracture of the orbital wall, and compression of the optic nerve without damage to the zygomatic.²⁰ The fracture patterns of the greater wing of the sphenoid in this case are consistent with trauma to the superior, lateral orbital rim.

DISCUSSION AND CONCLUSIONS

The pattern of peri-mortem, fatal trauma injury in the cranium, coupled with the multiple blows to the cranium and post-cranial skeleton, is typical of individuals engaging in hand-to-hand combat. The sharp margins and lack of healing indicate these skulls were fractured while the bone was still fresh. Absence of healing suggests the trauma occurred at the same time and resulted in the death of the individual. Additionally, the multiple fractures and severity of the injuries suggests that the individuals traded several blows with an opponent and that there was a preference for hand wielded weapons. This conclusion is based upon data collected by Shepherd et al. indicating that during an assault, injury increases in severity as the alleged number of blows increased and victims reporting more than *three blows* were more likely to have a fracture.¹⁴

Additionally, rock art dating to the period may provide a clue to the type of weapon utilized to inflict the trauma to the skulls. Schaafsma provides evidence of rock art images found in the American Southwest depicting warriors holding shields and two types of clubs, one pointed and the other rounded¹³, that date to the time period Pot Creek Pueblo was inhabited. The trauma present on the remains is consistent with an individual wielding such a weapon, with the club striking the skull or face (Cases 2 and 3) and the handle coming into contact with the mandible (Case 2) or lateral superior portion of the orbit rim (Case 3). In both Cases 2 and 3, the angle of the fractures and the type of damage inflicted are consistent with a strike in which both the club and the club handle cause simultaneous damage. Parry fractures, usually an indication of interpersonal conflict, are absent in the individuals in this case study. However, this absence may reflect the use of shields, as depicted in the rock art, to protect the arms against attack during combat rather than a lack of defensive wounds.

Evidence of violent conflict is endemic in the American Southwest. The injuries sustained by these individuals from Pot Creek Pueblo represent a rare example of fatal, peri-mortem trauma consistent with participation in hand-to-hand combat in the Southwest. Additionally, this study represents the first evidence of trauma patterns that could have resulted from the use of a weapon depicted in the local rock art.

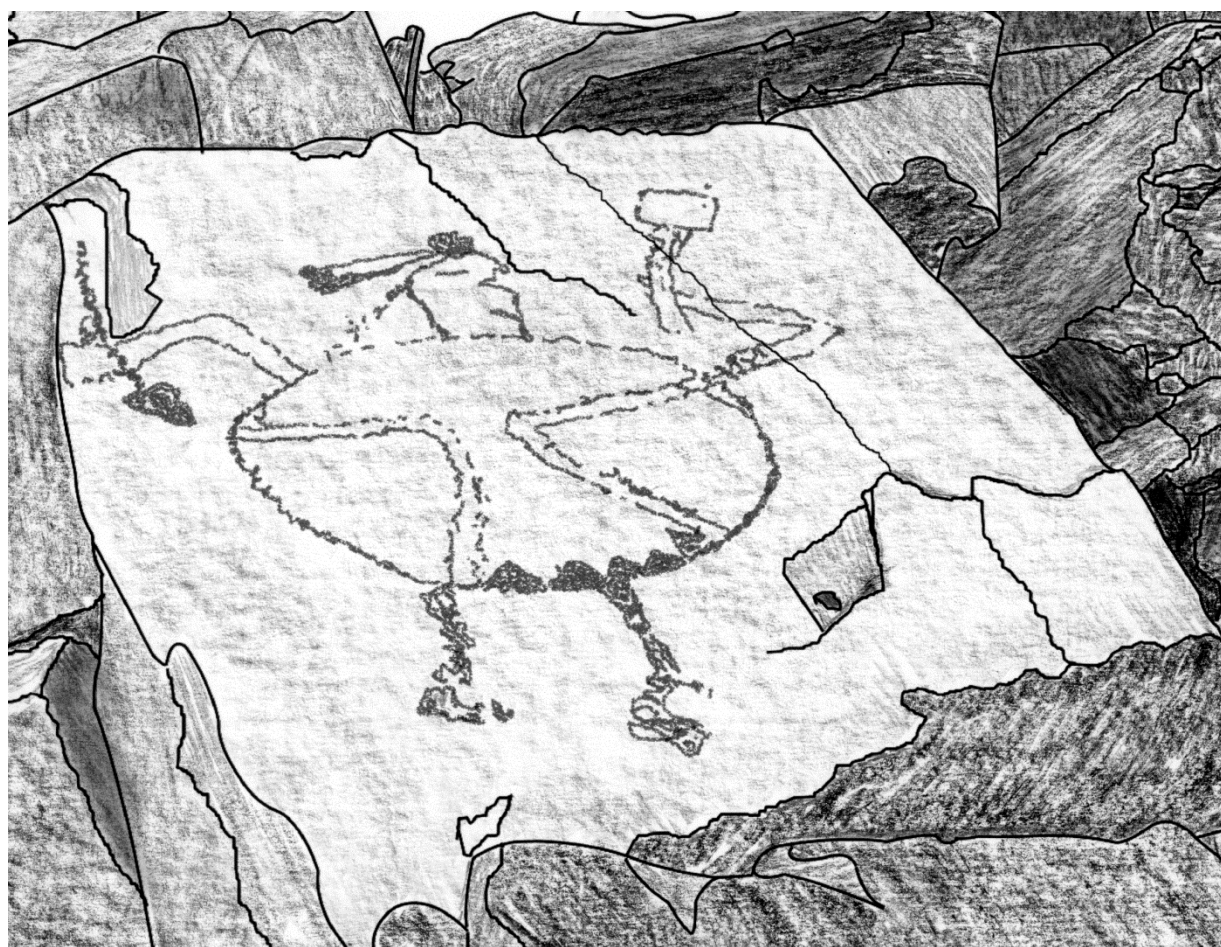


Image of a warrior holding a shield and club

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