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A PIONEER BURIAL NEAR THE HISTORIC BORDEAUX TRADING POST

by

George W. Gill, John W. Fisher, Jr., and George M. Zeimens

ABSTRACT

During archaeological excavations within the perimeter of a small Plains Indian burial ground, near the historic Bordeaux Trading Post, eastern Wyoming, the grave of a White frontiersman was found. The largestatured skeleton shows evidence of multiple gunshot wounds and other pathological conditions, as well as some well-preserved clothing and additional items which provide valuable cultural information. The skeleton contributes to a small but growing body of data regarding aspects of health and lifestyle of White pioneers in the Great Plains.

INTRODUCTION

On September 27, 1980, a field archaeology crew of seven, directed by the authors, excavated an historic frontier burial on the edge of a bluff above the site of the old Bordeaux Trading Post. The grave, which is part of the larger Korell-Bordeaux site (48GO054), is located on Korell family property 3 miles (4.8 km) west of the town of Lingle, in southeastern Wyoming. Explorations at the site were undertaken in response to an earlier proton magnetometer survey made by Thomas Larson, previously the Assistant Wyoming State Archaeologist. His survey followed the earlier discovery and disinterment of 13 graves from the Korell land, which were discoverd during earth-moving operations, and seem to represent one or more small Plains Indian cemeteries. It is assumed that these burials, well endowed with Euro-American and Plains Indian artifacts, are probably associated with the Jrdeaux Trading Post 1.2 km to the northeast and/or the Oregon Trail which passed below the bluff and next to the trading post. Other historic sites in the immediate vicinity which may relate to the grave site are: (1) Fort Laramie, 12.9 km northwest; (2) Grattan Massacre; (3) Pony Express; (4) Emigrant Trail (Oregon Trail); (5) Mormon Trail; and (6) Rock Ranch.

The other burials from the Korell-Bordeaux site are presently under study and will be described later. The somewhat unique interment reported here (Burial #15) appears to contain the only skeleton of a White in the collection. Preliminary analysis of the other 14 skeletons from the Korell-Bordeaux site suggests that all are probably American Indian, although five are infants or children and are difficult to evaluate with regard to racial affinities.

We are reporting this burial separately, in part because the skeleton is racially distinct from the other osteological specimens at the site, and very few of the important skeletal remains of contact-period frontier Whites are properly reported. Euro-American soldiers, explorers, hunters, trappers, traders, naturalists, and others figured prominently in the history of the West, and yet they represent a poorly known group with regard to osteological studies. Health conditions and aspects of lifestyle can be monitored with skeletal analyses, and preliminary observations of the human samples in the University of Wyoming collections indicate that historic Whites in the Northwestern Plains suffered



Fig. 1. Area of the Bordeaux Trading Post, historic trails, related sites, and the Burial 15 grave location.

more traumatic injury than prehistoric and historic Indians. These observations may have meaningful implications, and we are thus offering this descriptive report as an initial step towards a better understanding of the paleopathology, osteology, and lifeways of early Whites in the Northwestern Plains.

THE BURIAL

The grave site is located 1.6 km south of the North Platte River, which flows through the area from the northwest to the southeast, through a wide valley. The low bluff upon which the interment was located is a part of London Flats which stand 12.2 m above the floodplain of the North Platte River. The site elevation is 1280 m. The Bordeaux Trading Post stood on the floodplain north of the bluff and along the river between the years 1849 and 1868. The Oregon Trail passed between the grave site and the trading post. The trail was heavily used until the 1860s and remained in use by some until after 1870. Figure 1 provides an overview of the area. The site and surrounding land is presently under cultivation, and over the years county construction and land-leveling efforts by the landowners have removed an unknown quantity of soil. Therefore the depth at which the skeleton lay below the original land surface is not known.

Discoveries of the first skeletons at the site were made in May, 1980, when farming operations exposed several burials more or less simultaneously (Korell 1981). After these initial burial materials were removed to a safe location, the Office of the Wyoming State Archaeologist was notified, and a small crew was dispatched to the site. Two more graves were then excavated, and later the proton magnetometer survey was made. The proton magnetometer map identified additional possible burial locations, and subsequent test excavations during our visit to the site showed one of these to be the grave site reported here. Its location relative to other burials in the area is shown in Figure 2. The precise location of some graves was never determined due to the amount of disturbance to the



Fig. 2. Location of Burial 15 in relation to the main concentration of graves at the Korell-Bordeaux Site.

area at the time of discovery.

The skeleton was excavated by use of hand tools, and all matrix was screened through 1/4-inch mesh. An almost perfectly rectangular grave outline with sharply defined margins was the first feature to be discovered (Fig. 3). The long axis of the grave measured 240 cm and was oriented along an east-west magnetic line. At its widest, the grave measured 80 cm. The bottom of the grave was 47 cm below present ground surface. No evidence of a coffin was found. This is in contrast to the American Indian interments nearby where even the infants were buried in wooden caskets.

The individual was buried in an extended, on-the-back position with the face directed upward (Fig. 4). The right forearm had been placed across the chest and the left forearm across the abdomen. The legs were completely extended and the toes directed laterally to a slight degree, in normal anatomical position. Boots were still in place on the feet at the time of burial, and a wide-brimmed hat covered the face. The hat is black felt with a



Fig. 3. Grave outline of Burial 15.

4-inch brim and, according to Smithsonian Institution investigator James Hanson (personal communication 1982), originally had a flat or nearly flat crown. Very decomposed remains of what appeared to have once been leather pants were seen on and near the leg bones during excavation.

The soils at the site are a sandy loam which are generally high in acidity. Perishable items usually deteriorate rapidly under these conditions. Also, the site area has been under irrigation for a number of years. Considering these factors, the state of preservation of perishable materials at the Korell-Bordeaux site is surprisingly good.

Most bones of the skeleton were articulated, except for some of the lumbar vertebrae, the bones of the right forearm, the left hand, and the left foot. Most of the disarticulation appears to have resulted from post-mortem disturbance by burrowing animals, but some may have been the result of plowzone disturbance.

Two buttons lay against the cervical vertebrae and another, with a small piece of



Fig. 4. Burial 15 skeleton in situ showing boots on, and a wide-brimmed black hat over the face. The pedestaled piece next to the right knee is a displaced fragment of the right radius.

attached cloth, lay among the right ribs. Six other buttons were recovered with the skeleton. Seven of the buttons are metal, one of white shell, and the other of brown porcellin. Each button is recessed in the middle and has four holes. The white and brown buttons are small and undecorated, but the metal ones show design around the border and are large enough to have been part of a jacket or coat. A single metal nail fragment was also found in the grave.

The leather soles of the boots are well preserved, and the boot tops were also present but are less well preserved. The boots appear to have been made without regard to right or left feet which suggests manufacture before or during the Civil War period. Two rings, one of hard rubber and the other of silver (89% silver content), were found on a finger of the left hand (Fig. 5). Both are size 9 and would seem to represent a wedding band (silver) and a black ring of mourning (rubber). Two, nickel five-cent pieces of the



Fig. 5. Silver wedding band (upper left), black ring of mourning (upper right), and three shield-type nickels.

"shield-type" lay 5 cm from the tip of the sternum, as if they had been inside a left breast pocket of a shirt or jacket, or perhaps inside a leather pouch worn around the neck, as was fashionable in the mid-1800s and before. Another lay near the distal end of the right humerus. All three nickels (Fig. 5) show a surprising amount of corrosion, which according to Laramie numistmatist Norman Ruud is unlikely unless the coins were inside something of leather with tannic acid content. Since the shirt and jacket appear to have been made of cloth (some still attached to the buttons), this may favor the idea that the coins were carried around the neck in a leather purse or pouch. One of the nickels from the chest area is dated 1866 and the other two, 1867. They are Philadelphia mint coins and were all in extra fine (EF) condition at the time of burial. Wear on the coins indicates that they were in circulation approximately two years. This plus the pattern of dates represented has led us to the conclusion that the burial most likely took place in the year 1869 or 1870.

THE SKELETON

The skeleton (HR080) of the White male from the grave is nearly complete. The few small bones missing are: the 1st and 2nd metacarpals of the left hand; the 1st, 2nd, 4th, and 5th metacarpals of the right hand; nine phalanges of the two hands; the left lesser multangular; the right carpal navicular, lunate, triquetral, greater multangular, and pisiform; the first metatarsal of the left foot and three phalanges; five phalanges from the right foot;



Fig. 6. Frontal view showing point of entry of a cranial gunshot wound above the left eye (a), left lateral view of the cranium revealing lateral cracking due to impact of the projectile (b). and occipital view showing the large, circular exit wound (c).

and the left 12th rib. The few bones missing suggest little disturbance to the grave — no more than expected from subsurface rodent activity and perhaps some plow disturbance.

The preservation of the bones was quite good overall; however, the skull had cracked and broken and subsequently warped. This impaired efforts to restore the cranium, but partial restoration was accomplished (Fig. 6). The proximal ends of both fibulae are partly eroded, and the proximal end of the right radius is broken and was displaced several feet from the diaphysis (see Fig. 4). The blade of the right scapula is also broken, and four ribs showed post-mortem breakage but have since been restored.

The skeleton is that of a robust male. Sex determination was made from both metric and nonmetric assessments of the innominates, skull, femora, and humeri (Bass 1971; Krogman 1962; Stewart 1979). Also the Giles and Elliott (1962) discriminant function test was applied, and the result was 108 points into the male range (strongly male). The skull as a whole is large and relatively rugose, with prominent supraorbital ridges and large mastoid processes. Greatest robusticity, however, is exhibited in the long bones, particularly the large epiphyseal joint surfaces. Maximum diameters of the femoral heads (50 mm) and vertical diameters of the humeral heads (L = 49 mm, R = 51 mm) adequately illustrate this point.

Age at death was between 31 and 37 years as determined from the symphyseal morphology of the pubic bones, according to the procedures of McKern and Stewart (1957)

and Todd (Stewart 1979). The total symphyseal score of 14 following the McKern and Stewart technique establishes an age of 29+ years, with a probable age near 35 years. The Todd method produces a very similar estimate, and after considering differential wear on the molar teeth, stages of suture closure, and stages of vertebral lipping (Stewart 1979), the 31-37 year range was established.

Race was determined on the bases of both metric and anthroposcopic traits of the cranium (Giles and Elliot 1962; Krogman 1962; Bass 1971; Gill 1976; El-Najjar and McWilliams 1978; Stewart 1979; and Gill et al. 1982). Especially useful was the method of Gill et al. (1982) which utilizes indices of mid-facial projection and has been very accurate in separating White and American Indian crania. It produced results unambiguously Caucasoid which by itself establishes race with 85% accuracy. The Giles and Elliot (1962) discriminant function results (71.1 White/Negroid and 15.9 White/Indian) also place the cranium in the White sector, equally distant from Negroid and American Indian samples. Other Caucasoid features which support the metric findings are: a prominent, projecting nasal spine; reduced prognathism; projecting chin; leptorrhine nasal form, with narrow aperture; receding molars; high sagittal contour; bladelike (nonshoveled) incisor teeth; parabolic palate form; and a nonplatymeric form to the proximal femur. Anthroposcopic assessment of the nasal bridge form and the form of the ascending ramus of the maxilla (Gill et al. 1982) also support the Caucasoid metric evaluation. Crowding of the teeth, a feature common to Whites and rare among Plains Indians and Blacks, is evident in the anterior maxilla and to a lesser degree among the mandibular teeth.

Adult living stature was calculated by use of the Trotter formula for White males, using the maximum lengths of both the right femur and tibia (Trotter 1970). The calculation yields a stature estimate of 185.23 \pm 2.99 cm, or approximately 6 feet 1 inch.

Since the cranium was largely restored, 50 cranio-facial measurements were taken. A selected sample of 20 of the most descriptive of these and some derived indices are presented in Table 1. Also listed are a few standard measurements of the mandible and post-cranial skeleton. Measurements and indices are according to the procedures outlined in Bass (1971) and Howells (1973).

Table 1. Measurements and Indices.*

Measurements

CRANIAL:	
Cranial length	(192)
Cranial breadth	(155)
Basion-bregma height	(144)
Porion-bregma height	(130)
Auricular height	(129)
FACIAL:	
Nasion-prosthion * *	75
Nasion-alveolar pros-	
thion	80
Nasion-gnathion	131
Bizygomatic breadth	146
Nasal height	58
Nasal breadth	26
L. orbital height	36
L. orbital breadth	
(dacryon)* *	43
L. orbital breadth	
(maxillofrontale)	45
Maxillofrontal breadth	(21)
Maxillofrontal subtense	9
Zygoorbital breadth	60
Zygoorbital subtense	25
Alpha chord	28
Alpha subtense	23
MANDIBULAR:	
Symphyseal height	36
Bigonial diameter	103
Bicondylar diameter	123
Ascending ramus	
breadth	36
Ascending ramus	
height	66
Corpal length	84
Gonial angle	33°

Table 1	(continued).
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POS	T-CRA	NIAL	.:	

left	right
(513)	504
429	429
(414)	(413)
357	362
275	
300	294
163	164
96	96
25	25
19	20
77	76
	left (513) 429 (414) 357 275 300 163 96 25 19 77

CRANIO-FACIAL:		
Cranial index	(80.7)	medium-broad cranium
Mean basion height	(83.0)	medium-high vault
Mean porion height	(74.9)	high vault
Upper facial index	54.8	medium-slender upper face
Total facial index	89.7	medium-slender fæse
Nasal index	44.8	narrow nose
Orbital index	80.0	wide orbits
Cranial module	(163.7)	
Cranial capacity	(1713 cc)	

All measurements in this table are in millimeters unless otherwise designated.

** These measurements are according to Howells (1973) and were not used in the calculation of indices presented in this table.

() Indicate estimated measurements or the indices of calculations derived from estimated measurements. Estimated measurements are considered to be within +1-2 mm

A number of nonmetric discrete characteristics of the cranium have been noted and follow the procedures of Gill (1971) and El-Najjar and McWilliams (1978). Table 2 presents these nonmetric data.

PALEOPATHOLOGY

Perhaps the most striking osteological features of this skeleton are the pathological conditions. The individual had sustained multiple gunshot wounds which provide for a very probable cause of death. Point of entry for one of the projectiles was in the frontal

Table 2. Discrete Characteristics.

ranial Traits Occurr		urre	ence	
	Left		Right	
Lambdoid ossicle(s)	-		+	
Parietal foramen	0		0	
Epiteric bone	-		-	
Mastoid sutural ossicle	-		0	
Parietal notch bone	-		0	
Asterion ossicle	-		+	
Tympanic dehiscence	0		-	
Double anterior condylar canal	0		0	
Accessory lesser palatine foramen	+		+	
Supraorbital foramen	+		+	
Frontal foramen	0		0	
Suture into infraorbital foramen	+		+	
Zygomaxillary suture-curve	+		0	
Accessory infraorbital foramen	0		+	
Os japonicum	0		0	
Mylo-hyoid bridge	0		0	
Accessory mental foramen	0		0	
Mandibular torus	0		0	
Rocker mandible		0		
Epactal bone		0		
Inca bone		0		
Palatine torus		0		
Pharangeal fossa		0		
Superior sagittal sinus-left		0		
Metopic suture		+		
Bregmatic bone		ο		

(+) indicates presence of the trait, (o) indicates absence, (-) means that the particular trait cannot be assessed.

bone above the left orbit. A round, sharpedged hole, approximately 12 mm in diameter, exists 4 cm above the superior margin of the left orbit (Fig. 6). Force of impact produced a beveled fracture of the inner table of the frontal bone (Fig. 7). The point of exit for the projectile is low on the right side of the occipital. This area is marked by a large irregular hole about 4 cm in diameter, which is in turn characterized by fractured edges (Figs. 6c and 7b) and missing bone. The points of entry and exit produce an angle which shows that the weapon was held well above the head of the victim when fired. This would at first seem unusual since the victim was approximately 6 feet 1 inch in height, but may possibly be explained by a second wound found in the proximal femur. The shattered proximal femur, which also shows green bone fracturing (Fig. 8), appears to likewise represent gunshot injury caused by a large-caliber weapon. The existence of this traumatic injury to the hip in conjunction with the high angle of entry of the cranial gunshot wound at least suggests a logical sequence



Fig. 7. Endocranial view of point of entry of the frontal gunshot wound (a), and ectocranial view of occipital exit wound (b).

of events. Among the several possibilities, the hypothetical sequence of events that appears most probable is a first shot to the hip which brought the victim to the ground and then a second shot through the head, at close range, fired from a position above the victim's head.

The gunshot wounds to this skeleton have been examined by Robert A. Christiansen, ballistics expert for the Firearms and Explosive Devices Section, Wyoming State Crime Laboratory. According to his report (case No. 81260) the projectile was most likely that of a .44 or .45 caliber weapon.

The gunshot wounds are not the only signs of traumatic injury to this skeleton. At least three ribs, and perhaps five, show signs of previous fracture. The 10th, 11th, and 12th ribs on the right side of the thorax were broken and partially healed at the time of death (Fig. 9), and the 8th and 9th ribs from the same side had probably sustained small fractures as well. The 10th rib was fractured 6.5 cm from the sternal end, and the small





Fig. 8. Anterior proximal left femur showing point of entry (a), and posterior view of the same femur showing fragmentation caused by exit of the projectile (b).

sternal segment was slightly displaced ventrally. The characteristic buildup of porous callus bone had occurred at the point of fracture before death, indicating that it was partially healed at that time. The fracture of the 11th rib had been 5.5 cm from the vertebral extremity, and the sternal portion deflected medially. The 12th rib was broken 6.8 cm from the vertebral end and shows a thickened buildup of porous bone at the point of injury. A small bone tubercle also projects from the lateral surface of this bone. The 8th and 9th ribs show a thickening of the shaft



Fig. 9. Three previously fractured ribs. Note the active callus bone formation on the upper two of the fractured bones.

7 cm and 6.5 cm from the vertebral ends, respectively. No thickening of this kind exists on the left counterparts. If these were in fact broken they had completely healed by the time of death. The spinous process of the 3rd thoracic vertebra is deflected slightly to the left side.

An unusually long styloid process (54 mm) is evidenced on the right side of the cranium. The process on the left side is missing the distal extremity and therefore cannot be compared for symmetry.

The 6th thoracic through the 4th lumbar vertebrae have depressions on either the superior or inferior surfaces of the body, or both. These would appear to be Schmorl's nodes, which form when the nucleus pulposus intrudes into the vertebral body. These do not normally produce clinical symptoms.

Degenerative joint disease, manifest by slight bony lipping on the margins of the articular facets, had affected both tibiae, the right fibula, both tali, and the left calcaneus. The 9th through 12th thoracic and the 4th

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lumbar vertebrae also display slight osteophytic lipping on the margins of the body. These might all properly be considered normal developments attendant with increasing age and perhaps exacerbated by a vigorous lifestyle. However, the right calcaneus has rather extensive pitting and lipping on the superior margin of the facet for articulation with the cuboid, and the opposing edge of the cuboid has mild lipping. This probably represents a pathological development, perhaps caused by injury or infection. Pitting on two phalanges of the right foot also seems to be abnormally severe.

Two teeth were missing from the skull antemortem, the upper right M2 which was probably lost well before death, and the lower right M3 which he probably lacked congenitally. The alveolus for the missing M2 had filled in with bone, and the adjacent M3 had migrated forward to partially take over the unoccupied space. Nearly all of the teeth had a mild tartar buildup. It was especially light, however, on the left upper and lower M2 and M3. The mandibular teeth had the greatest tartar deposit on the lingual surface, as well as the labial surface of the incisors, while on the maxillary teeth tartar was thickest on the labial surface. No teeth had caries, and in general the dentition was in healthy condition.

CONCLUSIONS

The burial of a White frontiersman has been excavated from the site of what would otherwise appear to be an historic Plains Indian cemetery located near the old Bordeaux Trading Post, southeastern Wyoming. The Oregon Trail and other historic landmarks are likewise near the place of burial. The tall, robust man was probably shot with a .44 or .45 caliber weapon, and likely in 1869 or 1870. He was apparently married and had probably lost his wife prior to his own death (black ring next to wedding band). Since black mourning jewelry (sometimes of jet instead of rubber) was an English custom, especially during Victorian times, it may mean that the man was of British descent. This is at least consistent with his osteological profile which reveals a tall, robust man, but one of slender somatotype. His face and nose were slender, as were his hands and feet (long phalanges

and size 9 ring).

He was shot at least twice, once below the ioint of the left hip and once through the forehead. The trajectory of the cranial wound reveals a shot fired from above the man's head, as if he had already fallen to the ground. His remains were placed in a cemetery plot among the probably marked graves of local American Indians. The native American Indian interments were in coffins and with a rich association of Euro-American and Plains Indian artifacts. The lack of such attention to the grave of the White man may indicate that he was travelling through the area and not part of the local community. Other explanations, however, could be offered for the lower status of his interment.

The frontiersman was buried with his boots on and his large-brimmed, black hat placed over his face. He was probably wearing buckskin pants or some other type of leather pants, a shirt with small buttons, and a jacket with large metal buttons. A leather money pouch may have been slung around his neck and inside his shirt. In it were at least two and perhaps three nickels of recent mintage (the displaced one could have been in a pants pocket).

The cranial fragment, or fragments, dislodged from his occipital bone at the time of the gunshot wound to the head were not carried to the site of the grave, and neither were any of his personal belongings other than his clothes and the three nickels, possibly undetected in their hidden location.

At the time of death the individual was recovering from several broken ribs. The bones of this right ankle indicated that earlier trauma may have been suffered to that part of the body as well.

The skeleton from this pioneer grave now forms part of an expanding sample of frontier Whites from Wyoming who show unusual amounts of skeletal pathology as a result of traumatic injury. These specimens are beginning to produce an osteological profile of an interesting early element within the White population of the North American Great Plains, and one whose lifestyle will be more fully understood through continuing efforts in human osteology.

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