ABSTRACT

Annalies Corbin Kjorness, MATERIAL CULTURE OF NINETEENTH-CENTURY STEAMBOAT PASSENGERS ON THE *BERTRAND* AND *ARABIA*. (Under the direction of Dr. Lawrence E. Babits) Department of History, East Carolina University, Fall 1995.

The purpose of this research is to conduct a comparative analysis of nineteenth-century passengers emigrating west using western river systems. The analysis focuses on passengers traveling on the steamboats *Bertrand* and *Arabia*. Research utilizes documentary sources, photographs, archaeological artifacts and their interpretation to create a series of hypotheses pertaining to nineteenth-century emigrant travel. The hypotheses are evaluated using statistical analysis to identify different groups of people using steamboats on interior rivers for westward emigration. The analysis focuses primarily on gender and socio-economic differences in steamboat populations.

Passenger boxes, or luggage, found in the holds of the *Bertrand* and *Arabia* were analyzed to determine gender, group dynamics, and socio-economic differences between passengers on these vessels. The vessels represent a time period between 1856 and 1865, the prime of the second wave of American westward emigration.

ACKNOWLEDGMENTS

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Annalies Corbin Kjorness September 4, 1995

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An "empty" North American continent seemed to pull new inhabitants ever westward. Since the Jamestown settlement, Anglo-Americans moved closer to the Pacific Ocean. The West was equated with opportunity, an opportunity that was not halted in 1763 by the Appalachian Mountains nor by English legal proclamation. Expansion was not stopped almost a century later by the mid-continent's river systems, Great Plains, Rocky Mountains, or by Native American resistance (Conlin 1993:101). As stated by John O'Sullivan, America's "manifest destiny" was to occupy all of North America. The New York journalist said "it was the nation's obvious fate to expand from sea to sea for God and nature intended Americans to possess the North American continent" (*Ibid*: 325).

The apex of American westward emigration was from the 1840's through the 1870's. The post-Civil War movement of people was part of the second mass exodus experienced in American history. The first migration occurred between 1763 and 1800 with waves after 1763 and 1783. The second large

scale migration westward occurred between 1840 and 1870; again with two waves, the first between 1840-50 and the second after 1865. During these years, a quarter of a million people crossed the central United States (Schlissel 1982:10). Emigrants traveled west for varied reasons. Some moved for free land in the Oregon and California Territories; others went to make their fortunes in the gold and silver mines. When gold was discovered in California (1848), Nevada (1849), and Montana (1864) many saw an opportunity to strike it rich and to start over. Once again, repeating the familiar pattern practiced by their parents before them, American families picked up their belongings and moved west (*Ibid*:10; Conlin 1993:336, 513-514).

The vast majority traveled by wagon train along trails such as the Oregon, Sante Fe, and the California. The overland route was slow, filled with many hazards, and almost 2,000 miles long. The journey often lasted six to eight months with emigrants traveling in springless wagons or walking alongside through drenching rains, summer storms,

and sometimes even snow (Schlissel 1992:11).

Overland, however, was not the only way to travel to America's Pacific Coast. Another option was sea travel from a port on the Atlantic or Gulf coasts then overland to California.[1] This journey involved 6,000 miles of sea travel and was impractical for most emigrants due to its high expense (Mullan 1865:5). Because of the cost of sea travel and time spent crossing overland, there was a great need to identify a route where sea travel was eliminated and land travel kept to a minimum. In 1865, Captain John Mullan noted that the trans-Mississippi geography demonstrated that these goals were achievable. By ascending the Missouri River to its highest point and then crossing to the navigable waters of the Columbia River, land carriage to California was reduced to only 624 miles (*Ibid.*:5).

Steamboat operations on the Missouri were directly related to developments in the Missouri River Valley and

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[1]This journey could be made in two ways. Travelers could go by steamboat to the Isthmus of Panama where they would unload and caravan with their belongings overland to another vessel waiting on the Pacific side, or they would travel by sea around South America's Cape Horn.

the northern Rocky Mountain regions. Factors contributing to the flow of steamboats up the Missouri included the upper river fur trade, military operations, mining in the Rockies and Montana, settlement in various plains regions, the Sante Fe trade, and the Pike's Peak gold rush of 1858 (Peterson 1945:538; Winther 1964:78).

Steamboating began on the Missouri River in May 1819 when the ninety-eight ton *Independence* ascended a distance of 250 miles to Franklin and Chariton, Missouri. The vessel was carrying a cargo of flour, whiskey, sugar, and iron castings from St. Louis (Hunter 1949:47; Peterson 1945:537). During the remainder of 1819, several steamboats of the Yellowstone Expedition attempted to ascend further upriver.

The most notable early voyage was made by the *Western Engineer*, commanded by Major Steven H. Long of the Corps of Topographical Engineers. This vessel transported troops and military supplies to Fort Lisa, a trading post located a few miles above present day Omaha. This fort was the farthest north a steamboat had been on the Missouri River (Peterson 1945:537; Jackson 1985:20). Despite grand beginnings, the

1820's and 1830's proved to be a lackluster time for lower Missouri River steamboating (Map 1).[2] There were few boats and they operated on irregular schedules due to a lack of settlement and limited commerce.

The first regular service between St. Louis and Fort Leavenworth (a distance of 425 miles) began in 1829 (Hunter 1949:47; Jackson 1985:14). After 1829 the number of steamboats on the lower Missouri slowly increased. The 1830's and 1840's saw an increase in steamboat traffic on the river from St. Louis to Omaha. Five steamboats were reported in 1831, twenty-six in 1842, twenty-eight in 1857, and fifty-nine by 1858 (Chittenden 1903:217; Chappell 1905:280; Hunter 1949:47). By 1857 twenty-three boats were operating regularly between St. Louis and the village of Sioux City; the freight value for that season was estimated at $1,250,000.00 (Chittenden 1903:217). In 1857 there were 174 steamboat arrivals registered at Omaha, 123 of which occurred between May and August (*The Nebraskian*, December 2, 1857).

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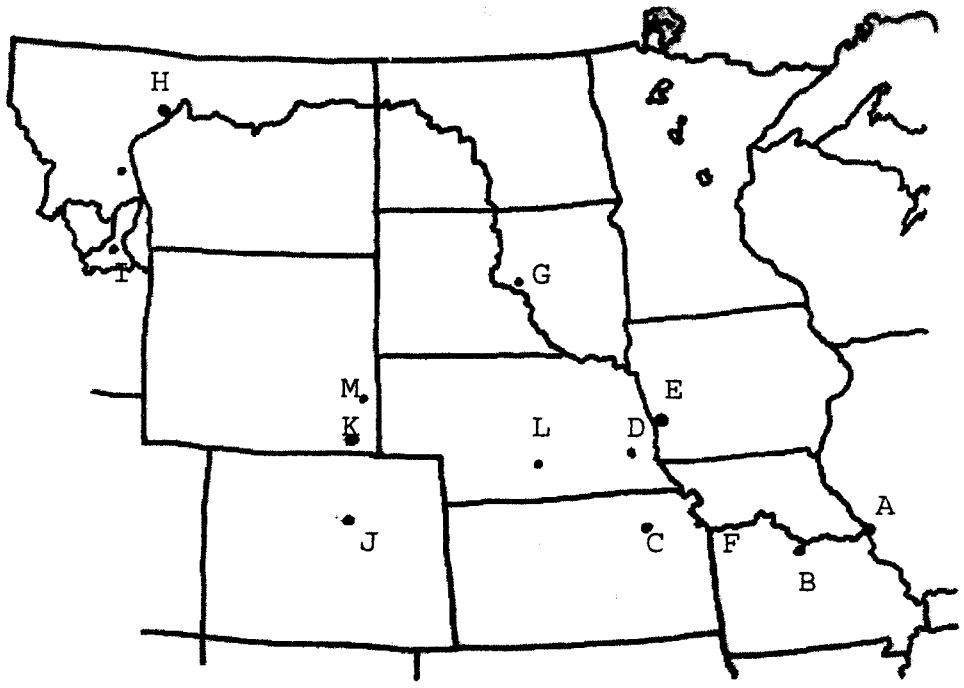
[2] The lower Missouri River was the 660 miles between St. Louis and Council Bluffs.



Map 1. Upper Missouri River region (Petsche 1974:6, modified by the author). A) St. Louis, B) Jefferson City, C) Topeka, D) Lincoln, E) DeSoto Bend, F) Quindaro Bend, G) Pierre, H) Fort Benton, I) Virginia City, J) Denver, K) Cheyenne, L) Fort Kerney, M) Fort Laramie.

While steamboat operations on the lower Missouri were progressing, operations on the upper Missouri[3] moved much more slowly. The first steamboats to travel the upper river belonged to the American Fur Company. The first boat to make the trip was the 120 foot, 144-ton, side-wheel steamer *Yellowstone*.[4] In 1831 the vessel carried supplies to the fur company post, Fort Tecumseh, opposite what is now Pierre, South Dakota. In 1832 the *Yellowstone* traveled as far as Fort Union on the mouth of the Yellowstone River (Hunter 1949:48; Peterson 1945:537; Jackson 1985:2).

The head of navigation on the Missouri River was finally reached by steamboat in 1860 (Peterson 1945:537). The stern-wheel steamer *Chippewa* ascended the Missouri to Brule Bottom, fifteen miles below Fort Benton, in 1859 (Chittenden 1903:218). The *Chippewa* finally reached the fort in 1860 accompanied by the steamer *Key West*. Fort Benton, 3,300 miles from St. Louis, became the world's

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[3]The upper Missouri River was from Council Bluffs Iowa to Fort Benton, Montana the head of steam navigation.

[4]This vessel name appears as either *Yellowstone* or *Yellow Stone* in historical records; the author will use *Yellowstone* throughout this text.

innermost port, the farthest port by water from ocean or sea served by regularly scheduled powered craft (Overholser 1987:33).

Steamboat traffic at Fort Benton soon became commonplace. In 1862, when gold was discovered in Montana, upper Missouri River traffic increased dramatically. The gold spawned a rush of miners, speculators, and suppliers to the Fort Benton area (Peterson 1945:538). From 1860 to 1867, Fort Benton experienced a boom of steamboat activity. Joseph LaBarge, a long time steamboat captain, estimated that approximately 1,000 passengers and sixty tons of freight traveled up the Missouri in 1865 (Chittenden 1903:237-239). Thirty-one boats arrived at Fort Benton in 1866 and discharged 4,686 tons of freight; thirty-nine arrived in 1867 (Peterson 1945:538; Lass 1962:21; Petsche 1974:117).

Most Missouri River steamboats were packet boats, combination passenger and freight haulers. The boats that made the long journey to Fort Benton were also known as "Mountain Boats" (Bates 1968:5). Initially, any steamboat

making the trip to Fort Benton was called a mountain boat. By the 1870's, a specific hull design was developed for the upper Missouri River (Petsche 1974:98).

Mountain boats were shallow draft craft with sturdy hulls and powerful high pressure engines. They were smaller than the Mississippi River packets and lacked the elaborate "gingerbread" work commonly seen further south (Peterson 1945:541). General Phillippe Regis de Trobriand, an 1867 passenger on the *Deer Lodge* (an early Mountain prototype) noted the appearance of Missouri River steamers:

> The general construction is simple. The hull is flat, almost without a keel, made to displace as little water as possible. When completely loaded, it does not draw more than 4 feet of water, average 3 to 3 1/2 ft. Under the first deck, the hull forms the hold where the merchandise is stacked one half to two-thirds the length of the boat, the forward deck is open. The stern is closed in a room to protect the engines and to serve as a repair shop. The furnace and boilers are on the deck, forward of the engines. They pile firewood port, starboard, and forward, leaving passage for the crew on each side of it. In front of the furnace, there is an open stairway which leads up to the Upper Deck. This deck supported the length of the boat by cast iron columns, encloses a dining room or salon in the center, from which all cabins open on port and starboard... Outside the cabins on both sides there is a gallery onto which each cabin opens by a glass door. The great paddle board wheel which propels her is as wide as the stern. The pilot house, which contains the wheel is located on the upper deck between two high smokestacks and a little astern. She was armed with a field piece and carried both a carpenter and a blacksmith (Kane 1951: 24-25).

Steamboats on the lower Missouri were based on Ohio River

designs. Ohio steamboats were built for use in shallow waters but not for the extreme conditions of the upper Missouri. The main difference between the Ohio boats used in the early years of the Fort Benton trade and the later mountain boats was in the bow structure. Ohio boats had "model bows" while the Mountain boats developed a bowl-like or "spoonbill bow"[5] (see figures 1 and 2) (Bates in Petsche 1974:91-95; Fenn in Petsche 1974:97-101).

Other differences in these vessels were in the paddle wheels. Earlier vessels used side-wheels typical of the Ohio-Mississippi River steamboats. The original *Yellowstone*, for example, was a side-wheel steamboat. Side-wheel steamers were primarily limited to the lower river trade due to obstructions in the upper river. Stern-wheel boats were designed to handle the extreme conditions in the river's upper regions. Stern-wheel boats were better able to get over sandbars, and had only one wheel that could be entangled or damaged by snags in the river. The stern-wheel

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[5]Model bowed boats had pointed bows with slightly V-shaped hulls, spoon-bill bows were rounded with flat bottoms.

Figure 1. Steamboat *Deer Lodge* displaying a spoonbill bow (Petsche 1974:89).

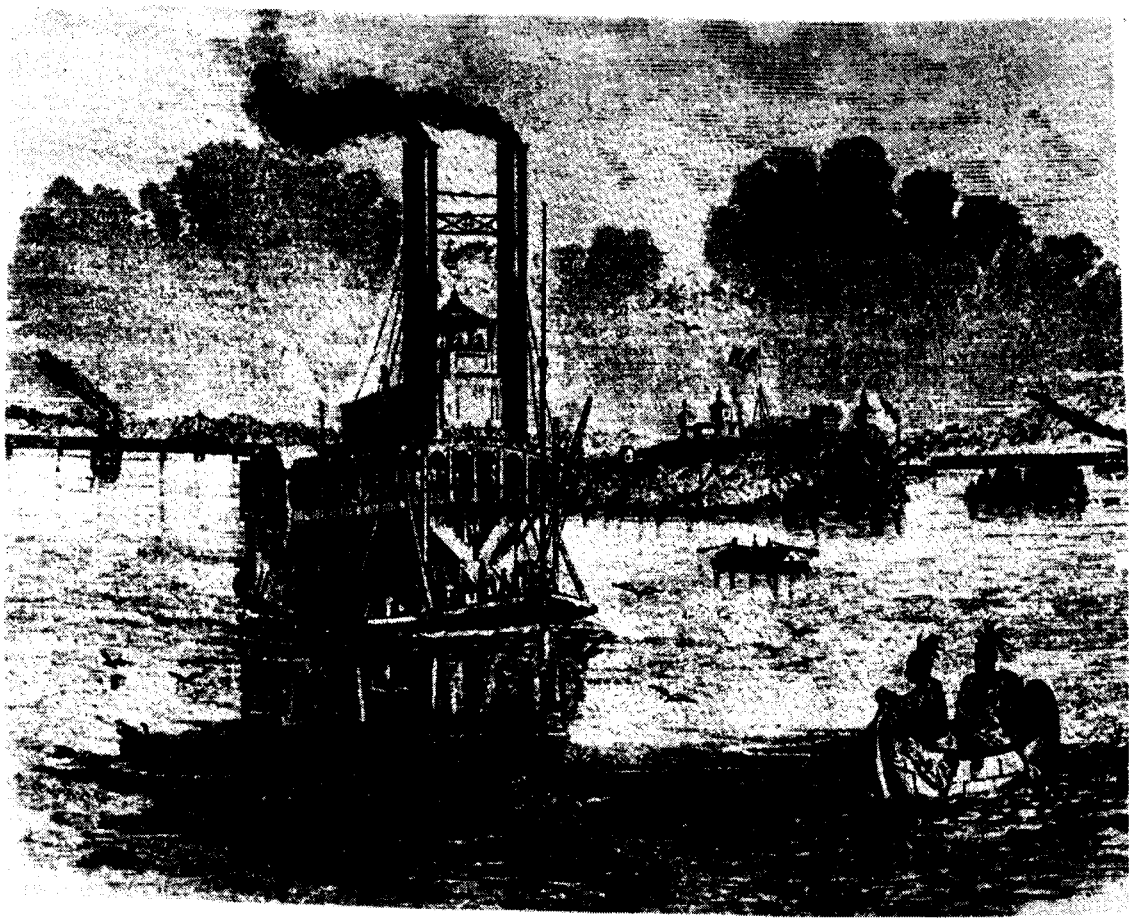

Figure 2. Model bowed steamboat (Bass 1988:194).

was also partially protected by the vessel's hull in front of the paddle wheel.

Missouri River steamers were generally much smaller than those on the Mississippi. Upper river vessels carried less than 100 to almost 500 tons, something true of both side-wheel and stern-wheel mountain steamers. Most were between 300 and 400 tons. The boats ranged between 132' and 216' in length and from 24' to 36' in beam (Winther 1964:85).[6]

Steamboats began operation each season when the ice upriver broke. This might be as early as March in some years but usually was not until late April or early May. Most steamboat activity logged at Fort Benton occurred between May and August, but there are rare accounts of vessels making runs down river as late as early December (Hunter 1949:48).

The time it took to reach Fort Benton depended on many factors: weather, the river's water level, vessel load, movement of sand bars, and the number of snags in the

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[6]For a list and partial description of vessels participating in the Fort Benton trade see Appendix A.

rivers. Generally, vessels did not travel at night due to obstacles in the river. In 1865 H. D. Upham mentioned that he left St. Louis on April 19 and was seventy-two days on the way (Upham 1865:315). Upham does not mention that the trip seemed unusually long and his story is typical of other accounts.[7]

At present, it is not possible to accurately estimate the number of people who traveled up the Missouri River. Fragmentary accounts, from newspapers, personal journals, and a few rare steamboat logs, provide clues. For example, in 1869 the *Henry M. Shreve* left St. Louis with sixty cabin passengers and twenty deck passengers (Peterson 1945:542).

Packet companies advertised several weeks before departures for Fort Benton so potential passengers could gather in steamboat towns along the route. There were two types of passage on steamboats, deck or cabin. Cabin passengers were generally considered steamboat aristocracy. Cabin passage included board, lodging, and transportation.

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[7]In 1866, Stuart Granville wrote in his journal that the same trip took him fifty-four days (Granville 1867:13-50).

The passenger received full hotel accommodations until they reached their destination regardless of delays (Hunter 1949:399). Cabin fares depended on the "grandness" of the boat, time of year, and destination. Down fares were usually less than up fares.

Costs on the mountain trade were considerably higher than on the Mississippi or the Ohio Rivers during the same time. In 1866 Cornelius Hedges took the *Lady Parkinson* down from Fort Benton and paid $100.00 in gold for his cabin passage late in the season. Hedges noted that, in addition to the $100.00 fee, all male passengers were expected to pick bull berries during wood stops along the way (Brazier 1953:32). In that same year passage up on the *Peter Balen* was reported to be $300.00 (*Missouri Republic*, June 1, 1867).

Deck passage was far more common. Not all Missouri River boats had enough passenger cabin space and many emigrants could not afford cabin fare. Most travelers traveled second class as deck passengers. Deck fare was generally one fourth the cost of cabin passage. Ohio and

Mississippi fares could be as low as $6.00 - $10.00; Missouri rates were proportional to cabin passage on the Missouri.

Unlike cabin passengers, deck passengers fended for themselves. They brought their own food and utensils and prepared their own meals. Provisions were selected for convenience in handling and preparation and the avoidance of spoilage. "As a rule bologna sausage, dried herring, water crackers, cheese and a bottle of whiskey was the usual fare" (Hunter 1949:425). Many described deck conditions as lamentable. Passengers found accommodations where they could, on or about the freight, and sometimes with livestock. Despite the inconvenience, most emigrants preferred to travel by steamer rather than overland. It was better to sleep on a bench or a sack of grain than in a wagon or stage coach (Winther 1964:88).

Although public fascination with steamboats is immense, only two archaeological examples of Missouri River steamboats have been reported to date: the *Bertrand*, excavated in 1968, and the *Arabia*, salvaged in 1989. These

two vessels provide vital insights into the use of steamboat transportation in the American westward movement.

II. The Steamboats *Arabia* and *Bertrand*

The *Arabia* was a side-wheel steamboat built in Brownsville, Pennsylvania in 1853. The vessel measured 181' in length with a 29' beam. It could carry 222 tons of freight. Adam Jacob of Brownsville, Pennsylvania, originally owned 5/8 of the vessel, along with Nicholas Shringer of Pittsburgh, 1/4, and George Reed of Sampeace who owned 1/8.[1] John Woodburn was the steamboat's first master (Record Group 41, PE 42, Port of Pittsburgh, GSA, National Archives, Washington, D.C.). The group operated the *Arabia* out of Pittsburgh on the Ohio and Mississippi until March of 1855.

In 1855 the Port of St. Louis enrollment noted that John Shaw of St. Charles, Missouri had become the boat's master and that the Pittsburgh enrollment was surrendered in a change of ownership. The new owners, however, were not listed on the enrollment (Record Group 41, PE 12, Port of

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[1]On Public Enrollment #3 of the Port of Pittsburgh on January 5, 1855, Nicholas Shringer's ownership was replaced by (D). Z. Brickle of Pittsburgh. John Woodburn still served as the vessel's master (Record Group 41, PE 3, Port of Pittsburgh, GSA, National Archives, Washington, D.C.).

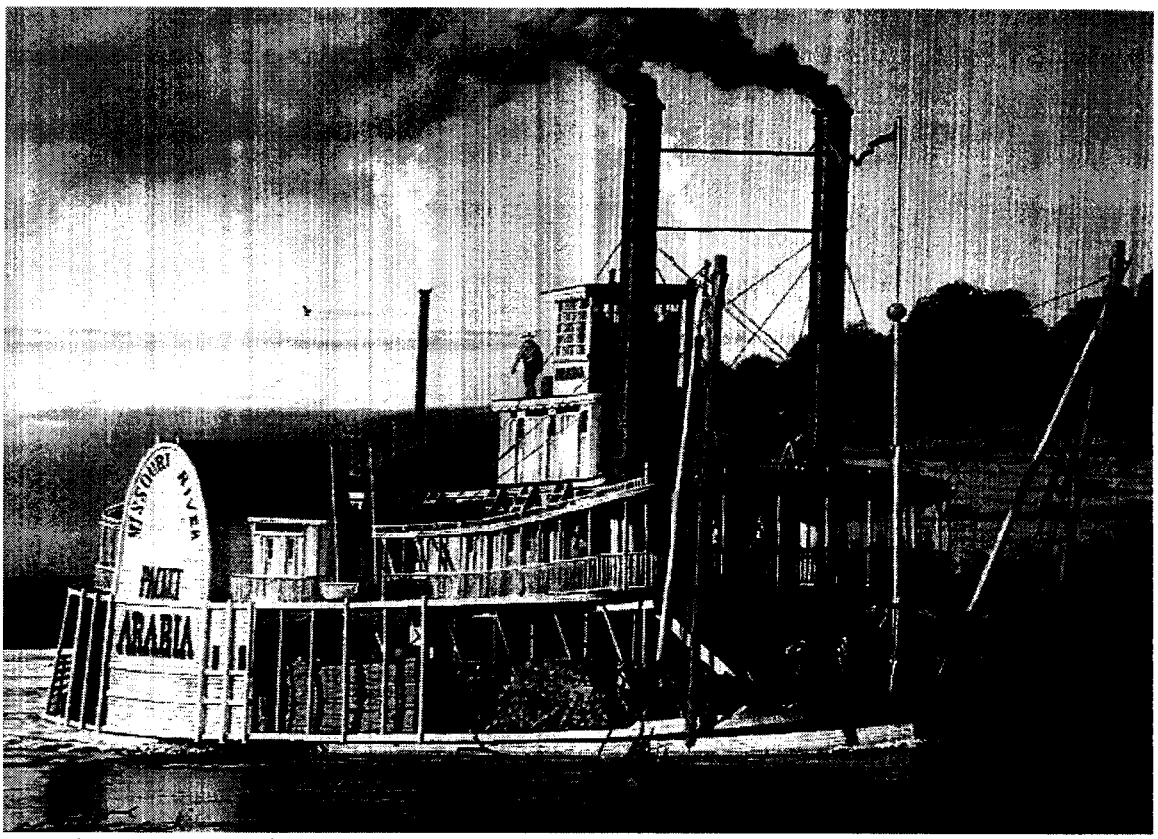

Figure 3. Artist's interpretation of the steamboat Arabia (Hawley 1995:cover).

St. Louis, GSA, National Archives, Washington, D.C.). Enrollment records for March, 1856 listed *Arabia*'s owners as J. W. Terrill of St. Louis who owned 3/8, George W. Boyd of St. Louis owned 3/8, and John S. Shaw of St. Charles, Missouri as now owning 1/4 of the vessel. J. W. Terrill became the steamboat's new master (Record Group 41, PE 17, Port of St. Louis, GSA, National Archives, Washington, D.C.).

Other than enrollment records, little historical information concerning the *Arabia* exists today. Most information about the vessel is from newspaper accounts. The Jefferson, Missouri *Inquirer* reported that the steamer *Arabia* made her first arrival from St. Louis in the week of March 8, 1856 (Jefferson *Inquirer*, March 8, 1856). That same month, the Columbia Missouri *Statesman* printed an article warning would-be passengers that the owners of *Arabia* had cheated a gentleman of his fare from Jefferson City to Providence. The paper went on to suggest that "all honest men avoid this boat the balance of the season" (Columbia Missouri *Statesman*, March 14, 1856). The next

reference to the *Arabia* came six months later when the vessel sank. The Kansas City *Enterprise* reported on September 6, 1856 that the *Arabia* sank the night before while carrying settler supplies for local mercantile stores and a few passengers[2] bound for Council Bluffs. The vessel hit a snag about a mile below Parkville and sank up to the boiler deck (Kansas City *Enterprise*, September 6, 1856).

The *Arabia*'s sinking was reported by several newspapers including the St. Louis, Missouri *Republican*, the Jefferson *Inquirer*, and the Liberty *Weekly Tribune*. The St. Joseph *Commercial Cycle* added that the *Arabia* was insured by the St. Joseph's Insurance Company. Able D. Kirk, a passenger on the side-wheeler, reported that the vessel was loaded with freight but did not have many passengers.

Kirk described how some passengers escaped in a life boat. Eventually all passengers got off with much of their baggage and were taken to Parkville by wagon (Hawley 1995:16). Shortly after the *Arabia*'s sinking, the steamer

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[2]None of the newspaper accounts ever specified the exact number of passengers on board on September 5. All of the accounts, however, implied that the number of passengers were few.

Cataract went alongside and removed cabin furniture and freight from the boiler deck and left those items in Parkville (St. Louis Missouri *Republican*, September 9, 1856). After September 6, 1856, the steamer was slowly covered by sand and eventually disappeared into a newly formed bank of the river.

There were several attempts to salvage the *Arabia* over the next century because the steamboat was rumored to be carrying three hundred barrels of whiskey along with gold and silver (Hawley nd:7). The Kansas City *Times* reported that the *Arabia* was discovered protruding out of the river bank in December of 1871. The paper said that local residents removed a few barrels of rye and a crate of dishes (Kansas City *Times*, December 29, 1871).

In 1896 the Kansas City *Star* reported that a company from Parkville was attempting to salvage the whiskey from the boat. The article mentioned a Mr. George R. Collins of Kansas City, who said that he had investigated the wreck two years before. He claimed that in 1894 the *Arabia* was "buried in thirty feet of quicksand and [was] one hundred

yards from the river bank." Mr. Collins did not believe the company from Parkville was capable of finding the wreck, much less in salvaging the *Arabia* (Kansas City *Star*, January 20, 1896). In March, 1896, the same newspaper reported the salvors had found no trace of the boat.[3]

Finally, in 1988 and 1989 a group from Independence, Missouri, River Salvage, Inc., found the remains of the *Arabia*. The vessel was located under 45' of earth in a Kansas soybean field, a half mile from the river (Hawley 1995:20)[4]. The sand overburden was removed using heavy equipment. Several parts of the side-wheeler and all of the cargo were removed. The recovered items are now being conserved and many are on display at the *Arabia* Steamboat Museum in Kansas City.

The *Arabia* represents an important segment of western

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[3] There is evidence that the boat was disturbed by earlier salvage activity at some point. Several holes cut into the deck over the cargo area were found during the 1989 salvage. Presumably, this damage occurred during a third salvage attempt that reportedly took place in 1905 (Hawley nd:12).

[4]The vessel was located using a magnetometer, newspaper accounts, and local and area maps.

America's history. It is not, however, the only example of a Missouri River steamboat to survive. The *Bertrand*, like the *Arabia*, shares the problem of limited historical records. The *Bertrand*'s hull was manufactured by Dunlevy & Co. of West Virginia (Wheeling *Daily Inteligencer*, November 26, 1864; Petsche 1974:6). The formal enrollment record listed the vessel's original owners as George Fellow and Thomas W. Aird[5], both of Wheeling, West Virginia, and George Laing, Lewis W. Cochran, and Jeremiah Cochran, of Monroe County, Ohio (Record Group 41, PE 72, GSA, National Archives, Washington, D.C.). The boat was listed at 251 tons, 161' in length, 32' 9" in beam, and had a 5' 2" mean depth of hold (figure 4)(*Ibid.*).

The stern-wheeler's maiden voyage was from Wheeling to St. Louis where it entered the mountain trade. In March 1865, St. Louis newspapers advertised *Bertrand*'s upcoming departure for the Montana Territory (*Daily Missouri Democrat*, March 10, 1865). Now part of the Montana and

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[5]Petsche listed the two Wheeling owners as George Feller, and Thomas H. Reed with the others. It is not known if the names listed in the enrollments are misspellings that were corrected by Petsche's research.

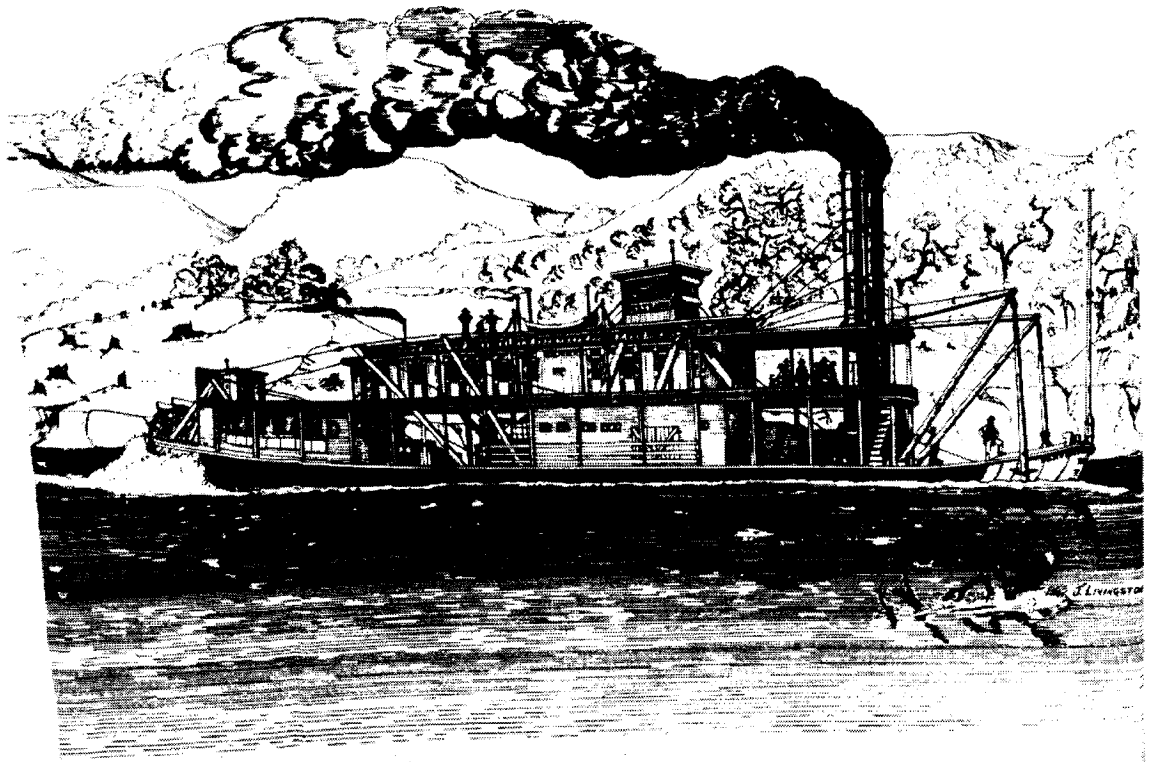


Figure 4. Artist's interpretation of the steamboat Bertrand (Petsche 1974:xvi).

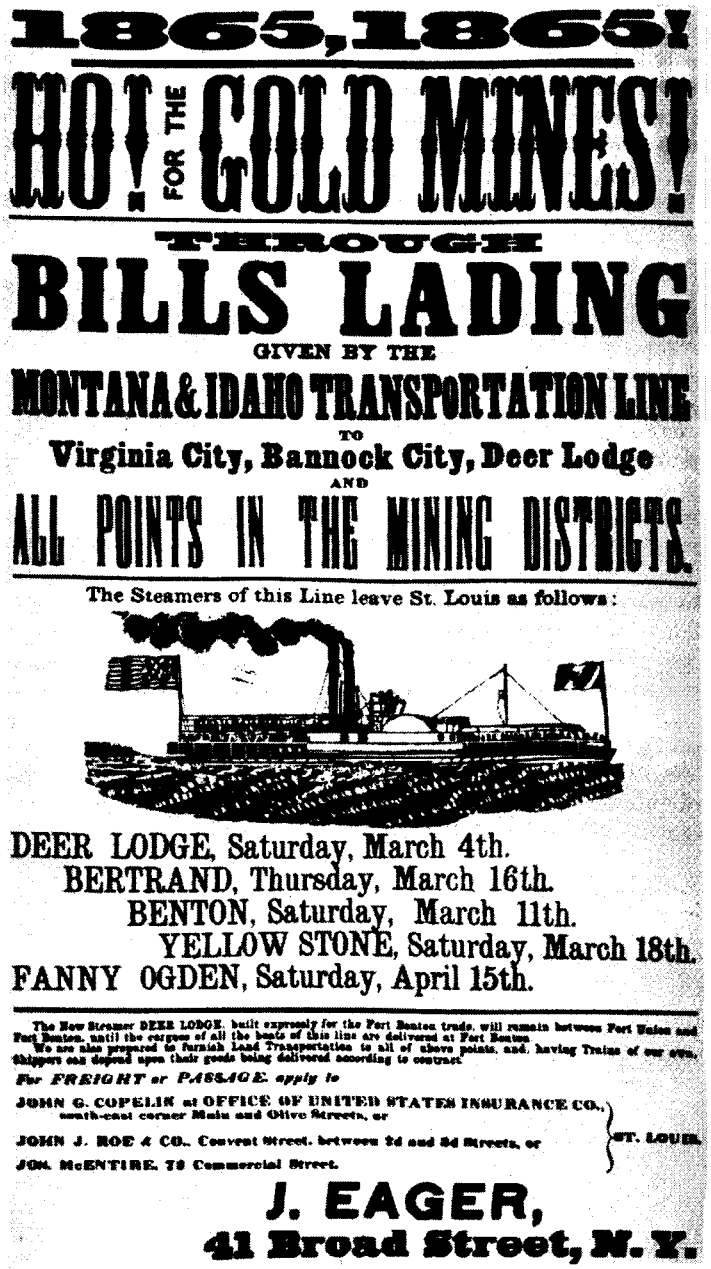
Idaho Transportation Line, the steamboat was under new ownership (*Ibid.*) The *Bertrand* was part of the company's "Mountain Fleet" which also included the *Benton*, *Yellowstone*, *Fanny Ogden*, and the *Deer Lodge* (figure 5) (Petsche 1974:7).

The *Bertrand* left St. Louis under Captain James A. Yore (*Daily Missouri Democrat*, March 17, 1865). The steamboat's fate was reported to the *Davenport Gazette* by a *Bertrand* passenger, W. Burrows:

> Our old friend W. Burrows, Esq. returned Tuesday evening from the Missouri River, where he was wrecked on the steamer Bertrand, on the first day of April, being bound for Fort Benton and having on board his daughter Mrs. Millard, and children, and several other lady passengers, some from the city. Mr. B.[urrows] says the Bertrand was snagged about twenty-five miles above Omaha and sunk in five minutes carrying down a cargo of groceries valued at $300,000, and becomes a total loss. Most of the effects of the passengers were saved, and the cargo was generally fully insured...(*Davenport Gazette*, April 13, 1865; Reprinted in: *Tri-Weekly Missouri Democrat*, April 16, 1865).

A second eyewitness was William Houston Gallaher of St. Charles, Missouri. Mr. Gallaher was a passenger on board the steamer *St. Johns* and wrote an account of the vessel's sinking in his journal after his own steamer came upon the wreck of the *Bertrand*:

> At 10 1/2 Oclock reached the wreck of "Bertrand." Badly sunk to



1865,1865!

HO! FOR THE GOLD MINES!

THROUGH

BILLS LADING

GIVEN BY THE

MONTANA & IDAHO TRANSPORTATION LINE

TO

Virginia City, Bannock City, Deer Lodge

AND

ALL POINTS IN THE MINING DISTRICTS.

The Steamers of this Line leave St. Louis as follows:

DEER LODGE, Saturday, March 4th.
BERTRAND, Thursday, March 16th.
BENTON, Saturday, March 11th.
YELLOW STONE, Saturday, March 18th.
FANNY OGDEN, Saturday, April 15th.

The New Steamer DEER LODGE, built expressly for the Fort Benton trade, will remain between Fort Union and Fort Benton, until the cargoes of all the boats of this line are delivered at Fort Benton.
We are also prepared to furnish Land Transportation to all of above points, and, having Trains of our own, shippers can depend upon their goods being delivered according to contract.

For FREIGHT or PASSAGE, apply to

JOHN G. COPELIN at OFFICE OF UNITED STATES INSURANCE CO., south-east corner Main and Olive Streets, or

JOHN J. ROE & CO., Convent Street, between 2d and 3d Streets, or

JOS. McENTIRE, 73 Commercial Street.

} ST. LOUIS.

J. EAGER,
41 Broad Street, N. Y.

Figure 5. Handbill announcing the Bertrand's departure form St. Louis (Petsche 1974:114).

> cabin floor, total loss except light freight from upper deck which was taken ashore, and built into shanties for the protection of the crew. Passengers all up at "DeSoto" eight miles above. While laying at the "Bertrand" Fannie & Annie Campbell came down to the wreck. Very much surprised to see us. They had all arrangements made for going on the "Genl Grant." "St. Johns'" left "Bertrand" at half past eleven...(Moss ed. 1963: 163).

These two accounts of the *Bertrand*'s loss are invaluable because they mention passenger names and describe what happened to some cargo.

The *Bertrand* was found on the DeSoto National Wildlife Refuge, approximately twenty-five miles north of Omaha in 1968. The wreck was discovered by two Omaha salvors, Jesse Pursell and Sam Corbino. In January 1968, they signed a contract with the Federal Government's General Services Administration, a requirement when attempting to salvage treasure on Federal land. The contract stipulated the salvors would receive 60% of any "treasure" specified as mercury, whiskey, and gold. The federal government was to receive the remaining 40%. The contract further provided that the salvors would be "guided during any excavation by the advice of the Chief, Midwest Archaeological Center, National Parks Service." The salvors were, therefore,

subject to provisions of the Act for Preservation of American Antiquities. This Law provided that "any artifact or other valuable items that may be recovered, must remain the properties of the United States Government and shall be given into the custody of the Refuge Manager." The *Bertrand* excavation, therefore, differed from the *Arabia*'s recovery in that it was subject to governmental and archaeological control. Initially the project was supervised by Wilfred D. Logan, but in 1969 supervision of the project was turned over to Jerome E. Petsche of the Midwest Archaeological Center (Petsche 1975:1-2). After excavation in 1968-9, the hull of the *Bertrand* was reburied. Artifacts recovered from the site were conserved at DeSoto National Wildlife Refuge's conservation facilities and the collection is now on public display at the refuge museum.

The *Bertrand* and *Arabia* are important elements of American history. In many ways they are unique; they are the only Missouri River steamboats viewed recently by means other than photographs. These vessels provide archaeologists, historians, and laymen with an opportunity

to study western river steamboat operations. There is great interest in hull structures, engine configurations, the history of packet companies, the cities where the vessels landed, and the people who used steamboats as vehicles for westward movement. There is considerable need for more study in these areas, and, as is evidenced by the short life of these Missouri River mountain steamboats, there are also many wrecks yet undiscovered.

III. Methodology

> "Material culture is not merely a reflection of human behavior; material culture is part of human behavior" (Ferguson 1977:8).

Material culture studies in America draw from many diverse fields. Material culture, primarily recognized as physical remains or artifacts, is heavily emphasized in the study of archaeology, anthropology, art history, cultural geography, history of technology, and folklife studies. These different fields often ask different questions of similar artifacts, but they rely on objects as a primary source of cultural information. The study of artifacts constitutes fieldwork where material culture is collected, identified, compared, and categorized (Schlereth 1982:4).

For well over a century archaeologists and philosophers struggled to find an appropriate working definition of culture. In 1871 Sir Edward Tylor asserted that culture, when taken in its widest ethnographic sense, was "that complex whole which included knowledge, belief, art, morals, laws, customs, and other capabilities and habits man

acquired as a member of society" (Tylor in Thomas 1990:104). Tylor's definition was quickly modified to stress relationships between environment and human thoughts and actions. His philosophy was expanded in the twentieth century to form the building blocks for modern cultural theory. Leslie White attributed culture to the "extrasomatic, temporal continuum of things and events dependant on symboling" (White 1959:3). Julian Steward expanded on White and argued that culture is a learned mode of behavior transmitted from one generation to the next and from one society to the next (Steward 1976:44).

James Deetz later defined culture as unique to humans and as socially transmitted rules of behavior (Deetz 1977:24-25). These rules, as defined by Deetz, govern how we think and what we do. Culture is not a function of genetics but is learned from one's elders, peers, or personal interactions within one's established community. It includes characteristics of a social group's language, belief system, mores, and laws that govern that society. Many facets of "learned" human behavior are reflected in the

often subtle, yet important ways in which we shape, alter, or manipulate our physical world to adapt to an ever changing personal environment (*Ibid.*). Human adaptability to the environment appears in the form of recognizable patterned behavior. The residue of cultural behavior, including artifacts, is also patterned and therefore recognizable.

Evidence of human existence within and use of the physical world appears as material culture. Material culture is usually synonymous with artifacts, the physical manifestations of culture (Adams 1977:32). It should be noted, however, that the term material culture refers to a very broad, but not unrestricted range of objects, which can be modified or made by patterned human activity. Ian Hodder asserts that material culture is "meaningfully constituted," the direct result of deliberate endeavors by individuals whose thoughts and actions should not be overlooked (Hodder 1984:51-68). Material culture includes tools, clothing, and sculptures; it also includes written works, how one plows a field, rides a horse, or performs a folk dance. All

represent direct products of human activity and all, when preserved as archaeological remains, constitute the archaeological record (Renfrew 1984:10).

In this study, material culture is defined as the objects attributed to passengers traveling west on board the nineteenth-century steamboats *Bertrand* and *Arabia*. The artifact assemblages or "sets," are defined as boxes containing personal belongings of a particular passenger or group of passengers.[1] The boxes served as luggage, enclosing passengers' belongings in a single container that kept their possessions separated from other passengers' belongings.

The goal of this study is to analyze the contents of the artifact sets (boxes) to gain information concerning the gender and socioeconomic background of the individual passenger. This information will then be used to test hypotheses regarding the people travelling on western rivers in the nineteenth-century.

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[1] In some cases a single box is associated with an entire family. Therefore, items in the box may belong to different members of a recognizable family unit.

Each box will be analyzed as a separate unit to facilitate comparisons in the conclusion of the study. A descriptive artifact analysis comprises Chapters 4, 5, 6, 7, and 8. Chapter 9 focuses on comparative statistical analysis of the assemblages to test them against hypothesis generated by prior research and documentation.

Artifact Classification

Within each assemblage, individual artifacts are organized in a ranked classification system based on a structured taxonomy. A structured taxonomy is a method of organization in which artifacts are defined by hierarchical ranking of formal properties based on an individual artifacts' relative importance. The method of formal classification chosen for this study is based on two interrelated models articulated by Lyle Stone and Roderick Sprague.[2]

Stone suggests classification of historic artifacts

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[2]Although Stone's basic taxonomy is used, it must be modified to be statistically manipulated. The modifications are based on Sprague's classification of 19th century western historic sites.

must first be based on observed physical properties despite any presumed cultural significance. This approach is limiting in that it does not consider function and use within a cultural context. It is useful, however, if varied to maintain strict control between separate artifact sets for statistical analysis. Second, classification is useful when evaluating significance of variation within a particular site (Stone 1974:20). When applied to a self-contained artifact set (a box), each box can be evaluated as an independent unit, and compared with other boxes (units) for similarities and differences.[3]

Sprague's classification scheme specifically defines artifacts based on a functional category and defines artifacts within that category (Sprague 1981:252). Sprague's classification system is especially adaptable for quantitative analysis because it provides a baseline for artifact distinctions such as personal, domestic, industry related, and group based activities.

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[3] If artifact associations are not clear, such as in a garbage or refuse site, the author is not suggesting the above methodology as the best choice.

Each box or "set", will be analyzed as an independent unit, first descriptively, and then statistically. The artifacts in each box will be placed in specific artifact categories based on general use as observed in this study.[4] General use categories include personal utilization, household utilization, child utilization and occupational utilization. Personal utilization includes clothing and shoes, adornment such as beads and jewelry, personal grooming devices, and billfolds or purses. Household utilization includes linens, rugs, decorative items, illumination devices, sewing supplies, books, family bibles, and medicines. Child utilization includes toys and games, books specific to children, and educational related items such as maps, slates, and school books. Occupational utilization includes tools, trade supplies, and products for sale.

Artifacts from each box will be subdivided into types within utilization categories. For example, the personal

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[4]The categories used here are not all inclusive and exclude artifact types not present in the collection. For example, there are no tobacco pipes, therefor no category including pipes is used.

utilization category is subdivided into types, differentiated as clothing and footwear, adornment, and personal hygiene. If an artifact is identified as clothing, it will be further divided by gender, male or female, and by age, child or adult. In the quantitative analysis, artifacts are further specified; clothing is distinguished as outer garments (coats, hats, gloves, capes, and shawls), woman's clothing (including dresses, blouses, and skirts), men's clothing (pants and shirts), shoes, buttons, and beads. Specific subdivisions of each category are specified in the quantitative analysis (chapter 9). A complete list of all artifacts, corresponding to each box chapter, within each assemblage is located in appendices B, C, D, E, and F.

Due to the acidity of the Missouri River, vegetable fibers including cotton and linens did not survive while animal fibers including fur, wool, and silks did. Therefore no clothing items made of vegetable fibers survived. One result of the acidic conditions in the Missouri River is that there are hundreds of loose buttons, beads, and metal fasteners such as hooks and eyes in several of the artifact

boxes. In this study these items are not considered independent artifacts, but pieces of another, larger artifact that did not survive. These items are briefly described in tabular form.

There was no attempt made to carry out an in-depth bead analysis in this study. Due to the number of in-depth works pertaining to the study of North American trade beads, a repeat of earlier analysis was not deemed necessary in this case, a procedure that has been followed in previous studies (Sprague 1984:69-70). For a complete analysis of North American glass trade beads see Karklins 1992, Kidd and Kidd 1970 and Sprague 1991.

Hypotheses:

Archaeological assumptions can be combined with historical information to form hypotheses. It is, therefore, essential that information be acquired concerning emigrant travel, homesteading, and settlements.

Hypotheses in this study were derived from three sources. By carefully examining historical records for

nineteenth-century western settlements, travel journals, and historic photographs, assumptions were made about what should be expected to be found in the passengers' boxes. For example, records showing the variety and availability of items being shipped to supply houses in the upper Missouri region suggest passengers did not take items such as heavy farming or mining equipment with them because these items were readily available for sale in the region. Likewise, photographs were invaluable for determining styles and practices regarding clothing.

There are no other western steamboat sites to consult for comparison with passenger materials on the *Bertrand* and *Arabia*. There are, however, several upper Missouri River sites frequently used by emigrants during the height of western expansion. Western historical sites were consulted to help formulate a list of potential artifacts, items present in households, shops, or toolkits during the same time. Archaeological assumptions were based on artifacts found at other historical locations or museums.

Forts Laramie and Kearny were resupply locations for

overland travel. Both forts were partially supplied via the river and supplies were also carried overland. Both forts were frequently mentioned in emigrant travel journals which noted the kind of supplies available (Schlissel 1982:24). Forts Benton and Campbell were steamboat destinations and the recipients of a majority of passengers and supplies from the 1850's through the 1870's.

The Buffalo Bill Historical Center and Museum in Cody, Wyoming has one of the largest collections of western material culture available. The museum provides researchers with a wealth of example from western settlements. These examples provide a baseline for what might be in each passenger box. It should be noted, however, that these sites represent a time frame spanning several decades, while a shipwreck represents a collection deposited at a single moment.

A third source of information comes from product catalogs dating from the mid to late nineteenth-century. As the western frontier expanded and its population grew, demand for manufactured, or store-bought, goods increased.

A direct result of opening the upper Missouri River was the availability of manufactured goods. Goods were brought to frontier communities from larger manufacturing centers in the east, Europe, and in port cities such as St. Louis, New Orleans, or Chicago. Many manufacturers of clothing, shoes, household items, and tools produced catalogs to promote sales in remote regions. Their catalogs provide a wealth of information for identifying artifacts in several of the boxes and for generating hypotheses about what might be found in the boxes.

Hypotheses are predictions to be tested against the reality of a set of variables, in this case, artifacts. These predictions determine how researchers structure their data collection and interprets their data. To help eliminate research bias, several possible hypothesis are presented. The use of multiple hypothesis allows for the refutation of some hypotheses when compared with the data. This disproving of hypotheses tends to amplify the validity, or lack thereof, of each hypothesis (Chamberlin 1965:756). The combination of information from these three research

sources allows the researcher to formulate hypotheses about what should be reflected in the passenger boxes as well as the passengers who used steamboats as a mechanism of western travel.

Hypothesis A: Single men and family groups commonly used steamboats for western travel, while single or individual women would not make the journey unaccompanied.

The overland journey was rarely made by single woman. Journals written about steamboat travel confirm this trend. Brazier specifically differentiates between single male passengers and family groups travelling the Missouri River (Brazier 1953:35). It is predicted that passenger box contents will reflect the presence of single men and family units but not single woman.

Hypothesis B: Family groups have a greater frequency of household goods, personal items, female and child items, and luxury items than single males.

A common occurrence in archaeological literature is the correlation between female-specific items such as clothing, perfume bottles, jewelry, and decorated ceramics associated with households (Blee 1991:84, Hardesty 1988:72). The turn of the century also saw an increase in child status, which

gave children a visible material culture of their own. Small clothing and toys, including dolls, blocks, and marbles, are good diagnostic indicators of the presence of children (*Ibid.*).

Hypothesis C: Single men would have a higher frequency of occupational based items associated with their boxes and fewer personal and household items.

Single, nineteenth-century, men were typically more mobile and less likely to establish roots than if part of an organized family unit (Blee 1991:86). As a result of their added mobility, single men tended to travel lighter. It was common on the overland journey for men to sign on to drive extra wagons for families or to hire out as drivers on the freight trains (Settle 1971:43-178).

Similarly, the American Fur Company often sent trappers and tradesmen back and forth from supply posts at the beginning and end of each season (Sunder 1965:19, Jackson 1985:3-4). These men traveled with the tools needed for success in their trade, and a few personal items such as clothing and cooking supplies. They rarely took nonessential items on their journey.

Hypothesis D: Children are more likely to be associated with groups that include a definite female presence rather than an association with single men.

It was uncommon for men to travel alone with small children. Men with families often travelled west leaving their wives and children at home to be sent for later. Men did not typically take their small children on this journey unless there was no one to leave the children with. It was not, however, uncommon for older boys to accompany their fathers while wives, sisters, and younger siblings stayed behind. Older male children helped drive wagons, handle stock, or assisted with their father's trade. Due to their size and age, it is often difficult to distinguish between one adult male, or two, or a father and older son.

Hypothesis E: A statistical method can be devised to demonstrate gender and socioeconomic differences across an artifact population.

Logistic regression analysis determines the amount of impact that one artifact characteristic has on another. In other words, logistic regression analysis predicts the amount of influence that one variable has on another. For example, it is possible to statistically demonstrate that

the gender associated with an artifact is directly related to whether or not the artifact is also personal and age specific. Chapter 9 will specifically address this type of issue.

Artifact Reference

Artifacts from the *Bertrand* collection are referenced in two ways. Artifacts were initially identified by an excavation lot prefix assigned to cargo items as they were removed from the boat. The alphabetic prefix (SSC- stern cargo, starboard side) refers to a general location in the holds. Boxes were generally opened only in the conservation laboratory where individual artifacts were assigned a catalog number as the box was emptied and recorded in the lab. The *Bertrand* reference numbers are therefore static regarding the collection and can be used as reference numbers in the collection files.

The *Arabia* collection was not recovered with a similar control for accuracy. There were no assigned numbers or provience records kept during the vessel's salvage (Personal

Communication, Greg Hawley, May 1994). It is often impossible to establish artifact associations. The *Arabia* Steamboat Museum has assigned catalog numbers to artifacts used in this study. It should be noted that the museum is currently reorganizing their cataloging system and artifact catalog numbers presently associated with this study may be changed by museum staff.

The particular *Arabia* box used in this study is referred to as the "Carpenter's Box" (Hawley 1995:54). Artifacts associated with this box were identified by means of a photograph taken when the box was opened in the field. Specific artifacts can be identified in the photograph. Other artifacts were associated with this box through personal recollection by participant observers of the salvage.[5]

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[5]Recollected information came from various members of the Hawley family.

IV. *Bertrand* Box 74

In the earliest stage of the *Bertrand* excavation only test samples of the cargo were taken. The goal of the salvors was profit. It was quickly discovered that little "treasure" was to be found on board. The initial samples were assigned "box" or "barrel" numbers only. At the end of the July 1969 excavations, it was decided to excavate the entire vessel for public display. More stringent provience references were assigned to each box determined by the location from which it was removed in the vessel.

Bertrand box 74 was removed from the ship between June 30 and July 4, 1969. It was located in the midships cargo section on the port side. The box measured 17 1/2" x 22" x 36"[1].

Box 74 was identified as belonging to the John S. Atchison family. Atchison family members traveling on board the *Bertrand* were Mary S. (age 24), Charles (age 5), and

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[1]The box pieces or fragments were discarded. The only references to the box were in field notes where its dimensions were recorded. There was no mention of how the box was constructed.

Emma (age 4). The *Montana Post* reported that Mrs. Atchison and her children escaped the sinking, but lost all their baggage (*Montana Post* April 22, 1865).[2]

Existing catalog records suggest there was a single box containing all of the Atchison's belongings in the hold. However, letters written by Jerome Petsche on file at Desoto National Wildlife Refuge clearly indicate there were two boxes containing Atchison family items. Petsche mentioned that the two box exteriors were marked, "TO J. S. ATCHISON, V. CITY" and "TO J. S. ATCHISON, VIRGINIA CITY, M.T." (Petsche 1974: 71; field notes on file at Desoto National Wildlife Refuge). It is unclear today whether these were two completely independent boxes or if one were stored inside the other.

Box 74 Artifacts:

Personal Utilization

Clothing and Footwear:

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[2]John S. Atchison preceded his family to Montana, where he eventually became involved with several banks and later became the owner of ATCHISON'S TRADING POST, a company that provided supplies for the mines (*Fort Benton Press* February 1, 1882).

Fur Stole (Cat. #3160) One item in this box was a soft fur shoulder stole with a rounded oblong shape. It was black/brown in color and probably mink[3]. Silk cloth lined both ends of the stole where it would pass over the wearer's shoulders. No lining was evident on the central sections of the stole. Several types of loose buttons and beads were found lying on the fur stole. They will be examined separately because a direct association with the wrap could not be made.[4]

Black Silk Cape (Cat. #66) A roughly circular hand sewn cape made of five sections of finely-woven black silk was also in this box (figure 6). The cape measured 153" in circumference along the bottom and had a 50 3/4" neck opening, which did not appear to have been finished. The cape's main body was in two pieces, labeled sections four

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[3]There were no lab tests performed to determine the exact type of fur, and none are planned for the future. The Refuge conservator labeled the wrap as either rabbit or mink.

[4]Due to differential preservation vegetable matter such as cottons and linens rarely survived in the acidic environment of the Missouri River. If any of the buttons or beads were sewn with these materials they are no longer attached to the garment.

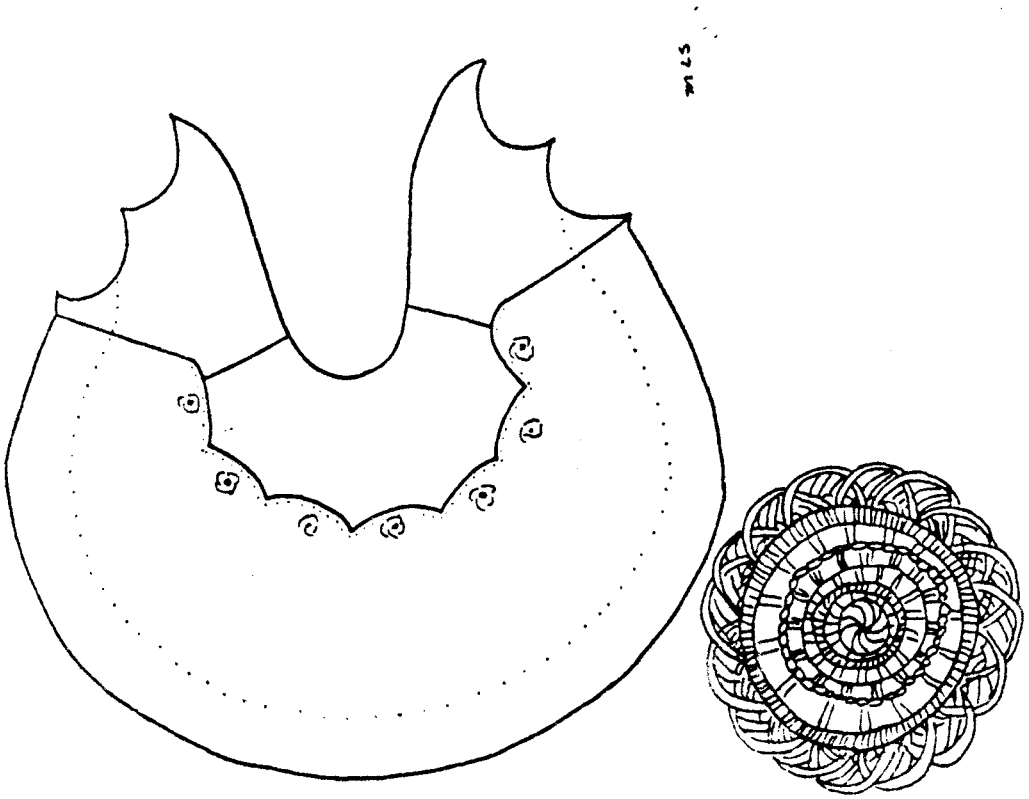

Figure 6. Black silk cape (illustration courtesy of DeSoto National Wildlife Refuge).

and five, sewn together with a seam down the back. These sections were essentially semicircular with seven, convex scallops (ranging in width from 5 1/2" to 6 3/4") cut from the top of each semicircular section. The scallop edges were turned under and top stitched onto section three, the neck yoke. Section three was semicircular with two flat ends. The piece was wide enough to drape off the shoulders. The flat ends were sewn to sections one and two. A row of stitch marks were located 4 3/4" to 4 5/8" from the hem. This may indicate that a binding was once sewn to the cape edge. Either it was removed before the cape was packed, or it did not survive.

The cape was decorated with seven crocheted, circular medallions located within the curve of each scallop in sections four and five. The medallions were made of thin wire frames 2 1/4" in diameter. Each had a 3/8" center with radiating wire arms, covered with black crocheting in five different crochet patterns. This cape appears to have been hand made and altered in style several times, as indicated by several different rows of stitching and by the cape's

unfinished state.

Child's Frock Coat (Cat. #3298) This item was a child's, black, wool, frock coat probably worn by a boy[5]. The coat was 35 1/3" in length (without collar) and had a 14 1/2" shoulder seam. The garment was made up of twenty-five finished pieces (figure 7). The coat was heavy, well made and machine sewn. It had a square-cornered collar made to fold down. A heavy braided hanging tab was on the inside of the collar.

The coat front was double breasted with pointed lapels. There were three button holes on the lapel and two rows of buttons on the breast (three buttons each). Impressions left by buttons that are no longer attached indicate that the buttons were 5/8" in diameter. There was a breast pocket on the coat's inner left side.

The coat hem was unfinished. Black silk lined the bodice and skirt but not the sleeves. The lining was machine patterned and may have been lined with an

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[5]This style of coat appeared on boys in many trade catalogs and pattern books during the time period (McClellan 1910:311-326).

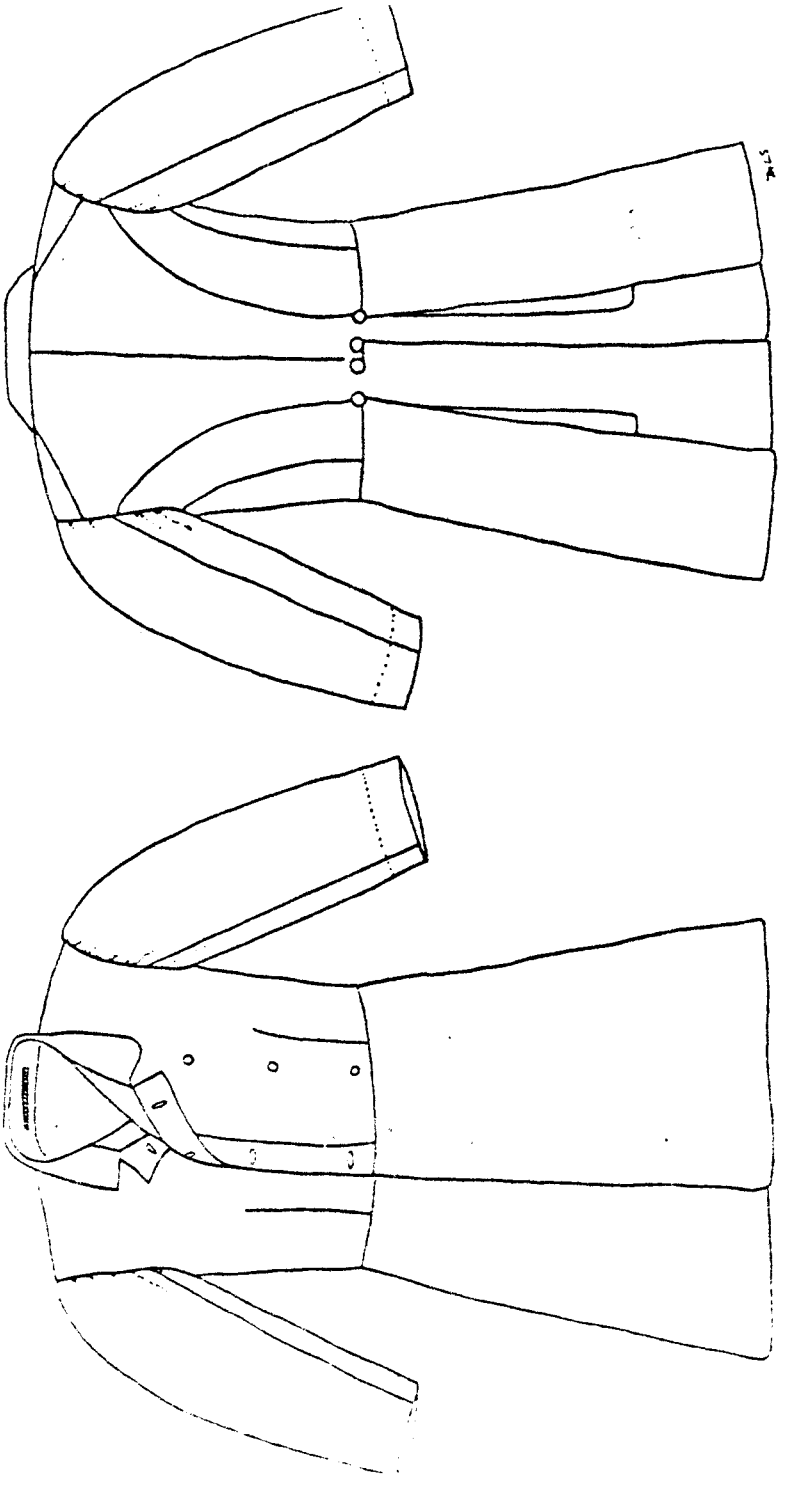

Figure 7. Boy's frock coat (illustration courtesy of DeSoto National Wildlife Refuge).

interfacing of brown wool. This jacket showed few signs of wear; it was probably new when packed for the move to Montana. The measurements are typical of those of a modern child's size 5-6. The coat was probably a little large for the Atchison boy but would allow for growth or layering of clothes under it.

Woman's Jacket or Smock (Cat. #3296) This jacket was full and long with an overall length of 39 1/2" (without collar). It was made of light weight brown wool with a black stripe composed of lines of close, small diagonal striations in the weave (figure 8). The jacket pieces were sewn together by machine with heavy black wool thread. This same thread was used to make a simple decoration along many edges. There were four basic pieces to the jacket: a front, back, sleeves and a collar. The jacket hem was turned under twice (1/8" then 5/8") and then double machine stitched. The jacket appeared to have been mended many times.

Plaid Dress Pieces (Cat. #2924) This item was a blue, red, and black plaid silk dress. The material was woven

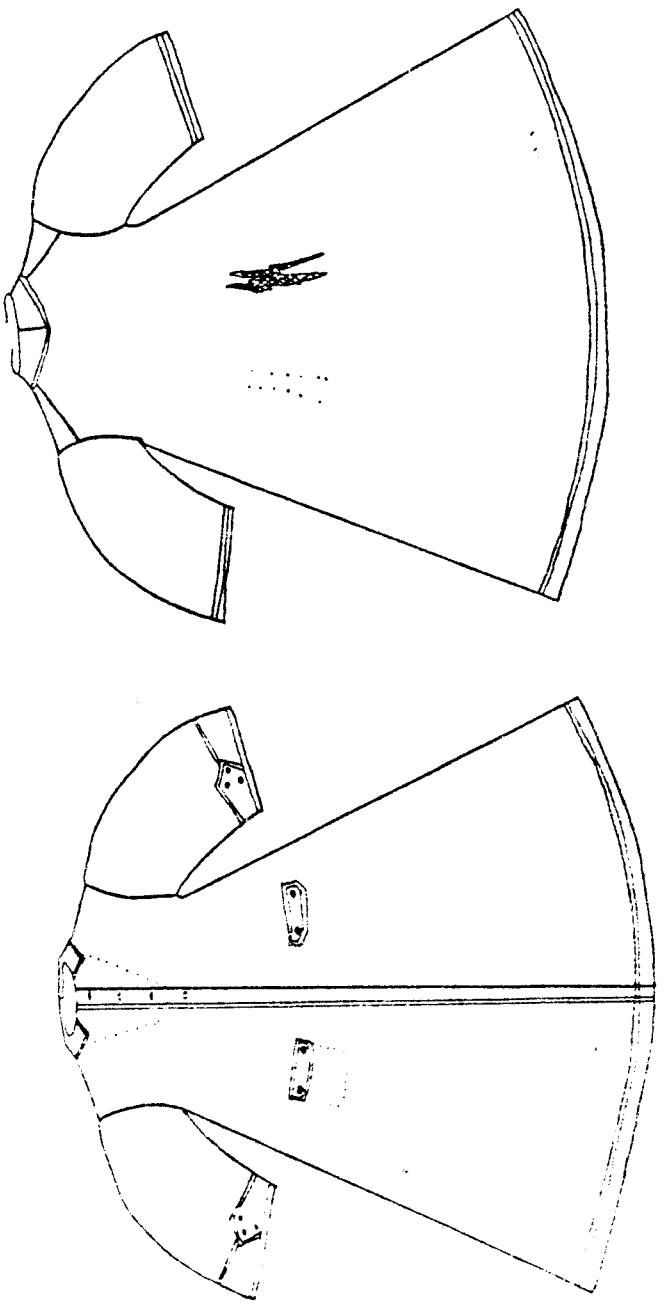

Figure 8. Woman's jacket (illustration courtesy of DeSoto National Wildlife Refuge).

with a satin weave.[6] The dress was not yet completed. Many of the pieces were only roughly cut out and not to their finished sizes as the plaids would not match. The bodice front was in two pieces. The bodice would have a scooped front neck line with three rows of darts extending up from the waist. It also had eleven button holes. The bodice back was in three pieces. The seams on the front and back were sewn with large even stitches, and edges were finished. Silk and velvet ribbon fragments (Cat. #3159) were associated with the unfinished, folded dress pieces.

Silk dresses were not common everyday wear for most individuals. The cost of a complete ready-made silk dress was approximately $100.00 in the late 1850's (McClellan 1910:253). It was also common for silk dresses during this time to be plaid. Brown and white plaids were as common as greens and pinks, and blues and whites. The dresses often had floral patterns worked into the stripes. Dresses were

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[6]A satin weave was a form of a common twill weave with the interlacing of the fibers so that the twill pattern did not show. The result was that a smooth, lustrous surface was produced. Satin weave was commonly used on silks and wools (Woman's Institute 1926:10).

commonly made with basque, and or, bell sleeves and tight fitted waists (*Ibid.*:316). These dress types were commonly displayed in popular woman's magazines such as the *Goodey's Lady's Book*. Goodey's often depicted well-to-do fashions from New York or Europe. The editor recognized that few women who read the magazine could afford such fine clothes, but many styles were commonly copied in cotton or wool (Blum 1985:I-II). Most of the silk clothes that were found in the Atchison box, therefore, are "finer" than common everyday wear made of fabric other than silk. The high preponderance of silk suggests that the Atchisons were more than just middle class.

Boy's Trousers (Cat. #67) This catalog number contained a pair of well worn, boy's wool trousers. They were dark red in color with a vertical black stripe set every 5/8". There were several tears in the garment, one of which was mended, and it showed signs of several alterations. At some point, the waist had pieces cut out on both sides[7], and later the waist band was extended. The

[7]Unlike modern pants with a fly that opened at the center front, these pants opened in the side seams. The

waist band had five evenly spaced 3/4" button holes across the front. Trousers with this style of button placement were often referred to as "railroad breeches" (Worrell 1979:41). The leg bands were fastened shut with homemade brass hooks and eyes (not of uniform size). There were also several loose pieces of bands, perhaps additional leg bands, associated with the trousers. The garment had a maximum waist measurement of 23 2/3" and a 8 3/4" inseam.

This style of pants was common for small boys. The breeches were let out in the waist as the child grew. Originally they would not have had banded bottoms, as the child grew taller and the pants became shorter, the bands were added to create knee breeches for middle-sized boys. This flexible style of pants was an economically feasible way to deal with a child's rapid growth (York 1984:34).

Knitted Wool Cap (Cat. #63) This item was a hand knit wool cap made of reddish brown and black yarn. The main

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back half of the waist band wrapped to the inside of the front half of the waistband and was secured with a button that would have been sewn on both ends. The additional buttons across the front were so the pants could be buttoned across the front to the child's shirt (York 1984:34).

body of the cap was semicircular and knitted in a striped socknet pattern[8]. There is evidence of much wear as the cap was stretched. The cap was meant to be tied on the head with two hanging tassels, only one of which survived.

Buttons:

There were 148 unattached buttons found in this box. The buttons were made of glass, brass, wood, ceramic, tin, and textile in a variety of styles, sizes, color and textures. Table 1 provides brief descriptions of each kind of button found in the Atchison box.

Table 1: Buttons

Cat. #	#	Material	Color	Diameter X Thick	Description:
803	01	wood	black	5/8" x 3/32"	Wood covered with black lacquer. Flat and circular with 4 small holes set in recess 9/32" diameter. Back is convex.

[8]A socknet pattern was made by knitting the first and every (odd) alternate row and purling the second and every alternate (even)row (Brittain 1979:18).

877	02	brass	brass	1/4" x 3/16"	Molded brass button top, convex with flat bottom. Has a brass shank 1/16" thick.
922	06	textile, cotton[9]	black	13/16" - 7/8"	Button fronts are covered with tightly woven thread, 6 threads per 1". Backs are cardboard rings covered with black lacquer.
3160	01	textile	brown	1 1/8"	Cloth covered with woven design. Back is cardboard with an iron ring. Found on fur wrap.
3160	02	ceramic (china)	white	7/16" x 1/8" - 3/16"	Plain, circular, 4 holed. Relatively flat.
3160	01	textile	black	9/16"	Has a cardboard back. Found on fur wrap.
3160	01	wood	natur al	*un-known	4 holed, circular wood. Found on wrap.
3160	02	glass	black	3/4"	Circular, shiny fronts, round backs, brass loop shank pressed into cooling glass.

[9]Lab results verified that these buttons were cotton covered. Some cotton samples survived in this collection due to differential preservation. These buttons were found lying on the fur wrap, which may have helped preserve them.

3763	13	ceramic, porcelain	white	7/16" x 1/8"	Porcelain with 4 holes set in 3/16" concavity on front. Remaining surface slants down to edge 1/32" thick. Convex back. Mold seams on some edges from 2 piece mold. Fired and glazed.
3766	01	ceramic, porcelain	*un-known	9/16" x 1/8"	Porcelain with 4 holes set in concavity 1/4" diameter. Remaining surface slats to edge 1/16". Convex back.
3767	01	ceramic, porcelain	white	7/16" x 1/8"	Same button as #3763.
5216	01	ceramic, porcelain	white	7/16" x 1/8"	Porcelain with 4 holes in 3/16" concavity. Remaining surface is flat to edge. Convex back.
5244	02	textile	black	5/8" x 1/8"	Circular felt cored, textile covered buttons. 2 pieces of felt, glued on each other, covered with black textile brocade on 2/3 of diameter.
5249	09	glass	black	5/26" x 1/4"	Circular glass gaiter buttons with brass shanks. Glass tops made in single mold, circular brass shanks pushed into glass while still hot. Smooth doming tops. Convex back with spiral ridges where shanks are placed.
5292	36	ceramic, china	white	7/16" x 1/8"	Same as #3763.

5293	01	ceramic, porcelain	white	1/2" x 1/8"	Circular 2 piece mold, seams visible on backs. Fired and glazed. 5/16" concavity at center with 4 holes. Outer most rim decorated with small triangles with apex towards center.
5294	01	ceramic, porcelain	white	1/2" x 1/8"	Circular, 4 holed. Made in two piece mold, glazed and fired. 1/4" concavity at center. Flat outer rim. Convex back.
5295	01	ceramic, porcelain	white	7/16" x 3/16"	Circular, 4 holed. 2 piece mold, glazed and fired. 1/4" concavity. Flat rim, aspirin shaped. Convex back.
5296	01	ceramic, porcelain	white	11/16" x 1/8"	Circular, 4 holed. 2 piece mold, glazed and fired. 3/8" concavity with flat outer rim. Convex back.
5297	01	ceramic, porcelain	black	3/8" x 1/8"	Circular, 4 holed. 2 piece mold, glazed and fired. 3/16" concavity. Rim slants to center. Convex back.
5298	01	ceramic	white	7/16" x 5/16"	Circular ceramic gaiter button. 2 piece mold, meeting at back. While clay is still hot a brass plate and shank is pushed into back. Glazed then fired. Convex domimg front, and convex back. Shank ends pass through 2 holed plate secured with solder.

5302	10	glass	black	3/4" x 3/8"	Irregular, opaque glass with brass shanked buttons. Before the glass hardened 1/8" bent brass wire is pressed into glass. Buttons are roughly circular with flat front faces. Backs and side are convex. Often called charm buttons.
5339	25	brass	brass	1/4" x 1/8"	2 piece molded, circular, flat gaiter buttons with 2 parallel slits cut into center. The brass between slits is forced upward forming a shank. A molded domed top is crimped over shank.
5343	02	textile	brown /blk	7/8" x 1/8"	Flat-topped, circular, disc button. Flat tin bottom toped with felt and then fabric covered. The tin bottom is covered with a convex filler (cardboard).
5344	01	textile	brown	5/8" x 3/8"	High domed sphere with flat bottom. Dome top covered with checkered textile over a donut shaped felt center held in place with a lacquered tin ring. The back is now missing.

Adornment

Beads:

There were 818 unattached or loose, beads in the Atchison Box. The beads represent a variety of sizes, shapes, and colors and are classified as adornment, in this case, because they were purely decorative in nature. The beads did not have a functional purpose. The loose beads may have been sewn on garments that did not survive. There was no way of establishing whether the beads came off three items, a single item, or ten. Nor was there any way of positively stating that identical beads were on the same garment although this is a likely assumption. See Table 2 below for a partial description of the beads.

Table 2: Beads

Cat. #	#	Material	Color	Diameter X Thickness	Description
1017	132	glass	black	3/32" x 1/16"	Circular, opaque beads with smooth round edges.
1018	23	glass	dark gray	1/16" x 1/16"	Circular, donut shaped, opaque beads with smooth round ends.

1019	75	glass	red/ brown	1/16" x 3/16-1/8" length	Tubular beads with circular cross section. Straight sides with flat ends. Iridescent patina. Appear opaque black but are transparent red/brown in the light.
1020	12	glass	black	3/32" x 1/16"	Same as #1017.
1021	10	glass	red/ brown	1/16" x 3/16-1/8" length	Same as #1019.
1022	04	glass	dark gray	1/16" x 1/16"	Same as #1018.
1023	04	glass	3 white 1 tan	1/16" x 3/32"	Flat, opaque, circular beads in plan view, sides and ends are round and smooth.
3166	100	glass	gray	1/16" x 1/16"	Same as #1018. Found lying on fur wrap.
3166	30	glass	gray	1/16" x 3/16-1/8"	Tubular beads with circular cross section. Straight sides with flat, rough, ends.
4130	325	glass	203 black & 121 gray	1/32-3/32" x 3/32"	Flat, round, seed beads. Sides are round, tops and bottoms are flat. Made by breaking off thin, hollow glass tubes. Gray beads are slightly smaller than black ones.
5351	103	glass	black to dark blue	1/16" x 1/8-1/4" length	Circular beads with smooth sides. Ends are not uniform. Manufactured like #4130, using hollow glass tubes.

Bead Work Fragment (Cat. #5349) This was a highly fragmentary piece of beadwork composed of textile, brass,

glass, and feathers. The piece consisted of feather and fabric remains interlaced with beads in an indiscernible pattern. Portions of the beadwork indicate a combination of white glass and brass seed beads strung on brown wool thread. The white beads outnumber the brass beads two to one. Between these strings of beads were small, round, wire, spring-like, beads strung on the same thread. Also found among the fabric, beads and feathers were three longer, flat braided wire, spring beads.

Accessories:

Umbrella Covering (Cat. #3294) This umbrella covering was black silk. It was composed of seven identical triangular sections measuring 9" across the base edge and 14" across each angled side. All pieces were still attached with machine stitched seams. The umbrella rib attachment points were still visible and the cloth exhibits extensive use and wear. The covering was badly rust-stained, presumably from rusted and now disintegrated iron ribs or braces.

Parasol (Cat. #4063) This catalog number had one complete, but fragmentary, parasol associated with it and several pieces of a second. The complete parasol was composed of wood, silk, brass, and steel (figure 9). The parasol handle, or "fit-up"[10], was four pieces of carved wood with a total shaft length of 41". The slender wooden shaft ended with a small, turban shaped, brass cap. One inch below the brass cap was a "U" shaped metal projection that kept the rib centering ring from moving too far up the parasol shaft. Wooden ribs and a corresponding metal stabilizer helped to extend the parasol.

The parasol silk was brown and black. It consisted of eight triangular sections, each with rounded, finished bottom edges. The pieces were sewn together to form the canopy. The parasol had a parallel striped pattern across each section. Each section had at least one tear in the

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[10]In the umbrella or parasol trade the central stick (handle today) was called a fit-up. They could be single or multiple pieces. A number of ribs, usually eight, were attached to the fit-up. The ribs supported the cover and were, in-turn supported by stretchers from the central rib centering ring or tubular runner where it runs up and down the fit-up (Farrell 1985:9).

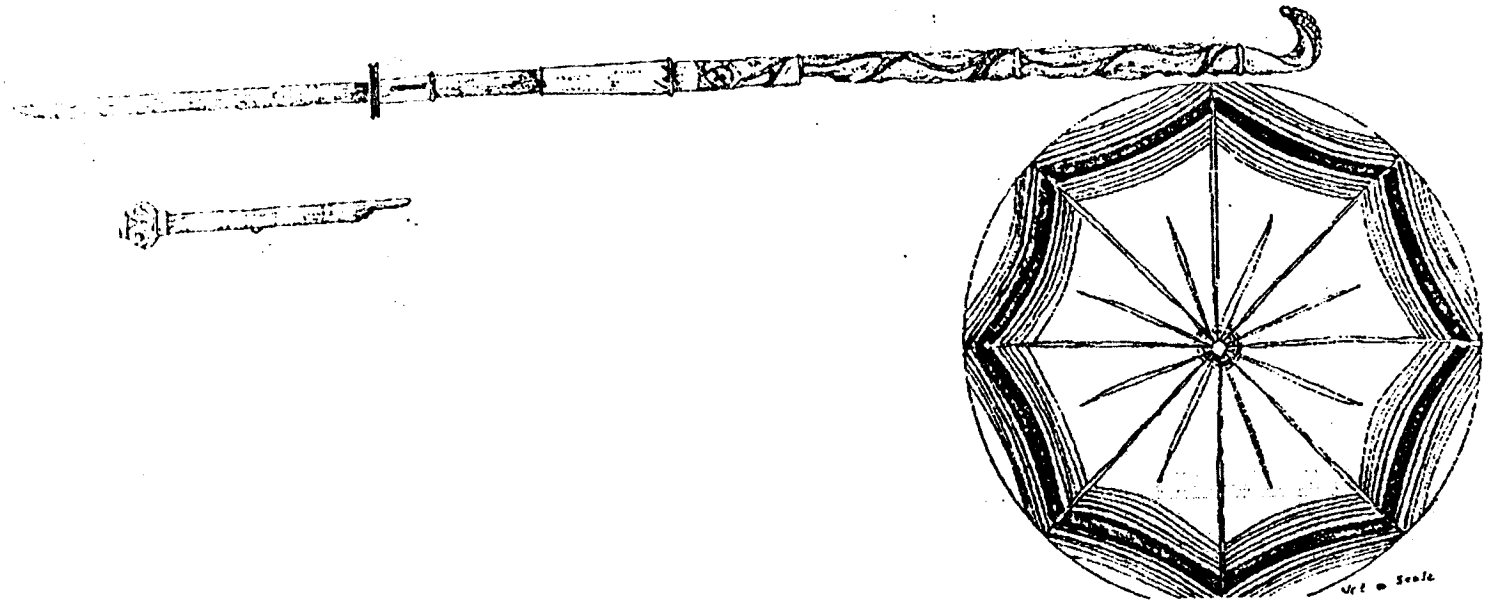

Figure 9. Parasol (illustration courtesy of DeSoto National Wildlife Refuge).

silk and some showed signs of mending.

Household Utilization

Medicinal:

Drake's Plantation Bitters (Cat. #1789) A case containing twelve bottles of Drake's Plantation Bitters was in the Atchison box. The bottles measured 9 7/8" in height; with base dimensions of 2 3/4" x 2 3/4" (figure 10 and 11). All bottles were nearly square, amber-colored, and had a distinctive log cabin shape. The bottles were corked and contained 17% alcohol[11] (Switzer 1974:36-37).

Illumination Devices:

Lamp Chimneys (Cat. #1646, 1647) There were twelve, clear glass, thick walled, lamp chimneys. They had a short flaring rim at the bottom, with a mid bulge that reached its maximum diameter near the base. They tapered at the top. On most chimneys, the top edges were thick, flat, and

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[11]Drake's Plantation Bitters were St. Croix rum, which first made its appearance during the Civil War (Carson 1961: 45).

Figure 10. Artist's reconstruction of Drake's Plantation Bitters advertisement (Petsche 1974:52).

Figure 11. Drake's Plantation Bitters bottle (Petsche 1974:51).

flared. Their height ranged from 7 1/4" to 7 7/8", with a maximum diameter at the top flare of 2 7/8". The chimneys were hand blown with few flaws or bubbles in the glass.

Rugs:

Carpet Runner (Cat. #2870) The box also contained a wool carpet runner. It measured 26' 2 1/2" in length and was 21" wide. The runner was thick and heavy with patterned lengthwise stripes using three colors, which appeared black, brown, and maroon.

Linens:

Table Cloth/Fabric Bolt (Cat. #3295) This catalog number referred to a section of black and white wool fabric. The piece measured 42" x 42" and had a pattern of parallel black stripes intersecting parallel stripes of black and white, making a checked pattern. There was no indication that the edges were ever finished. This square piece cannot be positively identified as a table cloth, but its shape makes this suggestion feasible. Another suggestion is that

the piece was from a bolt of uncut fabric taken on the journey to be used at a later time.

Sewing Supplies:

Straight Pins The box contained seventy-five brass and steel straight pins assigned to nine catalog numbers. The straight pins were considered sewing notions and were therefore household in nature. Table 3 provides a description of the straight pins.

Table 3: Straight Pins

Cat. #	#	Material	Dimensions	Description
881	02	brass	1/16" head dia. x 15/16-1 1/16" long	Pins have circular heads, convex in profile that slant slightly to a 1/32" dia. pointed shaft.
5254	60	steel	1/16" x 1 1/16"	Cast from single mold, poured from head. Slender 1/32" diameter pointed shaft emerging from inverted conical head.
5255	02	steel	1/8" x 3/4"	Description same as #5254.
5354	02	brass	1/8" x 1 5/16"	Cast from single mold poured from head. Slender 1/32" pointed shaft emerging from inverted conical domed head. Head has four striations radiating from center.

5355	02	brass	1/8" x 1 3/16"	Description the same as #5354 except top of head is smooth.
5356	03	brass	1/8" x 1 1/8"	Description same as #5355.
5360	01	brass	1/8" x 1 1/8"	Made in 2 piece mold. Pointed 1/32" dia. shaft and bottom portion of head in one mold. Domed conical head in 2nd mold. Mold marks appear around head circumference.
5361	02	brass	1/8" x 15/16"	Description same as #5255
5362	01	brass	1/32" x 13/16"	Description same as #5255

Brass Shoe Eyelets (Cat. #5340) Thirteen brass shoe eyelets were also found in the box. They were donut shaped rings with deep grooves around the outer circumference that attached them to a textile shoe quarter that did not survive due to differential preservation. The eyelets had a 5/16" outer diameter and were 1/8" thick.

Hooks and Eyes Twenty-one loose hooks and seventeen loose eyes were found in the Atchison box. Like the beads, they were probably sewn on garments at one time. They were made of both iron and brass and all were machine manufactured. See Table 4 for a description.

Table 4: Hooks and Eyes

Cat. #	# Hooks	# Eyes	Material	Dimensions Hooks/Eyes	Description
874	09	15	brass	1/2" x 3/8"/ 3/8" x 3/8"	Flat, machined brass hooks and eyes. Eyes are bent loops with the ends almost touching, then curved into small circles on either side. Hooks are same metal, folded double with each end separating to form a circle on either side of hook.
875	01	00	brass	3/8" x 9/32"	Description the same as #874 but smaller.
3764	02	00	brass	15/32" x 3/8"	Machined, round wire hooks. Metal is folded double with ends separating to form circle on either side of hook. The wire making the hook is flattened.
5358	06	01	iron	7/16" x 5/16"/ 3/8" x 5/16	Description the same as #874 but finished with black lacquer.
5359	03	01	brass	3/8" x 5/16"/ 5/16" x 5/16"	Description the same as #5358.

Child Utilization

Toys:

Alphabet Blocks (Cat. #330) There were twelve flat,

rectangular wooden alphabet blocks in the box. The sides measured 1 13/16" x 15/16", and they were 9/16" thick. The blocks were painted grey/green on one side and pale red on the opposite side. Black letters were painted on the top and bottom of each block. The letters A thru M were painted on the gray sides, with N thru Z on the red sides. All blocks had one letter on each painted side except for the letters I and J, and Y and Z which were paired on a single side. The letters were paired as follows: A on one side N on the other; B/O, C/P, D/Q, E/R, F/S, G/T, H/U, I and J with V, K /W, L/X, and M with Y and Z.

Alphabet Blocks (Cat. #72) Another set of twenty cubed wooden blocks measured 1 11/16" per side. They were painted pale red on the top and bottom and gray on the four sides. Each side had a painted border of small black squares that measured 1/16" x 1/16" and were 1/4" apart. The blocks had letters, numbers, and Roman numerals painted on their surfaces in black block letters. See Table 5 below for letter and number placement.

Table 5: Alphabet Blocks

Block	Top	1	2	3	4	Bottom
1	A	9	-	O	Z	F
2	B	S	-	X	M	H
3	C	-	M	E	X	T
4	D	A	B	C	-	E
5	E	-	1	Y	M	U
6	G	C	7	I	S	L
7	H	T	O	N	R	D
8	I	U	VI	N	-	G
9	J	F	2	H	G	I
10	K	C	-	J	O	-
11	L	P	W	B	-	Q
12	N	-	M	L	3	O
13	O	K	-	G	9	E
14	P	E	VIII	J	F	W
15	Q	T	IX	D	I	P
16	R	P	Q	S	4	T
17	S	J	III	T	-	Y
18	T	H	E	N	-	W
19	V	-	VII	R	H	L
20	Y	U	5	N	-	W

Building Blocks (Cat. #331) There were four cube-shaped blocks 7/8" on a side. The blocks were made of lightweight wood. Two sides were painted pale red, two sides were gray,

and the remaining sides were not painted.

Building Blocks (Cat. #332) Two flat rectangular blocks of light weight wood composed a second set of blocks. On each block, three of the four sides were painted a dark red/brown. One block had this color streaked across a portion of one face. The remaining sides and faces were uncolored. The blocks measured 1 7/16" x 15/16" x 1/4".

Building Blocks (Cat. #333) This catalog number contained two flat rectangular blocks of light weight wood similar to Cat. #332. The blocks were dark red/brown on one face and on three sides. The remaining side and face were uncolored. Each uncolored face had a colored streak across the face. The blocks were 1 7/16" x 1 1/4" and were 1/4" thick.

Building Blocks (Cat. #334) This number contained two red/brown rectangular blocks made of light weight wood. All surfaces were colored except for one face and one long side each. The blocks measured 1 1/2" - 1 7/16" in length, they were 9/16" wide and 1/4" thick.

Building Block (Cat. #335) This number contained one

pale red rectangular block with a sharp "V" shaped end. The block measured 1 1/2" x 1 1/8" x 9/16". The "V" was 1/4" deep and not painted. This piece may have been a chimney for a toy block house.[12]

School Building Blocks (Cat. #107) This catalog number included thirty light weight wood building blocks. The blocks were painted gray on one side and pale red on the other. They had black building patterns on both sides. The blocks made a reversible building without a roof. Twenty-four blocks were rectangular measuring 1 13/16" x 9/16" x 5/8". Of the twenty-four blocks, sixteen were building sides, while eight were building ends. There were also four rectangular corner posts measuring 3 11/16" x 13/16" x 13/16"; two were painted red, the other two gray. Two pieces were triangular gables that measured 5/8" x 5 3/8" x 3 13/16". The red gable face had "HILL"S" painted over three small windows with Gothic arches and "UNION COLLEGE" beneath the windows. The gray gable face had "HILL'S"

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[12]Catalog #'s 332, 333, 334, and possibly 335 may have comprised a single set of blocks. The color scheme supports this assumption when compared to the other sets of blocks.

painted over a window section with "VILLAGE SCHOOL" beneath the windows. There were nail holes on either side of the gable edge.

The school blocks were associated with a wooden box (Cat. # 899). The box measured 10 7/8" x 8 1/8" x 2". The bottom of the box was nailed to the sides with small machine cut nails. The top slid in routed grooves along the inside upper edge of the side pieces.

Wooden Whistle (Cat. #982) The box contained a hand carved wooden whistle measuring 7 1/4" in length. The whistle was in five pieces and had warped from a combination of extended emersion and conservation in acetone. The whistle was cylindrical and curved from end to end.

Pony Cart (Cat. #449) This catalog number was assigned to a tin trotting pony attached to a two wheeled tin cart. The pony was cut from two pieces of tin, each forming a side, fastened together along the midline to give the pony a three dimensional shape. The pony was painted dark gray with spots of red-orange paint along the back and nose. It measured 4" long x 2 3/4" high. The cart was made by

folding up the sides of a piece of sheet tin. The cart measured 2 1/2" wide across the top of the sides and 3 1/4" in length. A 1/2" wide strip was attached horizontally along the bottom to connect the wheels. Only one wheel, not attached, was present at the time of excavation. The wheel measured 1 5/8" in diameter with eight spokes. The cart was thin and heavily rusted. The back end of the cart had an irregular shape which may indicate it was once longer. The outside of the cart was painted red-orange. This toy appeared well used. There were several dents in the tin as well as several gouges or scrapes in the metal.

Conclusion:

Archaeologically this box indicates the presence of at least one adult woman and one male child. The size of the boy's clothing suggests an age of four or five. The abundance of toys in the box may indicate that another child is representative. The silk clothing in combination with well worn woolen garments may be indicative of a family unit of upper middle class.

Noticeably missing from this box are ceramics, cooking

utensils, pots, and pans; and there are few sewing notions. Ceramics of all kinds were available at supply houses as were cooking items so these heavy, often fragile items may have been left behind. It is unlikely that these items were sent ahead with Mr. Atchison. Sewing supplies and items such as hair brushes, cosmetics, and other personals were probably packed in a bag carried on board with Mrs. Atchison. The archaeological information is supported by the historical information which verifies that Mrs. Atchison was travelling with children, one of which was a boy.

V. *Bertrand* FPC-8

Bertrand box FPC-8 was excavated between August 11 and August 17, 1969 from the forward cargo spaces on the port side. The box measured 34" x 32" x 16" and contained several smaller boxes. The box was marked "J. A. CAMPBELL."[1]

Box FPC-8 is attributed to Annie and Fannie Campbell, daughters of James B. and Sarah (Kaen) Campbell. James Blackstone Campbell moved his wife and four children from Chicago to St. Louis in 1855. Three Campbell sisters, Helen, Annie, and Fannie were placed in a Catholic boarding school in the St. Charles area. In 1862, Mr. and Mrs. Campbell, their son Gurdon and daughter, Helen left St. Louis for Montana Territory. Fannie and Annie were left in the convent school; they would join the family after they completed school. In 1865 Annie, age 19, and Fannie, age 16, left for Montana on the *Bertrand* (Petsche 1982; Moss 1963:2).

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[1]The A may have been misread, it should be J. B.

FPC-8 Artifacts:

Personal Utilization

Clothing and Footwear:

Silk Cape (Cat. #2918) A black and brown, lady's circular silk cape was found in the box. The cape was in poor condition and many pieces. Upon cleaning and drying, the cape pieces were attached to laminate. Originally the cape was composed of ten vertically oriented sections. Exact dimensions are not available due to the cape's fragmentary nature (figure 12). Fabric at the back of the neck may indicate the garment had an attached hood at one time. There was evidence of a 1 3/4" brown wool edging along the bottom of the cape.

Silk Coat (Cat. #2965) The box contained a highly decorative lady's black silk overcoat. The coat measured 47" long and was composed of eleven pieces (figure 13). The coat was semi-fitted through the body with a widely flaring skirt. The coat has a simple "Peter Pan" style collar, measuring 2" wide. The back of the collar was slightly rounded with a triangular shape at the very center, which

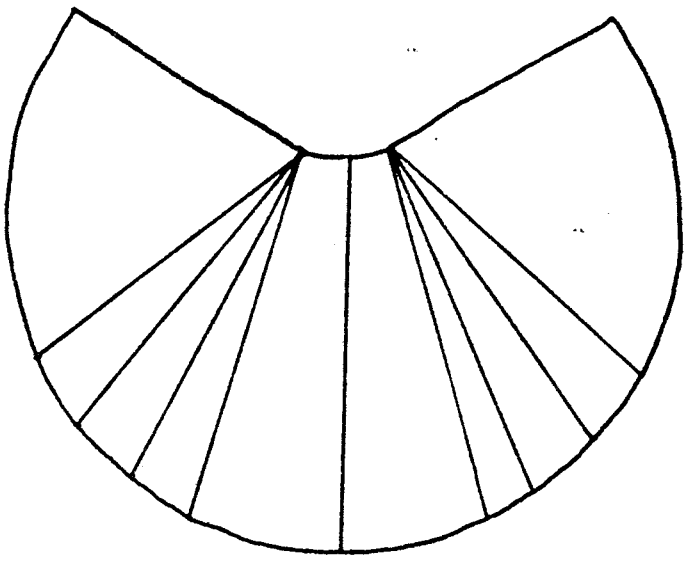

Figure 12. Black silk cape (illustration courtesy of DeSoto National Wildlife Refuge).

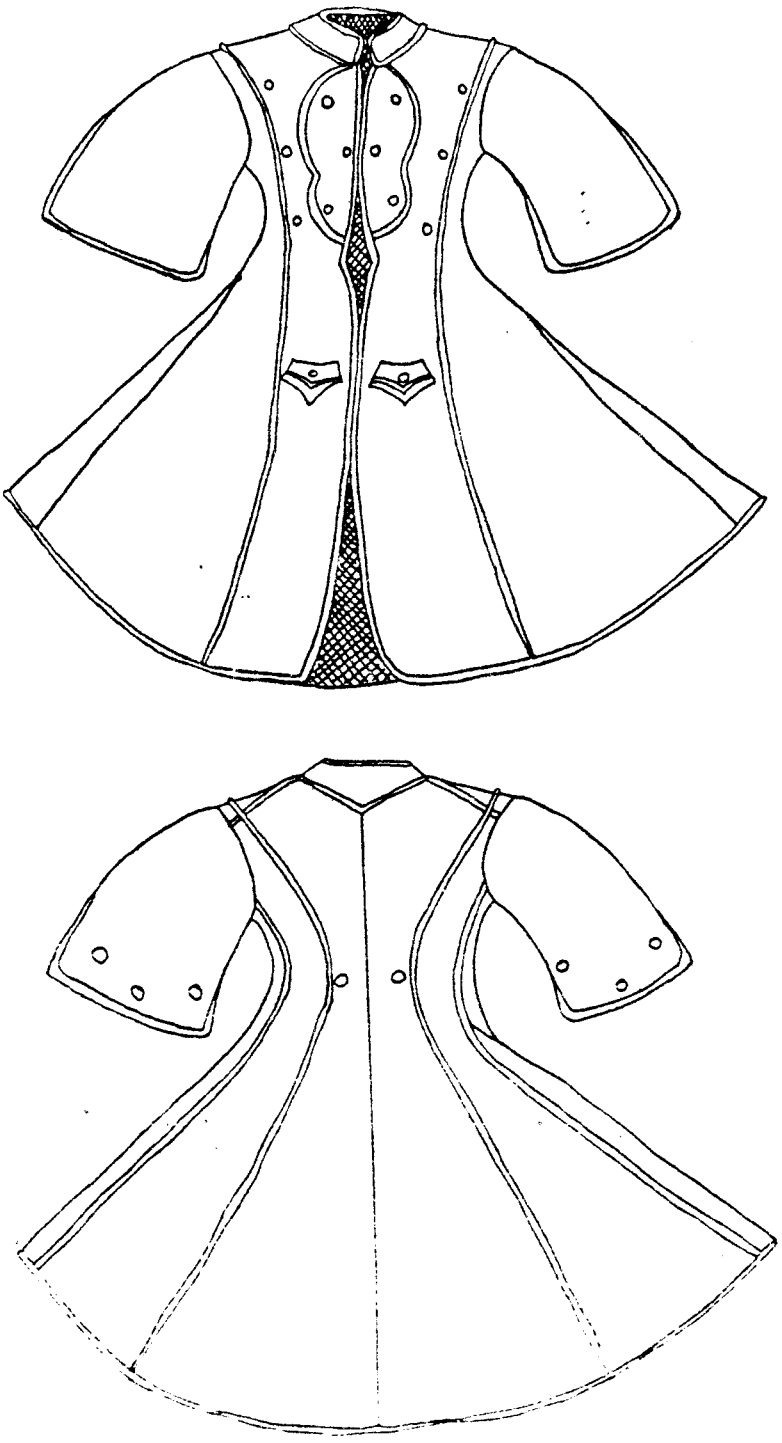

Figure 13. Silk cape (illustration courtesy of DeSoto National Wildlife Refuge).

measured 3 1/2" at the widest point. The outer edges of the collar were edged with 1/4" black piping.

The bodice was highly decorative. An up-side-down pear shaped applique was sewn on the front. One half of the applique was on either side of the bodice. The applique started at the base of the collar and had an overall length of 14". The outside edges of the applique were finished with piping. The applique was further decorated with small cloth-covered buttons (see button description). There were three additional buttons sewn along a piping seam on either side of the applique. The front had two decorative pockets attached to the skirt. Each pocket was placed 21 1/2" above the front hem and both were decorated with a plain 1" silk button stitched at the apex of the pocket flaps. This silk garment was machine sewn, and as evidenced by the elaborate decoration, was probably very expensive. It was found inside a black Chinese box (Cat. #142).

Gloves (Cat. #3698) Three small, child's size, brown wool gloves were found in the box. All three gloves were made in the same style. One left glove measured 4 7/8" in

length and the other two were a pair 6" in length from the wrist to the longest finger tip. The glove wrists were edged in elastic with a seam running from the wrist to the tip of the little finger. There were seams along the inside edge of each finger. The back of each glove was decorated with three stitched vertical lines. These were heavy, everyday-wear gloves.

Wrist Warmer Cuff (Cat. #2915) There was a single, knitted wrist warmer cuff made of brown wool. The cuff was closely knit with the top portion more loosely knit displaying a knit, pearl, knit pattern. On the inside of the cuff, three rows of cross stitches were worked over two ribs each to prevent the cuff from stretching. The cuff measured 7" in length and 3" in width at the narrowest point, 5 3/4" at the widest point.

Girl's Mitt (Cat. #2912) One black, silk, crocheted mitt was also in the box. The mitt was crocheted in a diamond shaped mesh and had four different designs across the back of the hand. There were three rows of hearts, an intertwined circular design below the hearts, a four-petal

flower design below the circles with a wider intertwined circular design below the flowers. The mitt was gathered at the wrist with elastic. It measured 3 1/8" x 3 4/8" (figure 14). During this period black net or crocheted mitts or mittens were worn with semi-formal evening dress (Cumming 1982: 65).

Dress (School Uniform) (Cat. #2846) Two identical, blue, wool, dresses were found in the box. Each dress consisted of a bodice, sleeves, and skirt each made of several pieces. Each dress had a single piece bodice with six pleats. The bodice front was in two pieces. It opened down the middle, where there were five button holes down the left front but no buttons were attached. The bodice had a single waist band that was 1 1/2" wide and would accommodate a 23" waist. The band was not attached to the skirt and appears to have been worn over the skirt rather than attached to the skirt. The skirt was composed of four sections measuring 36" from selvage to selvage and 34" from the waist to the bottom of the finished hem.

The dresses exhibited extensive wear. They had bleach

Figure 14. Girl wearing black lace mitts (photo courtesy of the Nebraska State Historical Society).

and sweat stains and were mended in several places. The dresses may have been passed down from one wearer to another. The dresses were probably altered in size each time they were given to a new owner, or were passed from girl to girl as they were outgrown. Since there were two of these dresses, and it is known that the Campbell girls were travelling from a boarding school, a likely assumption is that these were the girls' school uniforms.

Leather Shoes (Cat. #87) One pair of high laced black leather shoes were in the box. The shoes had ten pairs of brass eyelets 1/4" in diameter. The eyelet row was 1/2" wide with a thin leather strip on either side of the thicker body of the shoe.

Buttons:

There were 118 unattached buttons and twenty-one buttons still sewn to the black silk coat. The buttons were made of glass, wood, ceramic, and textile in a variety of styles, sizes, color and textures. See the Table 6 below for descriptions.

Table 6: Buttons

Cat. #	#	Material	Color	Dimensions Diam. X Thickness	Description
353	66	ceramic	white	3/8" x 1/8"	Circular, 4 holed chinas set i 3/16" concavity. Front slants to 1/32" edge. Convex back.
354	22	ceramic	turquoise	3/8-7/16" x 1/8"	Same as #353 except for color.
933	21	textile/ wood	black	1" x 3/16"	Circular with plano-convex wood centers. Each wood disc has a hole in its center. Covered with tightly woven silk and gathered at back with wool thread.
948	01	ceramic	white /red	7/16" x 5/32"	Circular, 4 holed china with 1/4" concavity. Front slants to 1/8". Convex back. 2 circular bands of red trim.
2910	19	textile	brown /blk	1" x 5/16"	Circular, flat round edge buttons. Covered with silk in a checkered pattern. 3 alternate brown and black squares, 16 are all brown. Cardboard backs covered with lacquer.
2920	06	textile	black	5/8" x 1/8"	Circular, silk covered. Pattern of diamond inside a square. There are triangle in the middle of the diamonds with a tight checked pattern. Cardboard backs.
2921	01	ceramic	white brown	7/16" x 5/32	Same as #948 except with brown trim instead of red.
3720	02	textile/ wood	black	1" x 3/16"	Same as #933. Covered with silk.

4203	01	glass	white	7/16" dia.	Spherical white glass with brown surface paint. Has metal shank.

Adornment:

Hat Pins (Cat. #725) Two gilt brass hat pins 5 3/16" long adorned with hollow ornamental balls were found among the girl's belongings. The two pins were similar except one had a round ball 1" in diameter and the other had an oval ball 1 1/8" high x 7/8" wide (figure 15).

Beads There were 131 unattached glass beads of various sizes and shapes in the Campbell box. See Table 7 for a description of the beads.

Table 7: Beads

Cat. #	#	Material	Color	Dimensions	Description
1041	01	glass	black	5/8" x 9/16"	Spherical with flat ends, covered with black paint.
1042	39	glass	black	3/32" x 1/16"	Circular, opaque, donut shaped with round edges. Same as #1017.
1043	27	glass	black	1/16" x 3/16-1/8"	Tubular beads with circular cross section. Straight sides with flat ends. Iridescent patina. Appear opaque black but are transparent red/brown in the light. Same as #1019.

2911	64	glass	black /gray	round: 3/16" 1/8" tubular: 3/16" dia.	37 are opaque, donut shaped and black in 2 dia. 3/16", 1/8". 24 are circular and tubular with ends broken off. Some are gray and some black.

Body Ritual and Grooming:

Toiletry Vials (Cat. # 710, 711, 712) There were twenty-one, clear glass toiletry vials in the Campbell box. The vials had flat bases, cylindrical bodies and slightly constricted necks with flared lips (figure 16). The vials represented three types and varied in size and capacity. See Table 8 for description.

Table 8: Toiletry Vials

Type	**#**	**Total Height**	**Base Diameter**	**Neck Diameter Inside/Outside**	**Capacity**
type 1	17	1 3/8"	3/8"	1/4" / 7/16"	0.1 oz.
subtype 1a	02	2 3/8"	5/8"	3/8" / 5/8"	0.3 oz.
subtype 1b	02	1 3/8"	5/16"	1/4" / 3/8"	0.07 oz.

These vials were still corked and their contents were

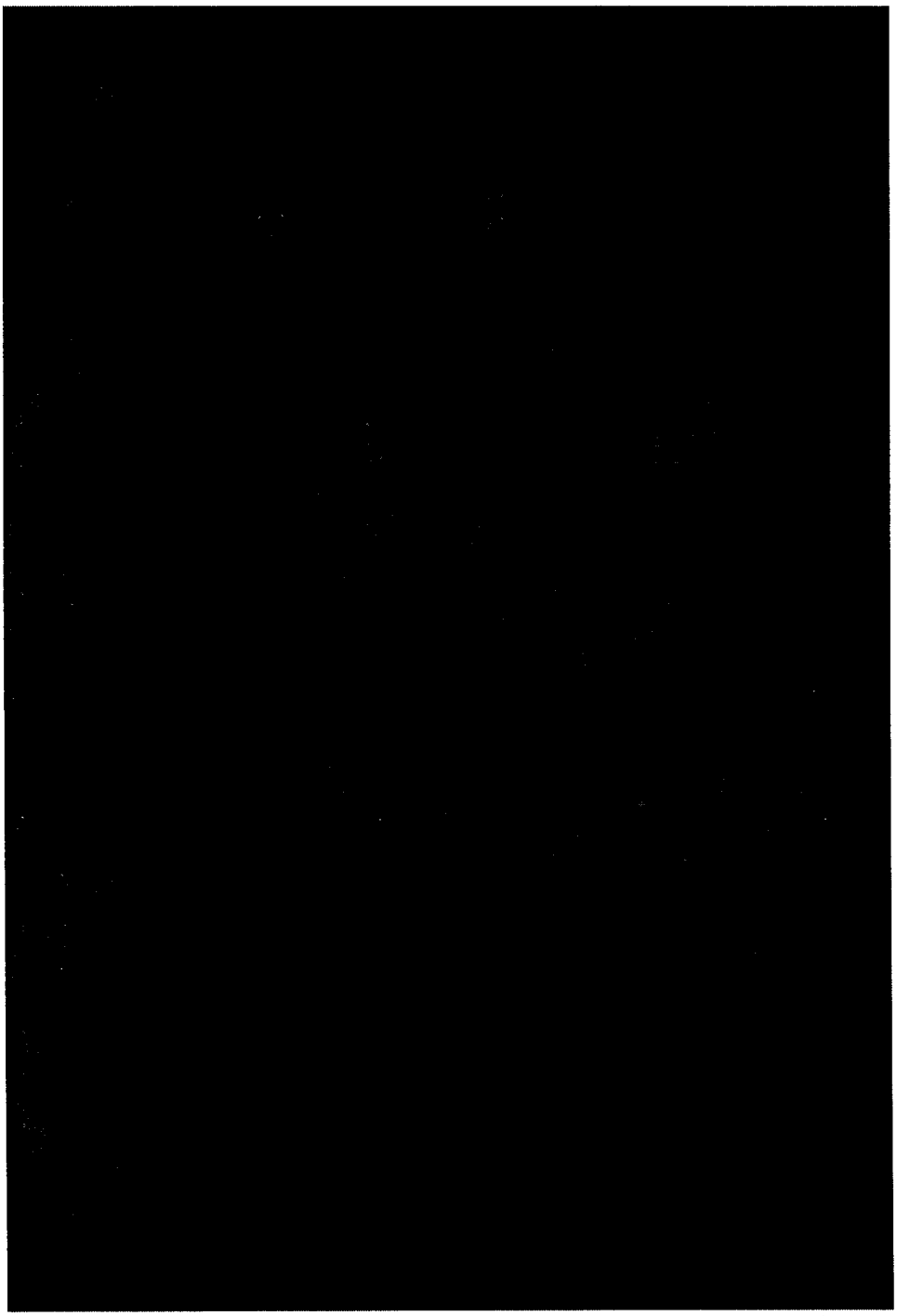

Figure 15. Brass hatpins (photo courtesy of DeSoto National Wildlife Refuge).

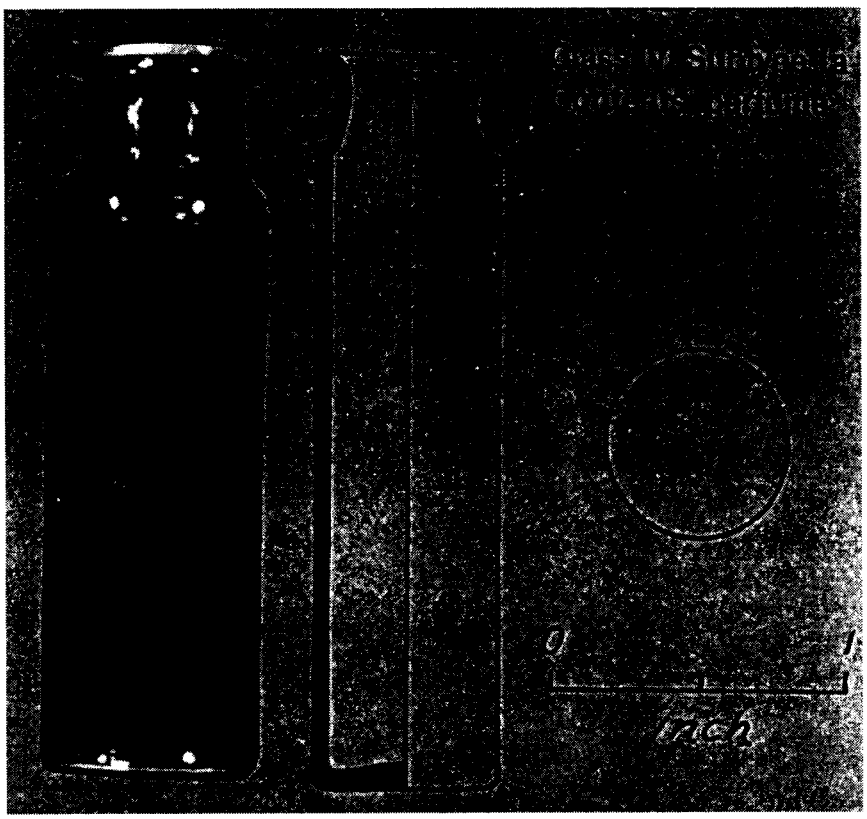

Figure 16. Glass toiletry vial (Switzer 1974:43).

identified as perfume (Switzer 1974:43). These vials were associated with a jewelry box (Cat. #148).

Household Utilization

Decorative Items:

Glass Heart (Cat. #4033) A tiny, transparent, yellow-green, glass heart measuring 3/8" x 1/2" x 5/16" was in the box. The top face of the heart was slightly smaller than the bottom face. The top face had a frosted appearance due to minute striations. Both faces had beveled edges and "YOURS / TRULY" incised backwards on a center diagonal in Roman boldface type (figure 17). The words were meant to be read through the upper face. The heart was slightly longer on one side than the other.

Containers:

Jewelry Box (Cat. #148) A small (7 3/4" x 5 1/16" x 3 5/16") rectangular jewelry box was also found in the Campbell box (figure 18). The lid was attached with two

Figure 17. Glass heart (illustration courtesy of DeSoto National Wildlife Refuge).

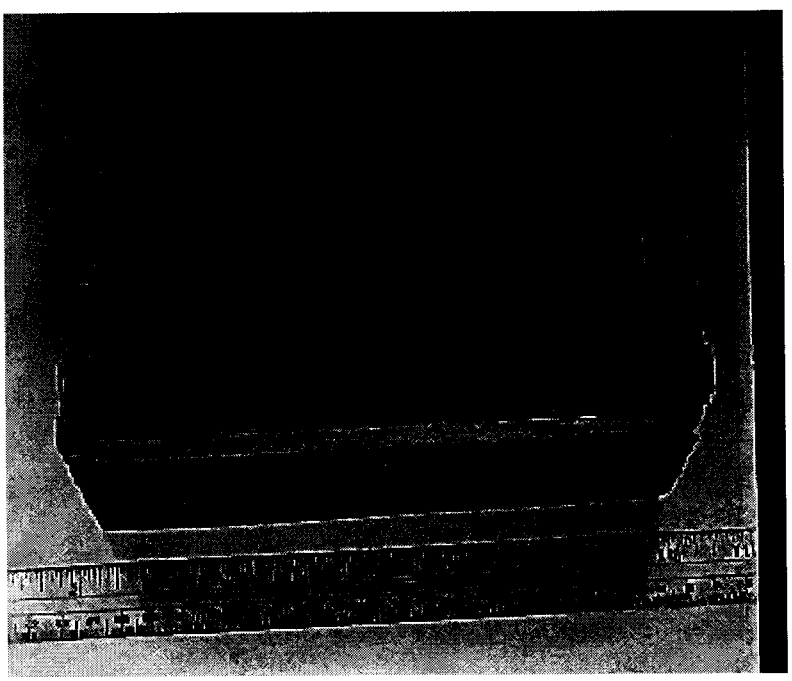

Figure 18. Jewelry box (photo courtesy of DeSoto National Wildlife Refuge).

yellow brass hinges (Cat.#745). The hinge plates measured 3/8" x 5/8" with a hinge shaft 5/32" in diameter. The lid top had a recessed, flat bottomed circle 5/8" in the center of the lid. Each corner of the lid had a similar circle 3/8" in diameter. The four corner circles were connected by a groove to form a rectangle with circles at the corners. The box lid was covered with a piece of black veneer. The circular holes and groove were not covered by the veneer. The box had a small circular lock, 5/8" diameter, on its front (Cat. #747). The lock plate was an L shaped yellow brass plate with a steel locking mechanism.

The box contained a small rectangular tray (Cat. #147) made of smoothly finished, fine grained, light brown wood. The tray had a single bottom piece 5 9/16" x 3 1/2" x 1/16", and four side pieces 5 7/16" and 3 7/16" in length. The ends of the tray sides were beveled to produce finished mitered corners. Catalog numbers 454 and 875 were thin sheets or strips of thin wood. These pieces were associated with the jewelry box and may represent another divided tray. Some pieces are fragmentary and the configuration is only

speculative.

Black Chinese Box (Cat. # 142) A black lacquered box with Chinese characters painted on both the inside and outside was in the Campbell shipping crate. The box measured 14 1/8" x 9 3/4" x 11". The lid, base, and four sides were each made of three boards. The corners were dovetailed and nailed through each tenon (except those at the very bottom). The nails (Cat. #700 and 999) were cut nails tapering to the tip.

The box had a lock (Cat. #746) on the front center with a small key-hole cut through the wood. The lock was housed behind a rectangular yellow brass plate that measured 1 1/2" long by 15/16" wide. The steel locking mechanism was semicircular in shape and situated in the middle of the brass plate. The mechanism was 1/4" long and 3/32" in diameter.

A flat lid attached with four rectangular yellow brass hinges (Cat. #744), served as the top. Each hinge had four 3/16" diameter holes on either side of the hinge that was attached with a center pin. The hinge edges were beveled.

The lid closed flush with all four top edges of the box.

Three Chinese characters were painted on the inside of the lid and on the front of the box under the lock. The characters were identified as the numerals 6, 8, 5 (Personal Communication, Julianne Fontenoy, May 1995). There were also several pieces of loose black lacquer (Cat. #906) with Chinese writing which were removed from the box due to their fragile state. They were black with a red and gilt border consisting of two parallel lines. The black silk coat (Cat. #2965) was found in this box.

Green Chinese Box (Cat. #3915) A tall, green, rectangular box with dove-tailed corners was also in the shipping crate. The boards were connected to each other by means of two 1/8" diameter wooden pegs inserted in the top and bottom of each joint. The joints were made solid by cut nails. The box sides and top were painted deep green with a square red outline 1/8" wide starting 1 5/8" from each edge. The box's outer edges were painted with a black square border 1 1/4" wide. The lid, painted like the box sides, had large Chinese characters painted on it. There were four

words or meaningful groups on the box lid. The first two were identified as KING and FATHER. The second two were not identifiable due to their fragmentary nature (Ostasien 1983, Letter on file at DeSoto National Wildlife Refuge) The box bottom was plain and unpainted. The box was approximately 16 7/8" long, 16 7/8" wide and 18 3/8" - 19 5/8" tall.

The two Chinese boxes are unique in this collection. Petsche suggested that the boxes were associated with a servant travelling with the girls, but there is no documentary evidence to support this assumption (Petsche 1974:124). There was no logical reason for the girls to have a servant while attending school.

Ritual:

Bible Cover (Cat. #146) A hand-tooled leather bible cover was found in the box. The rectangular cover was stained dark brown with mitered corners. The spine of the cover (11 3/8"x 7 3/8") was 2 1/4" wide and had "HOLY BIBLE" stamped horizontally in 1/4" gilt letters. The spine also had five rectangular panels with simple floral and scroll figures on a stippled background. The front and back of the

cover were finely tooled in a symmetrical foliage pattern on a stippled background (figure 19).

Sewing Supplies:

Leather Packet (Cat. #741) This item was a thin, brown, leather packet which may have been a billfold. The piece had small stitch holes along all edges and was in two pieces. The small piece was rectangular and measured 3 7/16" long by 2 7/8" - 2 3/4" wide. The larger piece had straight parallel sides, one square end, and one end that was triangular with the top squared off. This piece was 10 7/16" long and 3 7/16" - 3 5/16 wide. This item was lined with deteriorated fabric. The smaller piece may have been sewn onto the squared end of the rectangular piece to form a pocket. The billfold would be folded, forming a square with the triangular end serving as the front flap. The piece may have been a "housewife," or compact sewing kit.

Hooks and Eyes (Cat. #2922) There were seventeen brass hooks and nineteen brass eyes found loose in the Campbell box. Both hooks and eyes were made of flat, bent, wire.

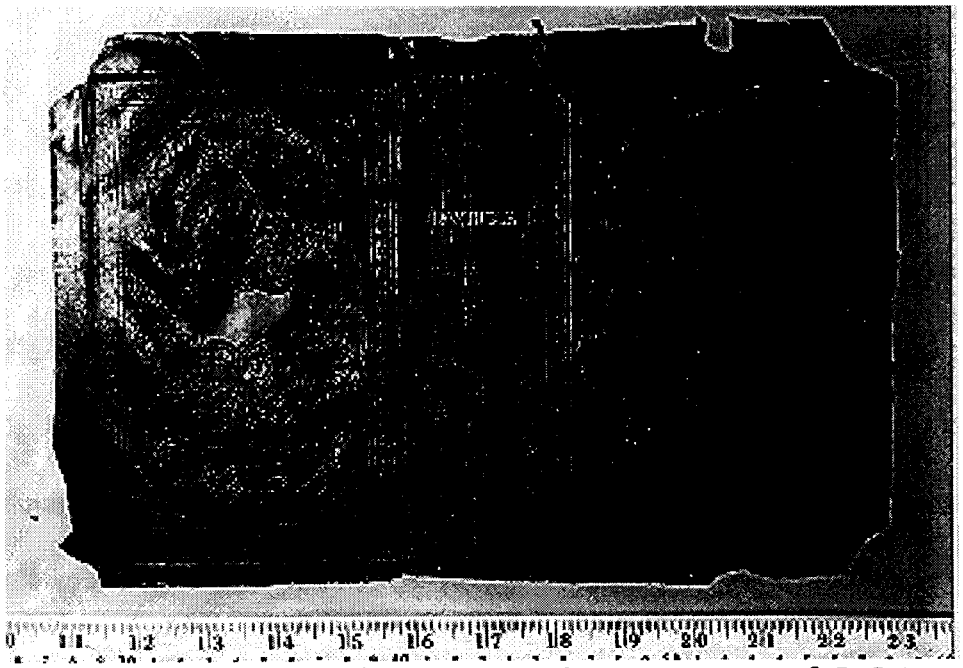

Figure 19. Leather Bible cover (photo courtesy of DeSoto National Wildlife Refuge).

The eyes are U-shaped curves with both ends curved outward forming loops. The hooks were made by doubling over the wire and then bending a portion back. Like the eyes, the ends of the hooks were bent to form loops on either side of the hook. The hooks were 5/16" - 1/2" long and the eyes were 3/16" - 1/4" wide.

Straight Pins (Cat. #'s 1206 and 2923) There were sixty-seven brass straight pins associated with this box. The pins ranged in size from 13/16" - 1 3/16" in length. They had sharp pointed shafts with a domed circular head. The lower edges of the head slant slightly toward the shaft. Mold seams at the top of the head indicate that they were made in a one piece mold.

Misc:

Reed Mat (Cat. #145) A circular reed mat measured 5 3/8" diameter. It has sixteen radiating ribs 1/16" thick which cross the center with four ribs crossing on either side at right angles by four other ribs. The ribs are woven with a simple over/under pattern with a single strand of lighter reed material. This item has not been identified.

It may be a center to a larger piece, possibly a basket bottom.

Child Utilization

Educational Supplies:

World Map (Cat. #1843) A 19" x 29" map of an unknown place was found in the box. The paper map was attached to a piece of blue-green plate glass. The paper was brown and tan with some green and red checkered patterning in places. The map had a brown leaf border along its edge. "DIA" was printed to the right of the map center. The map had many solid and dotted lines along its surface. The map was broken and may have been in several large pieces when packed in the box. It is possible that this a map of India.

Artist's Pastels (Cat. #738) Eighty-three loose sticks of artist pastels were found in the crate. The pastels were dark grey in color and square in cross section (> 1/4" wide). The lengths varied depending on wear; the unused sticks had lengths from 2 5/8" to 2 7/8". There were two

different manufacturer's represented: LEMOINE NO. 1 (also no. 3) and CONTE A PARIS N. 1 (also N.2 and N.3). The numbers referred to the degree of hardness (Johnson 1994:40).

School Slate (Cat. # 150) A rectangular school slate made of thin plate steel covered on both sides with black lacquer was in the crate. The steel plate measured 10 1/16" x 7 5/16". The slate had a simple wooden frame made of four pieces (11 5/8" x 1" and 8 13/16" x 1"). Cut lightly into the top of the frame was FANN_E[2] in letters 5/16" high (figure 20).

Several leather book bindings were found in the packing crate. None of the bindings were attached to pages. A Music Book Binding (Cat. #144) 13 1/2" long and 3 1/2" wide with a 15/16" wide spine was found. The spine was divided into six horizontal sections by raised gilt ridges. The gilt word "MUSIC" (1/4" tall) appeared on the binding.

Herbarium Book Binding (Cat. #482) This book binding

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[2]Two types of abbreviation are used in this study: a dash (_) is used to indicate an unidentifiable or missing letter in a marking. If a letter is present but questionable it is enclosed in parenthesis, (x).

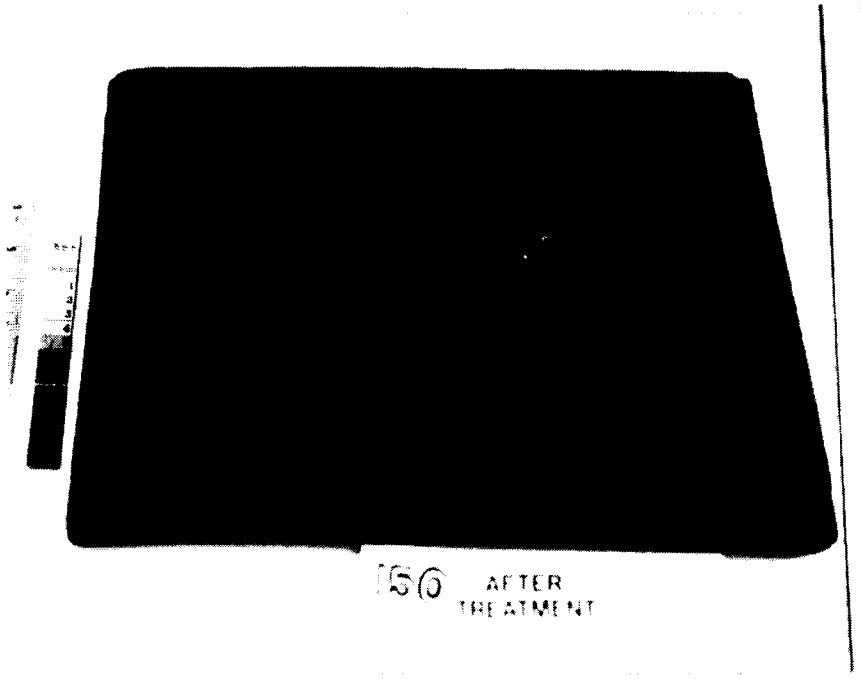

Figure 20. Fannie Campbell's school slate (photo courtesy of DeSoto National Wildlife Refuge).

measured 17 1/2" long and was 4 1/4" wide. It accommodated a book that was 15 1/2" x 1 1/8", discernable due to fold marks left by the book. The spine had eleven horizontal gilt lines across it. Printed vertically in 3/16" gilt letters was the word "HERBARIUM".

Book Back Binding (Cat. #483) This book binding had no title. It measured 7 5/16" by 2 1/8" wide . It once accommodated a book that measured 6 1/4" by 7/8" wide. The binding was decorated with four panels divided by pairs of raised lines.

Geography Book Binding (Cat. #484) This book binding was well used. It had numerous holes and tears in the leather, and it measured 7 3/8" high and 2 1/4" wide. The binding once accommodated a book measuring 6 1/4" by 1 1/4". MITCHELL'S/SCHOOL/GEOGRAPHY was printed horizontally in 3/16" gilt letters in a square panel on the binding top. The letters "H. [C]. & CO." appear in raised letters along the bottom of the binding.

Leather Book Cover (Cat. #485) This was a complete leather book cover. It was rectangular with one square end

and one end with a flap. It had long straight sides measuring 11 3/16" long and 5 7/8" wide. The cover was divided into five decorative panels by groups of narrow lines stamped vertically into the leather. The cover had a stippled background surface and a heavily stamped scrolled pattern covered its entire surface.

Conclusion:

Archaeologically, this box suggests the presence of at least one adult woman. The large number of school supplies suggest a child might be present, but the lack of child's clothing and toys such as those found in the Atchison box make this assumption less viable. When the archaeological evidence is compared with the historical documentation, the items in the box are less of a mystery.

The two dresses were probably the Campbell sisters' school uniforms. The girl's ages for the time period would be considered adult. The abundance of school supplies is explained by the fact that the girls were traveling from boarding school.

The two Chinese or oriental styled boxes are

significant within this artifact set. There is no evidence that the Campbell sisters were traveling with anyone and there are no other items in the collection to suggest the presence of an individual of Chinese origin. It was a trend in the nineteenth-century for upper middle class and wealthy individuals to collect Oriental decorative objects.

The collection of Oriental objects by wealthy Europeans was well developed by the sixteenth-century. By the eighteenth and nineteenth-centuries the European market for original as well as copies of Oriental objects was well established (Impey 1977:59-62). The fascination with Eastern materials was called *Chinoiserie* and included objects of Chinese, Japanese, the Far East, and portions of eastern Egypt in origin. By the late eighteenth-century Far Eastern countries established trade houses solely for the purpose of exporting goods to Europe and then to the U.S. Items that were collected included furniture, textiles, paintings, ceramics; architecture was also copied (*Ibid.*, Honour 1961:245-275). The presence of two *Chinoiserie* boxes indicates that the Campbell sisters had means far above the

average for the time.

VI. *Bertrand* MSC-128

Bertrand box MSC-128 was excavated between August 24 and August 30, 1969 from the midships cargo section, starboard side. There were no measurements for this box. The box pieces were discarded with few records taken. The box was marked:

UNW_ _

With painted scrawl on the other side of this face:

S_ _ IO_ _

on opposite side of the box:

1 _ _

ROBT. CAM(B)_ _ _ _

_ _ ES _ O

PL _ _ _ AD

This box was probably being shipped to Robert Campbell and Company. Robert Campbell was a successful fur trader in the Rocky Mountain-Upper Missouri region during the eighteen twenties and thirties. Campbell provided financial support for several fur trading expeditions competing with the American Fur Company. By 1845 he had established several

outfitting houses serving Indian country traders. Later he became a respected businessman in the Rocky Mountain region. He also established a dry goods and Indian-goods store on Main Street in St. Louis (Sunder 1965:92-93). Several times the *Bertrand* carried goods to Campbell's supply houses in the Montana Territory. Campbell was heavily involved with supplying Indian annuities, handling furs, and camp supplies for several groups. It is not improbable that boxes were to be shipped to Fort Benton in Campbell's charge.

It was originally assumed that this box was going to a Campbell supply house as general merchandise, but items in the box were more personal in nature. A more probable suggestion is that the box was being shipped to a Campbell supply house to be picked up later by its owner. This was a common practice in the upper river country and included both mail and packages (Settle 1971:71).

Box MSC-128 Artifacts:

Personal Utilization

Clothing and Footwear:

Children's socks (Cat. #3171 and 3493) There were six wool children's socks with alternating horizontal 1/4" wide black and maroon stripes in the box. Only the leg and heel portions of the socks survived, the toes and cuffs were gone. There were also several black socknet pieces and ten black pieces 2" wide that may have been sock cuffs.

Silk Ribbons (Cat. #3170) This assemblage included two groups of silk ribbons. There were sixteen gray-green ribbon pieces that were 1 1/8" wide and five 2" wide black-bronze ribbon fragments. The pieces had stitching holes along one side that may indicate that the ribbons were once sewn on a garment.

Buttons:

Ceramic Buttons (Cat. #784) Seven white ceramic buttons 1/4" in diameter and 3/32" thick were in this box. They had three small holes set in a circular front cavity 1/8" diameter. The remaining front surface slanted to a flat edge that was 1/32" thick. The button backs were convex and most had rough surfaces around the holes. This style of button was commonly sewn on cotton shirts, or calico blouses

if for ladies (Brown 1942:19).

Adornment

Beads:

Fifty-one loose beads were found in this box. They were in a variety of materials, sizes, and colors. Like the two previous boxes, the beads could not be associated with any particular artifact or artifacts. Table 9 contains a complete description of the beads.

Table 9: Beads

Cat. #	#	Material	Color	Dimensions Diameter x Length	Description
1024	27	glass	silver /black	3/16-7/32" x 5/16-7/32	Blown glass of light weight and thin walled. Circular in cross section, oval in plan view. Have fine parallel striations running from end to end on outer surface. They are silver with black paint.
1025	01	brass	brass	1/4" x 9/32" x 1/16" thick	Circular disc with wide oblong shape an oval 1/16" long hole in center. Edges are flat and at right angles to face.
1026	11	glass	brown-gray	1/8" x 1/16"	Flat and circular with rounded edges. All are opaque.
1027	07	glass	gray / black	1/8-5/32" x 1/6-3/32"	Circular with convex sides and flat ends. Translucent gray to gray-white with black paint on surface.

1028	05	glass	black	3/32" x 7/32"	Circular tubular beads, similar to #1019 but larger. Black opaque with iridescent patina. Some are green-blue, green, or red-yellow.

Health and Hygiene:

Brushes (Cat. #4043) The remains of two hair brushes were found in the box. The bristles were gone, but the wooden heads and handles remained in good condition. Both had oval heads that narrowed into an hour glass neck with a lozenge shaped handle (figure 21). The bottom bristle surface was flat and rough. The top side was smooth and slightly rounded. Both brushes show evidence of being painted a soft cream color. The brushes measured 9/38" total length, 1/8" thick, 3 3/4" handle length, 7/8" handle width, 4 3/4" head length, and 2 1/4" head width.

Household Utilization

Ritual:

Felt Cross (Cat. #3725) The box contained a black cross cut from a thin piece of felt (figure 22). The arms

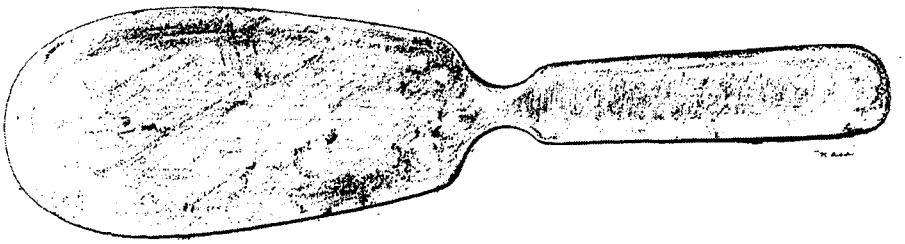

Figure 21. Hair brush back, illustrtion courtesy of DeSoto National Wildlife Refuge.

Figure 22. Felt cross (photo courtesy of DeSoto National Wildlife Refuge).

of the cross were cut to form triangular points. The cross measured 1 9/16" x 1 1/4" and it was 1/16" thick. There were no holes or tears in the felt to suggest that the piece was part of a rosary, or had been fastened to a garment.

Linens:

Bolt of Cloth (Cat. #3492) A 27" wide selvage[1] bolt of red wool flannel was found in the box. The fabric was very deteriorated when found.

Conclusion:

The variety of items in this box suggest that its contents are personal in nature. The large number of personal items and the presence of a few household items suggest that the box belonged to an adult woman. There are however, a number of seemingly relevant items missing from this box, such as clothing items. Like the Atchison box, it contains no cooking items or ceramics. The lack of many items, the sparseness of items, and the packing label suggest the box was being sent to an individual already in

[1]The selvage was the edge of woven fabric that had one or two stringer cords or a narrow border so that when woven the fabric would not ravel or need finishing (Woman's Institute 1926:255).

the upper territories and not someone traveling on the steamboat. The items in the box resemble items that may have been left behind, deemed nonessential for the initial journey.

VII. *Bertrand* FSC-234

Bertrand FSC-234 was a barrel that measured 16 1/2" diameter and was 28" tall. It was excavated between August 18 and August 23, 1969. The barrel was removed from the forward cargo spaces on the starboard side.

FSC-234 Artifacts:

Occupational Utilization

Tools:

Leather Working Tools (Cat. #3949) This catalogue number contains seven different leather working tools. All were found wrapped in a large piece of finely tanned, dark, carriage upholstery leather. One tool was a parallel ruler constructed of two thin rectangular pieces of ebony (figure 23). When closed, the pieces fit edge to edge and form a parallelogram in cross section (one edge is angled down while the other edge angles up). The ruler arms measured 5 15/16" length, 11/16" width, and were 3/32" thick. Brass

figure eight hinges measured 2 1/8" length, 3/8" width, and were 1/16" thick.

Steel Gimlet. The gimlet had an elongated, elliptical shaped handle dished slightly in the center top and bottom with a rectangular hole through the center for the drill shaft (figure 24). The gimlet handle measured 1 15/16" length and was 5/16" in diameter. The shaft was 6" in length and 1/8" in diameter, the spirals composed 2 1/4" of the shaft length and were 5/16" diameter.

Wooden awl or tool handle. The handle was oval in shape with two flat ends (figure 25). One end had a conical, metal face cut into quarters, through the center of which awl points were pressed and held. The metal tip was no longer in a working condition. The handle measured 3 13/16" length and was 5/16" in diameter.

Tool holders evolved from the common changeable-point-type cobbler's awls to their modern form in the 1860's. The cobbler's changeable awl was similar to the one described above. The wood on the handle end was heavily scored to allow a tool tip to be pushed between the metal "x" and held

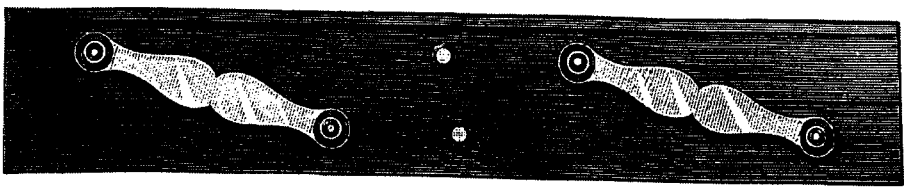

Figure 23. Parallel ruler (Barlow 1991:171).

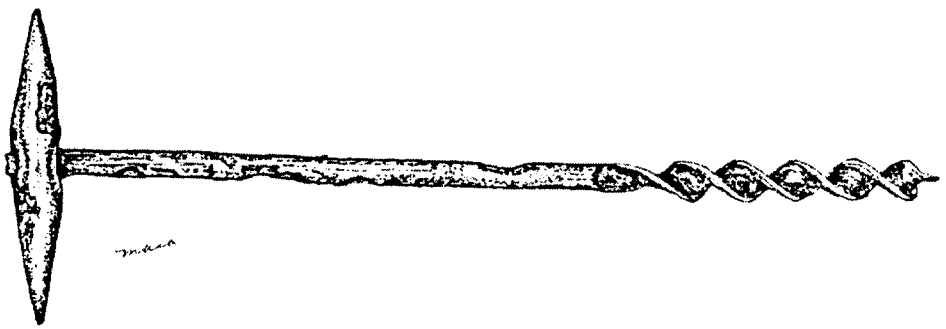

Figure 24. Carpenter's gimlet (illustration courtesy of DeSoto National Wildlife Refuge).

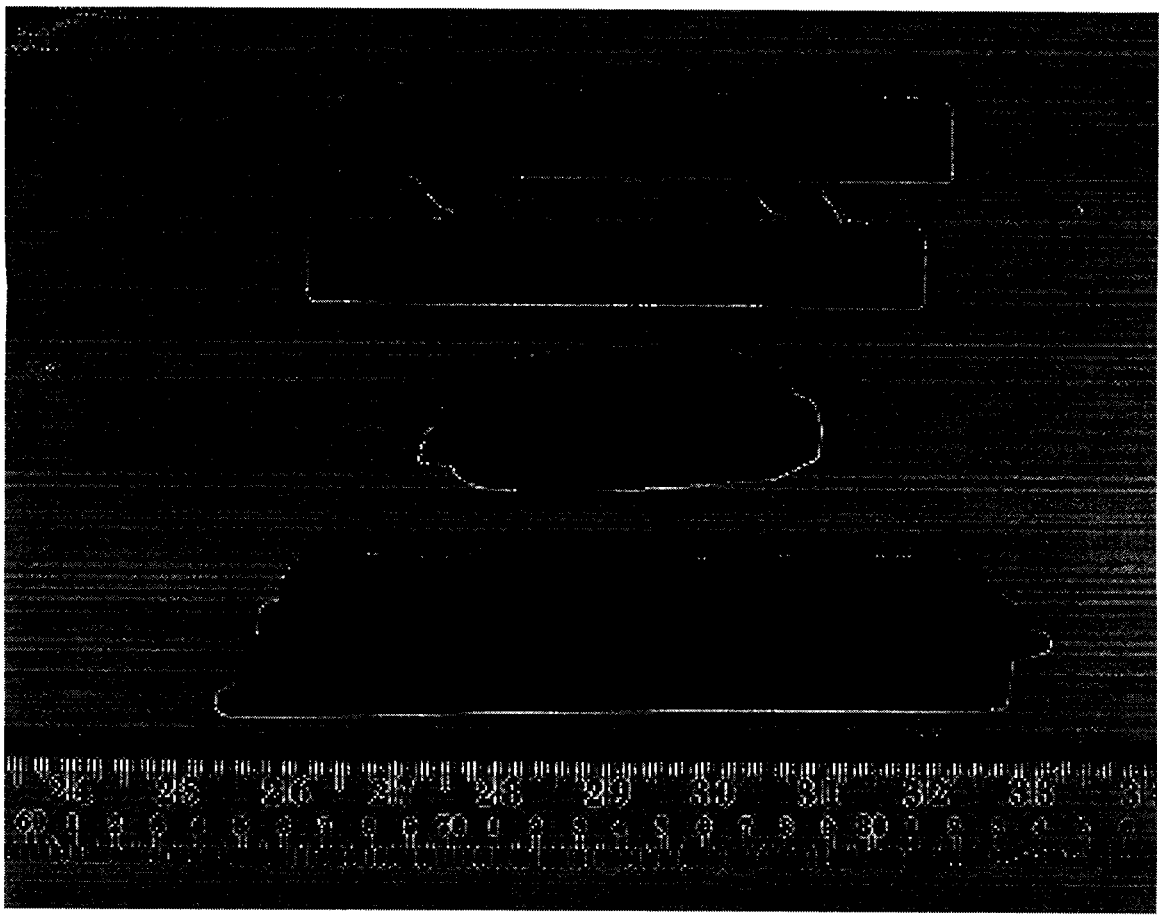

Figure 25. Parallel rule, tool handle, and shoulder stick (photo courtesy of DeSoto National Wildlife Refuge).

fast. The first adjustable versions were more solid and required a chuck wrench to adjust a metal collar holding the tool head. In 1867 Stanley versions offered a hand tightened chuck which survives in the modern tool (Barlow 1991:212).

Two pieces of rectangular cork. Both pieces measured 8" x 2 7/8" x 1/8". The purpose of the cork is unknown.

The final piece was a celluloid or rubber form. Presently, the piece is missing from the collection. The only reference is a drawing done when the piece entered the lab. There were no exact measurements and the piece has not been positively identified. It had a diameter approximately the size of a silver dollar with a flat bottom (figure 26). The piece had a domed top, divided vertically from the base to form equal segments. Its outer surface had a hard rubber texture. The piece was cast from a mold as there was evidence of a swirling flaw on the top center. It was described as buttermilk in color.

Shoulder Stick. A shoulder stick was used for finishing the outer edges of heels and soles (figure 25).

The stick was rubbed along the leather and had a polishing effect on the surface (Personal Communication, D. A. Saguto, 8/11/95). Shoulder sticks came in a variety of styles, straight, "j", round and oval (R. Timmons & Sons 1976:72). This piece is a straight shoulder stick measuring 7 13/16" x 1" x 3/4".

Folding Rule (Cat. #883) One half of a brass and wood folding rule was found in the barrel. Originally, the ruler consisted of two strips of wood 3/8" wide and 3/16" thick (figure 27). Each edge was covered with a strip of brass 1/16" thick which gave the ruler a total width of 1/2". The ruler had a circular brass hinge between the two arms. The ruler was marked in inches 1 thru 12 on one arm, 13 thru 24 on the other arm. Additional marked units included 1/2" and 1/4" on one side and 1/10" and 1/12" on the other side.

The carpenter's folding rule was used since the seventeenth century. They were mass produced items in the mid-nineteenth century. They were generally scaled in inches, halves, quarters, and eighths. Factory models were hinged, first in two and later into four brass tipped, box

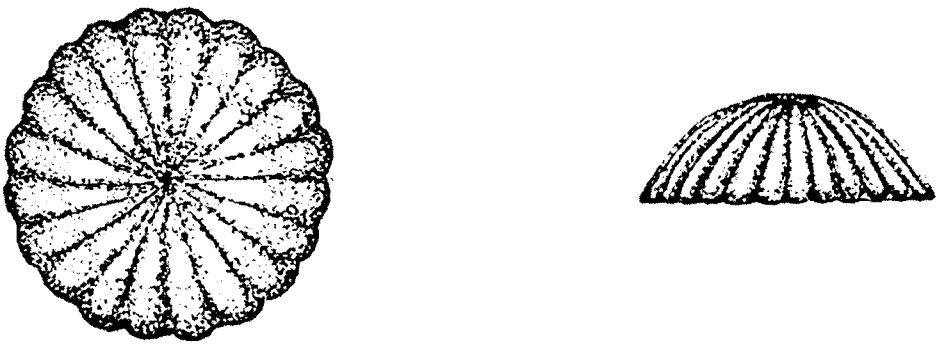

Figure 26. Celluloid form (illustration courtesy of DeSoto National Wildlife Refuge).

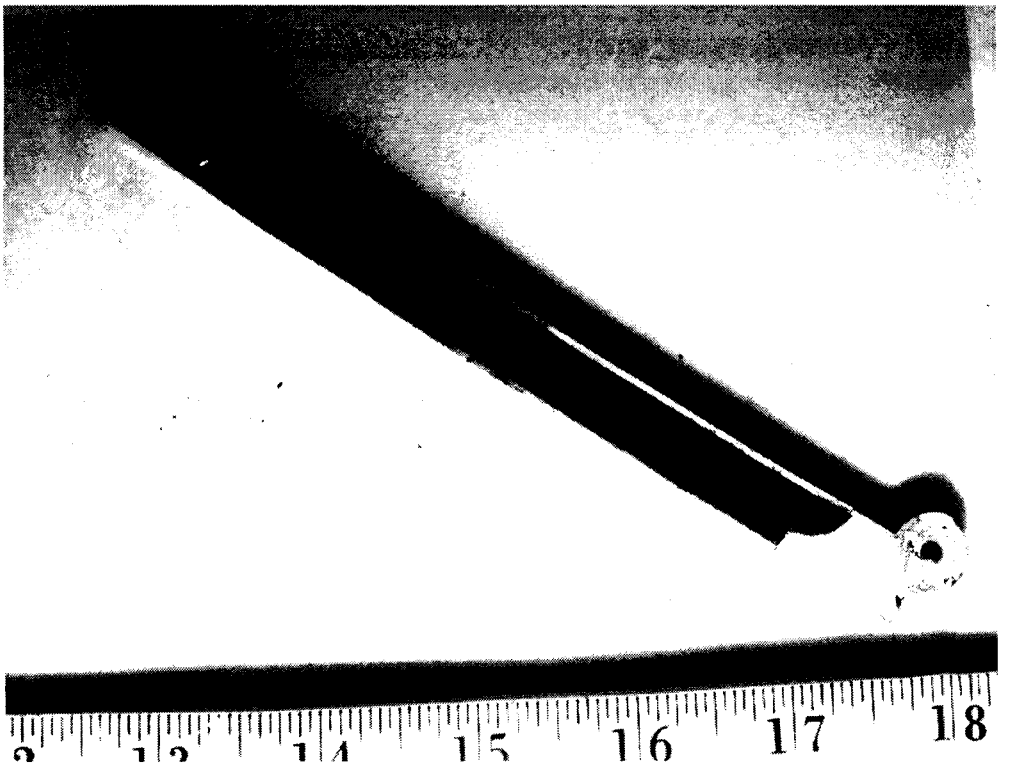

Figure 27. Folding carpenter's rule (photo courtesy of DeSoto National Wildlife Refuge).

wood sections (Mercer 1960:65).

Trade Supplies:

Shoe Repair Pieces (Cat. #'s 3992, 5306, and 5308) The barrel contained multiple pieces of leather used in shoe manufacture and repair. A taxonomic structure has not been applied to shoe materials in the past. For clarity in this study, the collection of shoe leather was divided into nineteen different classes of leather parts.

Class 1 soling leather. There were twenty-five heavy pieces of leather ranging in thickness from 1/8" to 3/8". The pieces were of various sizes and shapes. Most were roughly cut, and several showed tracing outlines. Pieces ranged in size from 6 3/4" x 19 1/4" (1/8" thick) to 3 1/2" x 7" (3/8" thick).

Class 2 scrap leather. There were 110 pieces of scrap leather in various sizes, shapes, and thickness. Many pieces were originally shoe or boot parts re-used for repairs. Many had patches cut from them; most were well worn.

Class 3 farmer's bundle's. A farmer's bundle was a rolled packet of leather scraps used for all types of leather repairs. The bundles were usually tied with a thin leather thong. They were purchased in mercantile and supply houses throughout the nineteenth century (Personal Communication, D. A. Saguto, 8/11/95). Most bundles contained medium sized, shovel-shaped pieces 1/16" thick and measured 16 3/4" x 9 1/2". Each shovel shaped piece was tightly rolled and tied with a leather tong. Many of the smaller individual rolls had smaller pieces inside, each roll was then placed within a farmer's bundle. There were eighteen bundles in this collection.

Class 4 vamps. A vamp is the front section of a shoe upper covering the toes and part of the instep (Swann 1982:90). There were 118 rough cut vamps varying in size, but with the same basic pattern and thickness. Most vamps in this collection were for children's shoes. Many examples had a number inked on their grain sides. There were examples of round-toed, square-toed and wing-tipped vamps.

Class 5 hexagonal quarters. Quarters are the sides of

a shoe joining the vamp at the front and each other at the back of the heel (Swann 1982:89). There were 151 hexagonal quarters of fairly uniform shape and thickness, although the size range varied. Each quarter was cut in a rough pentagonal shape. One edge was always slightly concave to accommodate a vamp. Many pieces were so small as to indicate that they were part of children's shoes. Several had inked numbers on the grain sides which may have corresponded with similar numbers on leather in other classes. There were both new and used quarters. Several had eyelets and a few were lined.

Class 6 backstays. There were five bottle-shaped backstays, strips of leather that cover the back seams, with bulging bases that tapered to long, slender necks (Swann 1982:89). The necks widened slightly at the tops. They were single stitched along all sides with the grain to the inside.

Class 7 shoe tongues. Shoe tongues are flaps of leather or cloth under shoe laces or buckles (Swann 1982:90). There were fourteen examples shaped like

isosceles triangles with square tops. Seven measured 2 1/4" x 6", two measured 1 1/2" x 4 3/8", and one measured 1 3/8" x 5 1/2".

Class 8 heel welt. Heel welts are thin strips of leather stitched along the seam between the insole and upper to strengthen a potentially weak place in a shoe (Swann 1982:90). There was one horseshoe-shaped example.

Class 9 arch welts. Arch welts are pieces of leather sewn between the upper and insole at the arch. There were two examples with a trapezoidal cross section.

Class 10 heels. The heel is the built-up part of a shoe or boot that supports the rear of the foot (Swann 1982:89). Shoe heels were often made of several pieces of leather to give the heel height. The eight leather heels all found in the barrel were approximately the same shape but in various stages of completion.

Class 11 boot uppers. Uppers are leather parts of a shoe or boot above the sole, normally consisting of a vamp, quarters, and lining (Swann 1982:90). This class contained four boot uppers. All of the uppers had a liner or extender

whip-stitched 3/4" from their tops.

Class 12 boot backs from uppers. There were sixteen boot backs from worn boot uppers. Each had a full length liner whip-stitched to the top line and then sewn into the side seams.

Class 13 top line extenders. There were thirty-four top line extenders of various sizes. All were rectangular and had a single row of stitching holes along their top and bottom edges.

Class 14 boot pull tabs. There were twenty-one rectangular boot pull tabs. As the tab width became smaller or larger, the length varied accordingly. Each rectangular tab was doubled over and stitched by two single rows of stitches to the boot backs.

Class 15 boot counters. Counters are outside reinforcement for quarters. There were five rectangular pieces of stiff, heavy, leather folded gently in the center to a U shape.

Class 16 back extenders. There were seven triangular pieces, or "horns," that originally would have been sewn on

the back of a top line and up the side seams of taller shoes. They had a doming front top line, thus making a gentle merge between the front and the back of the shoe.

Class 17 seam welts. Twenty-five narrow strips of leather that were sewn into seams for reinforcement (Swann 1982:90).

Class 18 top liners. There were ten top liners for woman's shoes. They were 3/8" to 3/4" wide leather strips folded over and sewn to shoe top lines (Swann 1982:91). Two top liners had scalloped edges; and two were plain and quite wide.

Class 19 counter seam cover. One small rectangular piece 1 3/8" x 2 3/16" was once stitched over a boot counter and side seam at the sole on a boot interior. There was a line of stitching on both sides and sole pegging holes were present on both sole edges.

Products:

One pair of complete boots and one shoe ready for soling. The boots were in ten pieces each. The soles had a

single layer outsole that tapered into a now separate, single layered leather half sole. The soles measured 10" x 3 1/2" and were held in place with a single row of stitching (no longer present) 1/4" from all edges. The straight heels were six layered and slightly tapering toward the back. The heels were held in place with a row of square nails 3/16" from the side and back of the heel. A second row of larger nails was inside the first row. The heels were worn down, exhibiting much wear. The insole displayed heel and toe impressions and was perspiration stained.

All of the boot pieces were deliberately separated before they were packed in the barrel. Perhaps the cobbler planned to use the parts in other shoes or was simply going to replace the worn pieces and resew the boots.

One shoe ready for soling was in this collection of leather pieces. The shoe was made using a wing tipped vamp, a backstay, and hexagonal quarters. All stitching was missing and no numbers appeared on any of the pieces.

Catalog #5308 contained one lady's shoe. The shoe had five sided shoe quarters with nine brass eyelets. Only the

eyelet row was leather lined. The rest of the quarter was lined with cloth that did not survive, but some fabric remnants were present. There were two additional eyelets in a short slit cut into the vamp. The heel was five layered and fastened to a single layer sole with one row of wood pegs. The sole was decorated with an acute angled outline of chain link stamping.

The collection also contained three sides of leather and ten partial sides of leather. The leather was tanned and ready for use.

Riding Boots (Cat. #4069) The collection also contained one well worn pair of men's boots (figure 28). The boots had a manufacture's mark "(CAL)IN'S" stamped off center on both heel faces. The boots were manufactured on crooked lasts; that is there was a right and left boot. The boots had a seven layer, straight leather heel and tapered slightly from the sole inward on three sides. The heel breast was straight. The remains of seven or eight square, iron pegs used to attach the heel to the sole were visible.

The boots had a rounded toe and measured 19" in overall

Figure 28. Men's leather riding boots (illustration courtesy of DeSoto National Wildlife Refuge).

height. They had a sole length of 9 7/8" x 3", and a heel height (including sole) of 1 1/4". The boots were well worn but still in good condition at the time of the vessel sinking.

Seven Dress Boots and Fragments (Cat. #2958) This catalog number includes seven finished dress boots along with thirty-nine parts and fragments. There are no manufacturer's marks on the boots. The boots were made on crooked lasts, there were three lefts and four rights. The boots all had square toes and were McKay[1] stitched and pegged. These boots were sewn with the grain side on the boot interiors. All appeared to be new and ready for sale.

Leather Belt (Cat. #5307) The barrel contained a cut and stitched leather belt with no manufacture's marks. The belt consisted of a single strip of black leather 36 5/8" x 1 1/4" wide that tapered at both the tongue and buckle ends. The tongue end contained eleven circular holes with the first eight holes being 1/2" apart and the last three holes

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[1]McKay sewn shoes were introduced in the 1860's. The McKay sewing machine imitated the sewing of the "channel pump," a thread passed through the sole, upper, and insole (Peterkin and Saguto 1989:14).

7/8" apart. The tongue end was 3/4" wide and began to taper at the ninth hole. The belt appears to have been cut off, as the rounded end had a half hole in its tip.

The buckle end tapered inward to a 7/8" inch minimum width then tapered back out to 1" wide. At the narrowest point on the belt an oval slot was cut for the buckle tongue. A buckle would have been stitched into the fold. The belt was decorated with a thin, impressed line stamped down both sides. The belt was in good condition but showed considerable signs of wear.

Leather Billfold (Cat. #2671) This billfold consisted of a rectangular piece of fine leather folded into fourths. One end of the rectangle was narrower and slightly convex forming the billfold flap. The second folded section served as the front of the billfold and was highly decorated. It had two small vertical slits 1/2" long and 1 1/8" wide. A narrow leather keeper would be inserted through the slits. Stitching along the sides and bottom of the front section held a rectangular pocket 1/4" narrower than the front, to back of the front section. Sewn into the same stitching at

the sides were two small flaps, one to each side with a 5/8" gap at the center and placed in front of the pocket, grain side out. Each flap had a 1/8" hole about 3/8" from the gap edge. This once held a string or button that secured the two flaps together.

The billfold was in good condition. It measured 7 3/4" (total open length with fourth section as pocket), 3 1/4" closed length, 6 3/8" wide, 5 3/4" length of strap and 1 1/4" width of strap.

Leather Bible Cover (Cat. #3986) One thin leather bible cover. The cover was rectangular, measuring 7" x 5 1/8". A 130 degree angle was cut from each corner to allow the cover to fold over a book without bulging at the corners. The cover was divided into three decorative units consisting of a front, binding, and back.

Book Covers and Binding (Cat. #5309) Two leather book covers and one binding were also found among the scrap leather in the barrel. No manufacture's marks were present. Each cover consisted of a leather rectangle with an inked design stamped into the flesh side. The book covers were

identical except for size, one measured 15 3/8" x 13 1/4" the other 19 1/4" x 14". All of the corners were angled inward towards the sides. The rate of the angle was not uniform but allowed the folded corners to lie flatter. The narrower ends of the covers folded over the hard backing of a book. The long sides of the cover ended flush with the top and bottom edges of the book (it did not overlap). These edges were covered by a folded, narrow strip of lighter weight leather with gilt stencilling. The bottom (or top) two corners of this strip were cut at a diagonal to facilitate smooth folding. Each cover once had one of these strips on both the top and bottom book edges.

A volume number (?), either a 6 or 9 in this case, was on the binding. Folds indicate that these were once complete books, however, only the leather covers and one binding are now present. The book binding reinforcement strips, three more bindings, and the paper are now missing.

Conclusion:

The items in this barrel are not typical for the cobbler's craft. The tanned hides, scrap leather, farmer's

bundles, shoe and boot pieces, and completed, or nearly completed, shoes represent an example of supplies owned by most cobbler's in the nineteenth century. It is, however, uncommon for cobblers to practice leather trades other than shoe making or repair. It is unlikely that this cobbler made the book covers and bindings or the belt for sale. These pieces of leather were probably being used as scrap leather for shoe repair (Personal Communication, D. A. Saguto, 8/11/95).

The tools in this barrel are not typical either. The only cobbler's tool in the barrel is the shoulder stick. The shoulder stick provides a definitive clue that this barrel did belong to a cobbler and not to a farmer or merchant repairing leather. The tool was only used in finishing shoes. There are several important tools used in shoe manufacture that were not found in the barrel. The absence of shoe hammers, lasts, pincers, and other primary tools suggests that the items in the barrel were "extras." The cobbler probably kept his tools with him while on the vessel. The tools were his livelihood; the items in the

barrel were far less important and easier to replace.

VIII. *Arabia* Carpenter's Box

One of the more intriguing boxes in *Arabia*'s hold apparently belonged to a carpenter. This was the only box in the *Arabia* collection used for this study. Many items in this box were positively associated with each other, where other personal items within the *Arabia* collection were not. The box contents were identified from photographs taken in the field as it was opened (figure 29). Many of the tools were re-associated within the collection using salvage photographs. In addition to using photos, interviewing members of the salvage party, particularly members of the Hawley family, and museum staff helped to put the appropriate items back in the box.

It should be noted however, that many tools were in the *Arabia*'s cargo and during conservation, storage, and display, some tools associated with this box were mixed with those from the cargo. Very often tools from the general cargo were not distinguishable from tools in this box. As a result, many items shown field photos of this box could no longer be positively identified within the collection.

Figure 29. Photo of carpenter's box being opened during salvage (Hawley 1995:54).

Tools that were worn, or well used, those with personal initials stamped or stippled on them, and those that were one of a kind items in the collection were assumed to be those tools noted in the photographs and therefore treated as personal. The following collection, as noted, is as complete as is possible at this time. The museum is making every effort to place associated items in their proper context. Notable omissions will be discussed at the end of this chapter.

Carpenter's Box Artifacts:

Occupational Utilization

Tools:

Carpenter's Whetstone (Cat. #A2129P) This item was a well-used sandstone whetstone. The stone was cemented in a hollowed wooden block or box which measured 10"x 2 7/8" x 3/4". The box was handmade to hold a precut stone. The stone, which measured 8" x 2" x 1 1/2",[1] showed extensive

[1]Whetstones were also known as Turkey stones. By 1800 most of the fine grade whetstones sold in the U.S. were quarried, made and sold by Christian Schneeberger of Moselem Church, Berks Co., PA. According to local tradition he

wear or use (figure 30).

Draw Knife (Cat. #A2127P) The carpenter's box contained a draw knife with a steel blade that measured 16" in length. The blade was beveled and straight with a slightly rounded front surface (figure 31). The blade measured 1 1/4" wide in the center and 7/16" wide where it joined two wooden handles.

Draw knives were pulled using both hands to thin the sides of shingles held by a shaving horse, or to round off tool handles, wagon spokes, or ladder staves (Mercer 1960:100). To use, the blade was held almost flat to the work surface and pulled toward the carpenter. For a deeper cut the blade angle was increased (Kebabian 1978:94) Throughout the country, draw knives were commonly made by small, local edge-tool companies, village blacksmiths, and farmers on their own forges from wrought iron stock or worn out files (Kebabian 1978:97).

The front surface of the blade of this draw knife had

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carried his whetstones 58 miles by foot to be sold in Philadelphia were they eventually were sold across the U.S. (Mercer 1960:290).

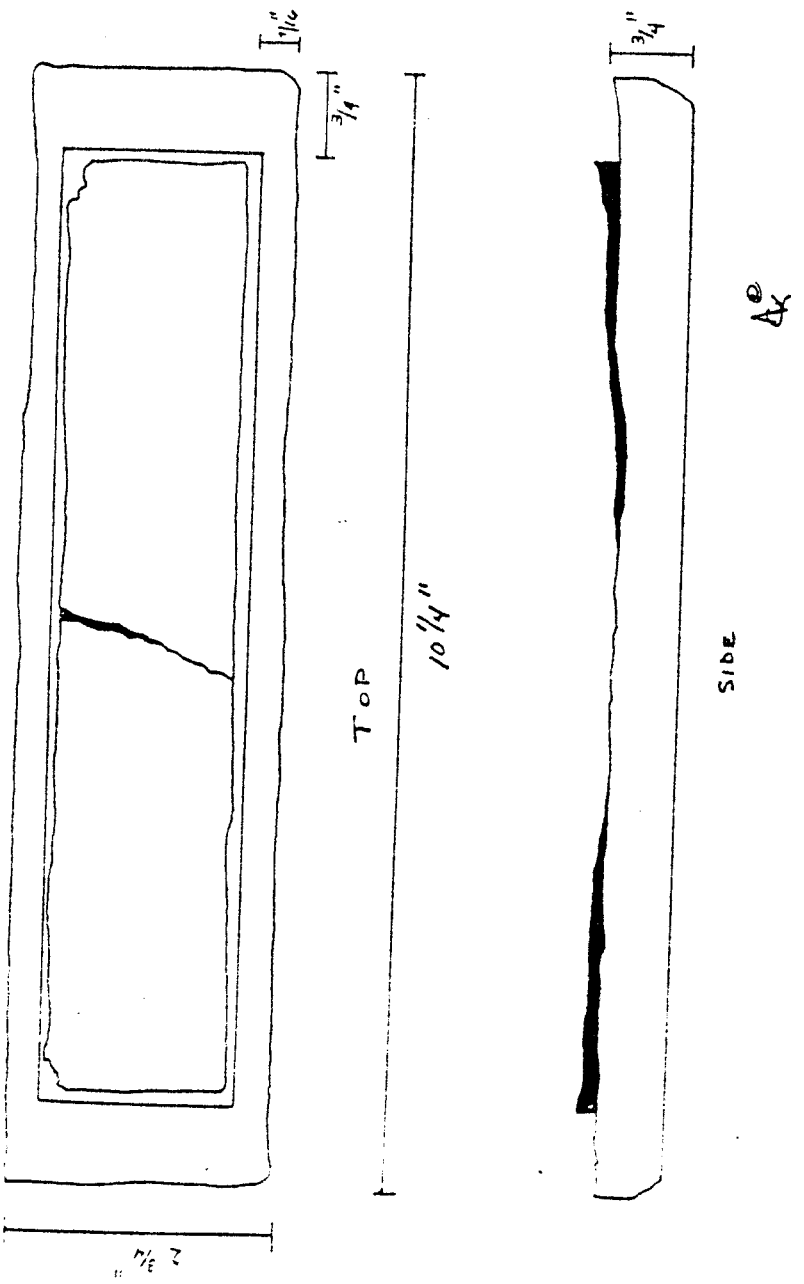

Figure 30. Carpenter's whetstone (illustration by the author).

the initials' J V or (U) K stippled into its surface. Also evident were the remnants of a manufacture's mark stamped on the lower front surface of the blade: _ _ _ C A M. The manufacture has not been identified. This style of draw knife was specifically a carpenter's draw knife due to the straight nature of the blade and the blade's width. Typical draw knives, coach makers, and concave or hollow ground draw knives often had rounded or concave blades (Russell and Erwin Manufacturing Company, 1865:201).

Sticking Knife (Cat. #A2065P) There was a steel and wood sticking knife in the carpenter's box. The blade was spear shaped and measured 4 1/2" in length and 1" in width. The manufactures mark on the blade was "J. RUSSELL & Co. GREEN RIVER WORKS." The knife had a rectangular cocoa wood handle that measured 4 1/8" x 3/4". The handle was attached to the blade's tang with two brass pins that ran through each face of the handle. There were two notches cut into either edge of the handle so it could be rope or leather wrapped. The wooden handle displayed impressions of some type of wrapping or cording. The initials "I K" were carved

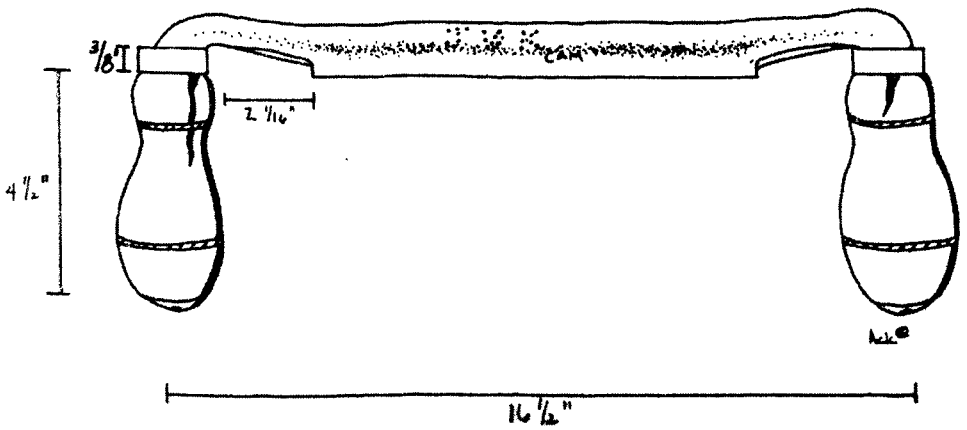

Figure 31. Carpenter's draw knife, illustration by author.

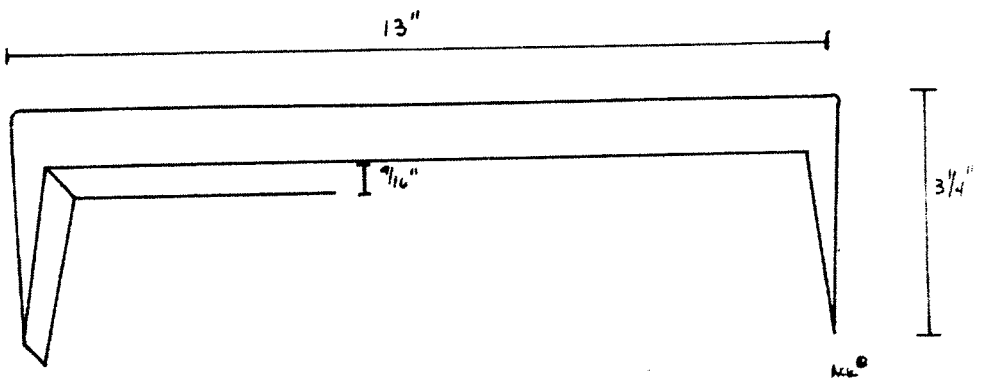

Figure 32. Saw mill dog, illustration by author.

into the spine of the knife handle.

In the early nineteenth century most mountainmen's store-bought knives came from England, but in 1834 John Russell began manufacturing butcher and carving knives on the Green River at Greenfield, Massachusetts. Russell's knives were shipped west to companies such as Pierre Chouteau, Jr., & Co. where they were purchased by hunters, trappers, and Native Americans. It was estimated that between 1840 and 1860 five thousand dozen were purchased in the west for between $1.50 and $3.50 a dozen. The knives were well made and beveled on only one edge for skinning. The two most common blade lengths shipped west were the 6" butcher knife and the 8" carving knife. The term "Green River" became a standard part of mountainmen's vocabulary. Journals commonly refer to a successful hunt or fight when a knife was thrust up to the "Green River" (Peterson 1958:64-68).

Sawmill Dogs (Cat. #A2162P and #A2163P) Two wrought iron staple-shaped sawmill dogs were found in the barrel (figure 32). The larger one measured 13" x 3 1/4" x 9/16"

thick. The smaller one measured 7 7/16" x 3 1/4" x 7/16" thick. Neither had a manufacturer's mark.

Sawmill dogs came in a variety of shapes and sizes. Most varieties were readily available and used throughout the nineteenth century. Sawmill dogs looked similar to heavy iron staples, and were used to hold logs or balks in place by placing a heavy log across blocks or cross pieces placed at right angles to the log being hewn. One spur of the dog was driven into the under-placed cross piece, and the other at an upward tilt into the log side. The dog prevented the log from rolling from side to side. They were employed at sawmills, or over saw pits. They were also used by carpenters for log hewing when the logs were not heavy enough to lie still under their own weight (Mercer 1960:75-76).

Screw Arm Plow (Cat. #2160P) The box also contained one boxwood and iron screw arm with screw stops, stop plate, and eight irons (figure 33)(Russell and Erwin 1865:186). The assembled mechanism measures 10" in height and is 8 1/2" wide.

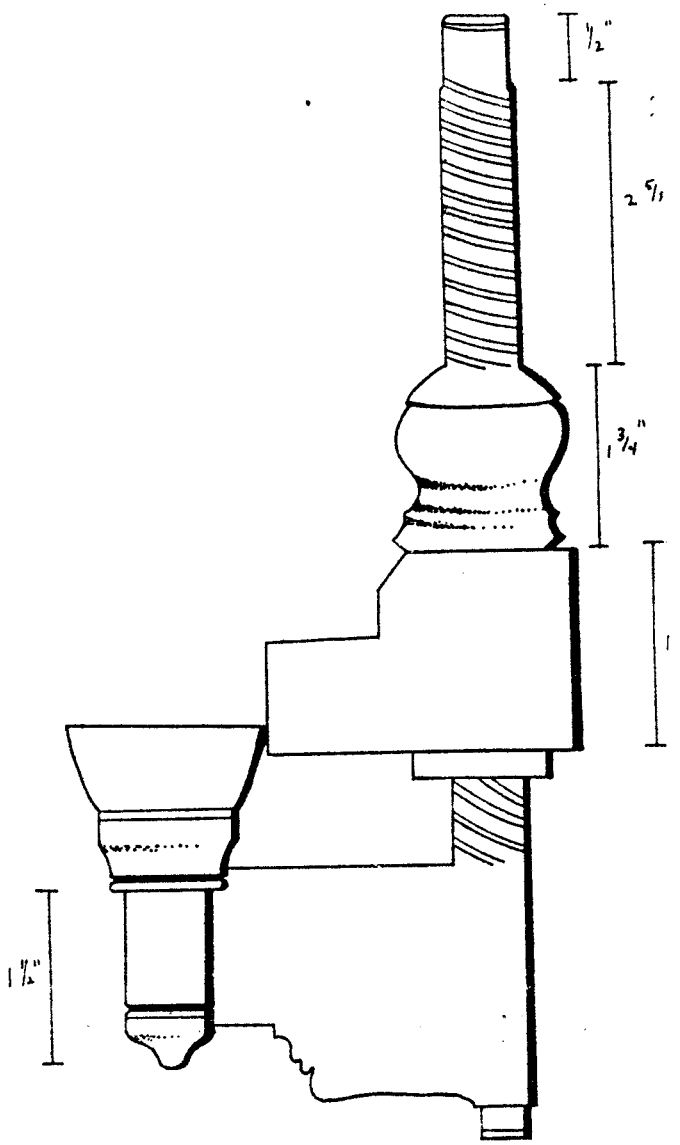

Figure 33. Screw arm plow (illustration by author).

Screw arm plows were used to cut narrow tongues and grooves in door panels. Adjusting the screws and stop plates allowed the carpenter to vary the depth of the groove (Pollak and Pollak 1983:20-21).

Carpenter's Wrench (Cat. #A2165P) There was an oak and iron adjustable carpenter's wrench in the box. The total length of the tool was 12 1/2", with a handle length of 5 1/2" (figure 34). The handle was attached to the wrench head by means of an iron screw shaft. The wrench head was 3" x 1 7/8". There were no manufacturer's marks present but the design matches one noted as "Taft's Pattern," a L. & A. G. Coe's patent, advertised in the *Russell and Erwin American Hardware Catalog of 1865*. There were two initials stippled into one side of the wrench head, "J (K)."

The first metal wedge jaw on a shifting-type spanner or "monkey wrench" appeared between 1790-1835, but provided only a small amount of adjustment in the wrench head. In 1835, Solyman Merrick of Springfield, Massachusetts patented the first sleeve, or screw adjusting, feature. This was further improved in 1841 when two brothers, L. & A. G. Coe

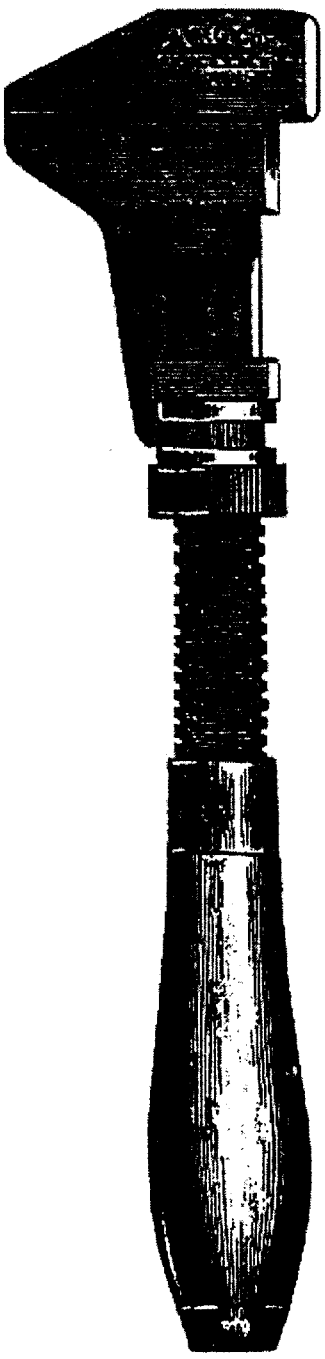

Figure 34. Adjustable wrench in the Taft's pattern (Barlow 1991:223).

replaced Merrick's wrap handle with a knurled-rosette nut on a shaft parallel with the handle. The new design allowed the wrench to be adjusted with the same hand that held the wrench. By 1860, Coe's patent wrenches were in world-wide distribution and many new patent modifications were beginning (Barlow 1991:220).

Lever Saw Set (Cat. #A2166P) Also in the box was a wood and steel lever saw set, of the Stillman Patent Design (figure 35). The tool had a total length of 6 1/2" and a lathed oak handle. The faint remains of a manufacture's mark were present on the neck of the steel tool head, but were unreadable. The letter "J" was stamped on the back of the steel neck above another stamped letter, possibly an "O."

Saw sets are used to align or set saw blades. It was the "set" or outward splaying of the teeth that kept the blade from binding or freezing up. Saw sets in the nineteenth century appeared in three basic designs: hammer-struck saw sets, wrests with wooden handles, such as A2166P, and plier-types. All served to ensure a uniform

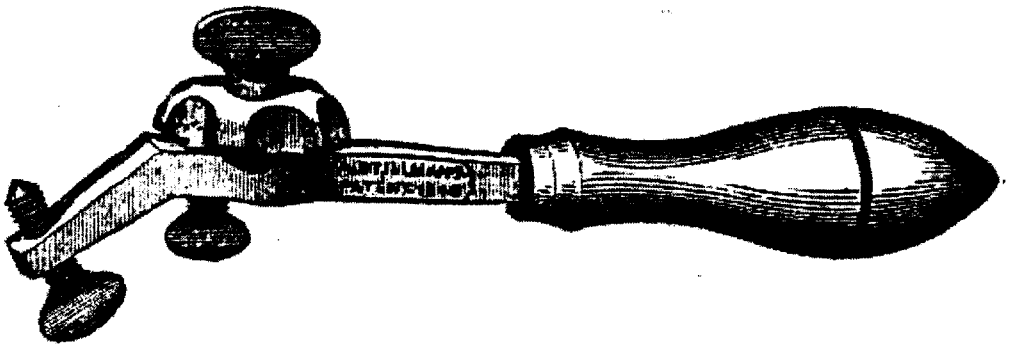

Figure 35. Lever saw set in the Stillman's patent (Russell and Erwin 1980:67).

tooth pitch on cross cut and rip saws (Barlow 1991:184-185).

Chisels (Cat. #A2161P, A2172P, A2169P, A2170P, A2167P, A2168P) Several forms of chisel were positively identified in the carpenter's box. The most prominent were forming, or firmer, chisels and paring chisels (figure 36). Forming chisels or firmers were the heaviest tool of their class. The head had a socket in the larger, heavy models used by carpenters and a tang when used by joiners. A socketed chisel had a conical socket above the blade to receive a handle with a rounded taper on its lower end that fit into the socket. Tanged chisels stopped above the blade in a shank with an elongated spur that was inserted into a handle. Both models were, however, used interchangeably (Kebabian 1978:47).

Paring chisels are lighter duty tools than forming chisels. These chisels were used for shaping and preparing long planed surfaces, especially in the direction of the grain of the wood. Paring chisels were generally pushed with the hand or shoulder. They have the smallest cutting edge angle, no more than 15 degrees (Blackburn 1974:51).

The only difference between forming and paring chisels was the manner in which they were used. Both could have straight or beveled edges and they were manufactured in the same way (Mercer 1960:164).

As with the forming and paring chisels, mortise chisels varied greatly in form and size. There were three basic styles of mortise chisel produced in the nineteenth century. The common short-handled joiner's mortise chisel had a straight and almost square ended blade. This type of chisel came in several varieties. Catalog #A2167P may be a London-pattern sash mortise, a thinner and finer lined version of the joiner's mortise. There were also swan or goose necked mortises, a lock-style mortise that resembled a pry bar; and the twibil, a straight bladed tool with a right angle socket handle (Barlow 1991:40). The latter two styles were not found in the carpenter's box. All three styles were produced in several variations and used primarily for soft wood mortising where no preliminary boring was required. Most mortising chisels were socket handled; they were generally pounded with a mallet and the socket withstood the

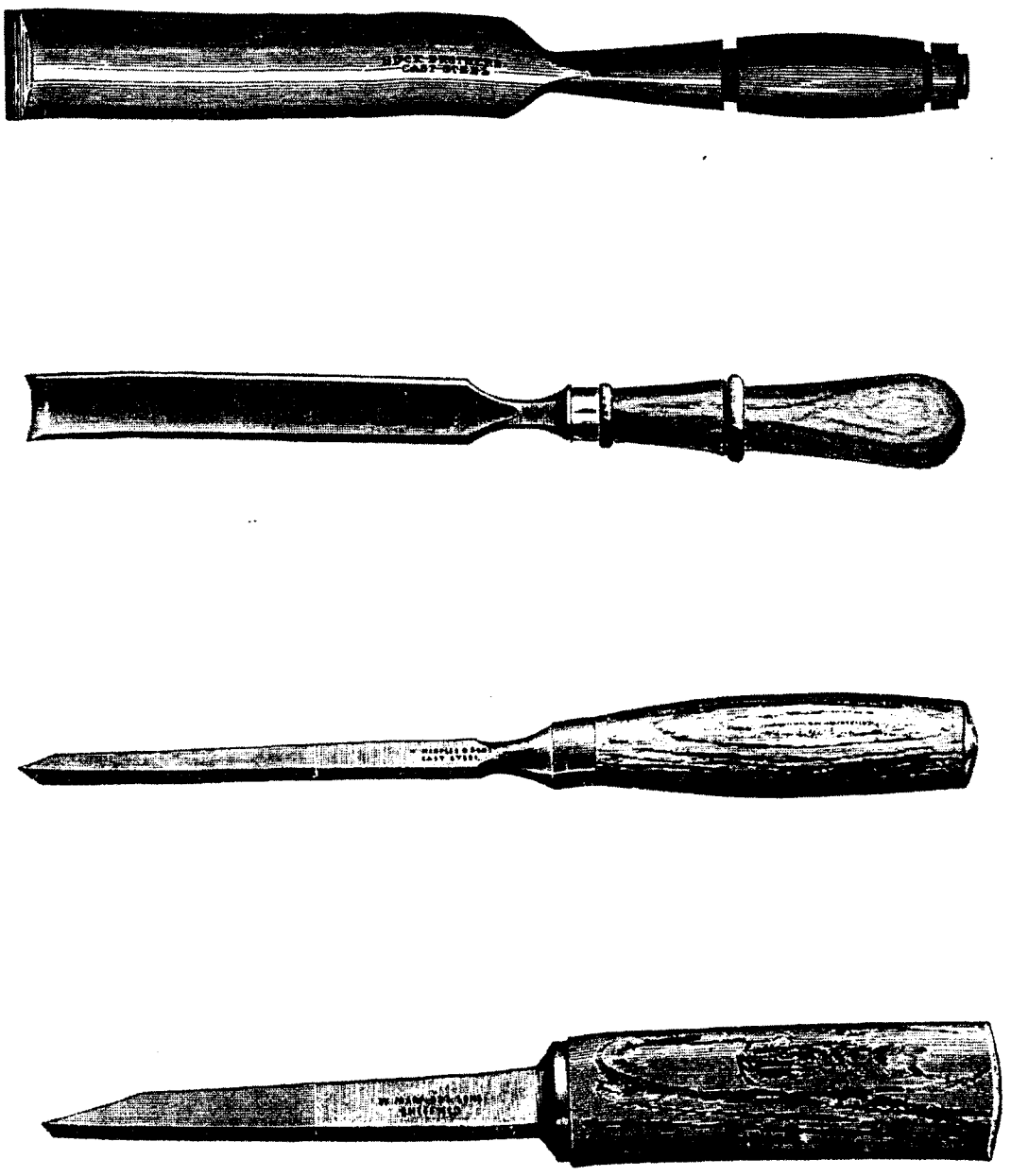

Figure 36. A forming chisel, paring chisel, London-pattern sash mortise chisel, and a joiner's mortising chisel (top to bottom) (Barlow 1991:41).

force better than a tang (Mercer 1960:168).

Artifact #A2169P was a large forming chisel that measured 17" in total length, 10 3/4" handle length, and a blade of 6" x 1 7/8". The manufacture's mark on the chisel blade read, _ HAYWOOD. It had a pine wood handle that may not have been original as it was too big for the socket. This may be a result of the handle's prolonged exposure to a wet environment.

Artifact #A2161P was either a paring chisel or a flat sweep gouge (see below) with a blade measuring 9" x 2" x 1/8" with a socket handle 4 3/4" in length. The back of the blade had a slight curve, but was not beveled. Portions of a manufacture's mark were present:

T. H. _ _ T
CAST S(T)(E)(E)(L)
(T) A R K (A) _ _ _

Artifact #A2170P was a paring chisel with no visible manufacture's marks. It had a blade measuring 6 1/2" x 1 3/8" with a pine socket handle 7 1/4" long. The handle had an elegant figure eight shape, and was turned on a lathe.

Artifact #A2172P was long and narrow with a beveled

edge. The blade measured 8 3/4" x 1", and the handle was 8 7/8" in length. It was the only example of a bevel-edge paring chisel in the box. There were faint impressions of a manufacture's mark visible:

W _ _ N R
_ _ _ T R T _ _ _

Artifact A2168P was a mortise chisel. It measured: 11 1/4" in overall length, 6 1/4" in handle length, 5" blade length, and 3/8" blade width. This chisel showed little use; the blade angles were still sharp and well defined. A manufacture's mark stamped into the steel neck of the tool read: W _ C R _ _ _ _ F. This was a joiner's mortising chisel.

Due to the fine lines of this tool, catalog #A2167P, may be a London-pattern sash mortise chisel. It has no manufacture's marks and measures: 10 1/2" in total length, 5 1/2" handle length, 5" blade length, with a 1/4" blade width. The artifact is well worn. The sharp angles of the blade are only visible under close scrutiny. The blade is beveled on one side and flat on the other.

Gouges

Constructed in identical fashions as chisels, gouges also had several uses and forms, were produced with both socket and tang handles, in a variety of sizes. Gouge blades form an arc in cross section which produces a rounded cut. They are constructed in three type of curvature: full sweep, middle sweep, and flat sweep, to produce a deep, medium, or shallow concave cut (Kebabian 1978:47). Gouges were one of many tool types in the salvage photo of this box, but were not positively identified within the collection. Due to the slightly curved nature of its cutting edge, artifact A2172P may be a shallow gouge rather than a paring chisel.

Open-handed Compass Saw (Cat. #A2171P) A pine handled and steel bladed compass saw was in the box. The narrow steel blade was attached to the saw arm with two brass pins arranged side by side. The saw measured 19 1/2" in total length, the blade is 13 3/4" long x 3/4" wide, with a handle 5 1/2" across.

A keyhole or compass saw had unset teeth with an extra

heavy blade for strength while being narrow and straight for cutting circular kerfs, or key and latch holes in doors. The saw was called a keyhole saw when it was mounted on a straight handle and a compass saw when mounted on a modeled handle grasp like #A2171P. Compass saws were also called fret saws or lock saws, depending on use, by various authors (Mercer 1960:139).

Child Utilization

Toys:

Frozen Charlotte Doll (Cat. #A2134P) A 3" tall porcelain doll with outstretched arms was found in the bottom of the carpenter's box (figure 37). The doll's delicate facial features were painted in black, the lines of her bonnet in pink. The doll was wrapped without clothing in the toe of an old wool sock. The doll is a frozen Charlotte Doll (Borger 1983:55).

Popular in the late nineteenth-century, Frozen Charlotte dolls came in a variety of sizes and styles. The name was derived from a popular folk ballad "Fair

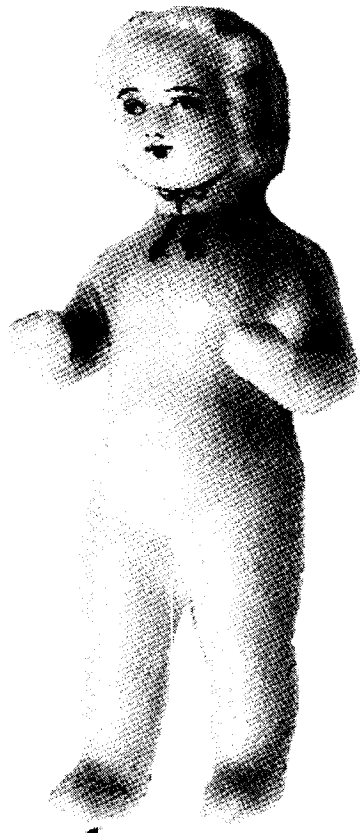

Figure 37. Frozen Charlotte doll (Hawley 1995:54).

Charlotte," credited to William Lorenzo Carter. Carter was a blind minstrel, who composed the verses in 1833 while in Vermont. Legend suggests his ballad was based on the true tale of a young woman who passed away on a New Years Eve carriage ride. The young woman froze to death on her way to a dance with her young love. The minstrel's ballad was said to have inspired the production of the little dolls (Freeman 1962:79). The porcelain dolls were produced from 1850 through 1914 in Germany. They were either white, pink-toned porcelain, or black china (Borger 1983:55).

Conclusion:

Several items appearing in the photograph were not discussed above. The box holding the tools was rectangular in shape, approximately 4' x 3'. Exact dimensions of the box are not available. Few records were kept during salvage and the box is now frozen and awaiting conservation. The box had a wooden tray with a central handle which separated the tools. The tray had a three dimensional parallelogram shape. Its base measured 24 1/4" x 12 1/4" and 13 4/3" at

the flared lip, with a depth of 4". The total height of the handle was 6". The tray fit neatly into the larger tool box. Initials found on the outside of the box were not recorded and museum staff can no longer recall the exact initials. The museum staff did note that this box was the only one in the collection not filled with mud when opened; presumably an indication that the carpenter was a fine craftsman (Hawley 1995:54). The box top was constructed with a complex pattern of joints to display the quality of the carpenter's work. This type of tool box, a joiner's box, was common in the nineteenth century (Allen 1992:12).

The box also contained several gun parts: ram rod guides, a trigger guard, trigger, wood screws for a gun, pins, and a percussion cap hammer (Greg Hawley, Personal Communication with Lynn Jenkins, November 1994). There were no measurements or other information on these items.

Strangely, there were no rules, mallets, hammers, plumb bobs, drills, screw drivers, augers or levels noted in the box photo.[2] One item in particular that appeared in the

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[2]It should be noted that the photo was taken when the box was first opened. There are no photos of the box as it

photo is a large number and variety of carpenters' planes. Although they could no longer be linked to this box, several different types of bench planes were present in the museum collection.

The *Arabia*'s carpenter box represents a fine example of a working nineteenth-century craftsman's tool box. The quality of the box and the tools suggests a craftsman dependent on his craft for his livelihood. Most of the tools in the box were well worn and some may have had handles or parts replaced which is indicative of much use.

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was unpacked or with the tray removed. All items mentioned as missing are present in the *Arabia* collection; some may have come from this box.

IX: Quantitative Analysis

Statistical Goals:

The purpose of submitting the artifact assemblage to quantitative analysis was to suggest a means for cross checking observed phenomena in the archaeological record. The main goal of the statistical study was to better understand interrelationships between gender and socioeconomic class by studying material culture.

The statistical package used to perform the artifact analysis was *SPSS* (SPSS Inc 1990:i). *SPSS* operates on a mainframe system and is widely used by large universities and companies with mainframe networks with DOS, Windows, or APPLE/Macintosh compatible systems.

Statistical analysis used in this study included means tables, frequency distributions, and logistic regression. The *mean,* or arithmetic mean, is the most widely used statistical application. The *mean* estimates central tendency; it expresses the average or center of gravity of a

set of variants[1] (Thomas 1986:65). In SPSS the means application displays the mean, standard deviation[2], and group counts for a dependent variable within groups defined by one or more independent variables.[3] This relationship can be expressed by means tables displaying requested univariant statistics for the population as a whole and for each value of the first independent variable defined by the table (SPSS 1995:457).

Frequency distribution presents the values and counts of a variable. Frequency distributions allow the researcher to better visualize trends and distributions within the data (Thomas 1986:42-43). *Logistic regression* is a technique by which values on a dichotomous dependent variable are "predicted" by a set of independent variables (SPSS

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[1]A variable is a measurable quantity, represented by a symbol, which is free to assume more than one value. A variate is an individual measurement of a variable (Thomas 1986:11).

[2]Standard deviation is the square root of variance or the average dispersion of the values about the mean (Thomas 1986:76-77).

[3]Independent variables are the possible causes upon the dependant variables (the possible effect), that are contained in the same data set (Jarausch and Hardy 1991:32).

1990:312). Logistic regression allows a dependant variable, such as gender, to be compared with independent variables such as age and personal. The statistical application measures how the variable "age" affects the variable "gender," and then asses how the variable "personal" is affected by "age" and how the combined influence of "age" and "personal" affects "gender." In short, logistic regression allows researchers to examine the effects of one variable influencing another measured at the dichotomous level. The resulting analysis explains how independent variables within a data set[4] influence each other and how they affect, inconcert, the dichotomous measure.

Variables and Value Labels:

The unit of analysis for this project was the individual artifact within each artifact assemblage. An individual artifact is referred to as a "case." *Variables* are distinctive features of each case, while attributes of each variable are called *values* (Jarausch and Hardy

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[4]The data set is a collection of information *about* people or a specific culture, in this case the date set is the collection of individual artifacts being submitted to quantitative analysis (Thomas 1986:7).

1991:30). Each artifact was measured based on fourteen variable questions. See Table 10 for a breakdown of variables and their corresponding values.

Table 10: Variables and Value Labels

Variable:	Value:
Gender	Female, Male, or no sex (referring to items that are not sex specific).
Age	Adult items, child items, or no age (referring to items that are not age specific).
Clothing	Outer garments (hats, coats, gloves, ect.), dresses (including skirts and blouses), male specified clothing (trousers and shirts), shoes, buttons, and beads.
Adornment	Yes or no. Every item is subjected to this variable. For example, beads would answer yes, buttons, no.
Household	Yes or no. Is the item household or not?
Occupational	Tools, supplies, or products.
Child Use	Toys, educational, or misc.
Sewing	Yes or no, is the artifact a sewing item or not?
Personal	Yes or no, is the artifact personal or not?
Manufacture Mode	Was the artifact homemade or manufactured?
Maker's Mark	If manufactured was a maker's mark present or not?
Luxury Item[5]	Yes or no, is the artifact a luxury item or not?

Frequently, the determination of how each item fit within a

[5]An artifact was defined as a luxury item if it exceeded the documented norm for that particular type of item. For example, silk clothing was labeled luxury because in the nineteenth century silk was an expensive, uncommon item. Typical emigrant clothing was made of cotton, linen, or wool, all more economical fabrics.

variable was subjective. Little historical documentation concerning specific breakdowns of material culture use exists. For example, were nineteenth-century women the only members of society who cooked or sewed? Generally yes, but in certain circumstances no. Men often cooked in the Montana mining camps, military camps, or locations where women were not present. The only feasible way around these problems was for the researcher to assign values based on a combination of archaeological site information and available historical information about that site, while remaining consistent when assigning values within variable questions. As an example, there were many beads in some boxes. The beads were evaluated within the gender (female), clothing, and adornment variables. Assessment of the value for gender was based the individual box and historical context. Emigrant men typically did not use beads as clothing adornment, but period photographs clearly demonstrate that emigrant women often adorned their finer clothing with beads.

Beads, along with buttons, hooks, and eyes were not

however, assigned to the sewing variable. This was a choice made by the researcher. There was no way of determining whether beads, buttons, hooks, or eyes came from a single garment, multiple garments, or if they were placed in the packing boxes as sewing notions. Due to differential preservation, only fabrics made of animal fibers, such as fur, wool, and silk survived. Most vegetable fibers, such as cotton, hemp, and linen did not survive. Disintegration of cotton and linen thread and fabrics resulted in many loose buttons and beads in some boxes. It is reasonable to assume at least some of these items were sewn with cotton or linen thread, possibly onto cotton or linen garments that did not survive.

Cotton was a staple clothing fabric in the nineteenth-century west. It was relatively inexpensive and readily available. Cotton garments were almost certainly packed in some of the boxes. Buttons, beads, hooks, and eyes could not be evaluated as sewing notions, nor should they be evaluated as intact artifacts; they are embellishments of an artifact that no longer exists. For these reasons, they

were evaluated with the clothing variable.

This method of evaluating artifacts is only viable if the researcher is consistent in evaluating like artifacts; if the assumptions are based on valid historical references, and if each choice is carefully documented and tested. See Appendix G for specifications on artifact placement within variables.

Analysis:

Variable distribution across the five sample survey and within individual boxes was determined through frequency analysis (See Table 11). Frequencies were run to determine the number of cases (n) in each box. There were 1,685 individual artifacts in the sample. Only 180 cases made up the statistical sample size because there were only 180 catalog numbers representing the five boxes. There were many multiple, similar, artifacts associated with a single catalog number. For example, buttons and beads were cataloged according to type in each box; a single catalog number might have 35, 100, or 300 beads assigned to that number. Therefore, one bead of a given type in each box

stood as a case number.

Seventy-eight cases (43.4%) of the sample, were in the Atchison box, 56 cases (31.1%) in the Campbell sister's box, and 13 cases (7.2%) of the sample was in the Robert Campbell box. The cobbler's box contained 12 cases (6.7%) of the sample while the carpenter's box contained 17 cases (9.4%) of the total sample size. Table 12 illustrates mean figures within each of the artifact boxes.

Table 11: Frequencies Across Sample (n=180)

Gender:
- Male = 13.3%
- Female = 30.6%
- No sex = 53.9%

Age:
- Adult = 25.6%
- Child = 10.8%
- No Age = 62.2%

Clothing:
- Outer = 6.1%
- Dress = 4.4%
- Male Clothing = 0.6%
- Shoes = 1.7%
- Buttons = 22.2%
- Beads = 10.6%
- Total Clothing = 45.6%

Adornment:
- Yes = 13.3%
- No = 83.3%

Household items:
- Total household = 26.7%

Occupational:
- Tool = 10.0%
- Supplies = 3.9%
- Product = 1.1%
- Total occupational = 15.0%

Toys:
- Total = 9.4%

Educational:
- Total= 5.0%

Sewing:
- Total = 10.0%

Personal:
- Yes = 17.8%
- No = 80.0%

Manufacture Mode:
- Manufactured = 58.9%
- Homemade = 3.3%
- Unknown = 35.6%

Maker's Mark:
- Yes = 3.3%
- No = 90.6%

Luxury item:
- Yes = 6.7%
- No = 91.1%

Significant[6] figures across the entire sample were that; 13.3% of the items were male and 30.6% female while 53.9% were not gender specific. Adult items comprised 25.6% of the total sample, 15.0% were occupational, 17.8% were personal and 6.7% were luxury items. Most items in the sample generally fell well within the "other" or "no" category. This suggested that most items were not variable specific or that current parameters for determining values within each variable are not yet refined enough for specific identification across the sample.

Table 12 suggests there are significant relationships between gender and items carried with passengers on the steamboats. Historical information is available on the Atchisons and Campbell families. This information shows that these boxes were associated with women and children; it also provided information concerning where they came from and information about their economic status. Archaeological information demonstrated that the cobbler and carpenter

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[6]Any probability smaller than alpha (determined for this study to be between 0.000 and 0.050) is called statistically significant.

Table 12: Means Tables within Boxes

Variable:	Atchison: n=78	Campbell: n=56	Unknown: n=13	Cobbler: n=12	Carpenter: n=17
Gender:[7]					
Male	2.6%	-0-	-0-	41.6%	94.1%
Female	29.4%	42.8%	53.8%	-0-	5.8%
Age:					
Adult	14.1%	19.6%	7.6%	58.3%	94.1%
Child	15.3%	8.9%	-0-	-0-	5.8%
No Age	70.5%	71.4%	92.3%	41.6%	-0-
Clothing:	57.6%	50.0%	61.5%	8.3%	-0-
Adornment:					
Yes	14.4%	12.5%	46.1%	-0-	-0-
Household Total:	57.6%	35.5%	38.4%	-0-	5.8%
Occupational Total:	-0-	-0-	-0-	100.0%	88.2%
Toys:	14.1%	8.9%	-0-	-0-	5.8%
Educational:	-0-	14.2%	7.6%	-0-	-0-
Sewing:	12.8%	10.7%	15.3%	-0-	-0-
Personal:	15.3%	30.3%	15.3%	-0-	5.8%
Manufacture Mode:					
Manufacture	67.9%	46.4%	53.8%	41.6%	88.2%
Homemade	5.1%	1.7%	7.6%	0.0	-0-
Maker's Mar	1.2%	1.7%	-0-	-0-	36.3%
Luxury:	7.6%	10.7%	-0-	-0-	-0-

boxes were largely occupational in nature and probably belonged to men. The combined statistics from the four

[7]Percentages throughout the variable column are based on the total number of artifacts in each box sample that are representative of each artifact category. For example 7.6% of the total number of items in the Atchison box are luxury items.

marked boxes supplied the basis for general hypotheses concerning the Robert Campbell, or unknown box.

For example, both the Atchison box and the Campbell box contained mostly feminine items. The Cobbler and Carpenter boxes had a significant percentage of typically male-specific occupational items. The items found in the Unknown box suggested that it was associated with at least one woman. The age percentage, although low, suggests an adult owner when compared with the high household percentage of 38.4%. The cobbler and carpenter boxes contained predominantly adult, male, and occupational based items, while the Atchison, Campbell, and Unknown boxes displayed a significant percentage of adult and female items, as well as items that were not age specific[8]. Clothing was associated in the 50% or higher range in the feminine boxes.

At first glance it would appear that 8.3% of the items in the cobbler's box were also clothing, however, this

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[8]Examples of items that are not considered age specific include buttons, perfume bottles, beads, lamp chimneys, etc. These are all items that could be used by either adults or children. There is no logical way of assigning specific ownership of such items.

figure is an anomaly due to cross-correlation. For example, one item in the cobbler's box was a leather belt. Belts were classified as outer garments within the clothing variable. The belt, in this artifact assemblage, however, also fell within the occupational variable as supplies. Cobblers in the nineteenth century generally did not produce leather objects other than shoes (Personal Communication, D. A. Saguto, 8/11/95). The belt was well used and the buckle was missing, suggesting that the belt was probably being used as scrap leather.

Other items of consequence within Table 12 included occupational items solely associated with male boxes and sewing and personal items associated with female boxes. The presence of toys in the Atchison box suggested at least one child was represented by the box contents. It was also notable that there were no luxury items associated with occupational boxes, while the Atchison and Campbell boxes had some luxury, or wealth dependent, items.

Several general conclusions can be made based on information in Table 12. The Atchison box represented at

least one adult, probably female, traveling with at least one child. The moderate percentage of luxury items suggests the owners were upper middle class[9].

The Campbell box was associated with at least one adult female. The clothing percentage was comparable to the Atchison box, as were household items. This box displayed high percentages of personal items in comparison with the Atchison box. The higher percentage of luxury items than the Atchison box also may suggest a higher socioeconomic standing.

When comparing the Robert Campbell box with the Atchison and Campbell box; the data suggest that it was associated with at least one female. The clothing percentage was similar to the other feminine boxes as was the household percentage suggesting that the box owner was an adult. This box suggested a female owner of low social

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[9]Lillian Schlissel asserted that the majority of emigrants migrating overland between 1840 and 1870 were made up of "peasant proprietors." They were a class of families that owned land before and would own land again. They were dependant on the land for livelihood and subsistence and represented a moderate or median class structure (Schlissel 1982:11).

class based on the absence of luxury items.

The male-associated boxes presented no surprises from the original hypotheses. Items were dependent on the owner's occupational trade and nothing in these boxes were classified as luxurious. This suggests that these men traveled west with items needed to practice their trade, probably their only monetary means.

Logistic Regression Analysis

Several questions raised concerning interrelationships between variables were answered using logistic regression analysis. When "luxury" was regressed with "personal" as the independent variable, there was a 190% greater probability that "personal" items were "luxury" items (see table 13).

Table 13: Logistic Regression "Luxury" with "Personal"

	n=176		
Variable	**Significance**	**R**[10]	**Exp(B)**[11]
Personal	0.0000	0.4155	2.9109

[10]R compares the overall similarity of two ordinal (or values with an unknown measure) rankings (Thomas 1986:397).

[11]Exp(B) measures the percentage of statistical probability.

When gender was regressed with "age" and "personal," there was a 80% greater chance that adult items were female and 1100% greater chance that "personal" items were female (see table 14).

Table 14: Logistic Regression "Gender" with "Age" and "Personal"

	n=79		
Variable	**Significance**	**R**	**Exp(B)**
Age	0.0000	-0.4012	0.2076
Personal	0.0009	0.3063	12.5736

These results support assumptions made in Table 12. Personal and luxury items were gender specific and both were dependant on age. There was no explanation of the discrepancy between personal and luxury items in the Unknown box except that the sample number was small. The discrepancy would probably disappear with a larger sample.

Conclusion:

The statistical analysis supported most of the archaeological hypotheses concerning the individuals who owned the boxes made before statistics were applied. The Atchison box was represented by an adult woman and at least one child, the Campbell box contained largely feminine and adult artifacts. The unknown, or Robert Campbell, box

displayed characteristics of an adult female, while both cobbler and carpenter boxes were almost exclusively occupational based. Both interpretations are supported by historical information available on some boxes. The Atchison box belonged to the John S. Atchison family. Mary (24), Charles (5), and Emma (4) were on board the *Bertrand* (*Montana Post*, April 22, 1865). John Atchison preceded his family to Montana where he eventually became involved with several banks and was the owner of ATCHISON TRADING POST, that supplied the mining camps. The Campbell box belonged to Annie (19) and Fannie (16) Campbell, two daughters of James B. and Sarah Campbell who moved from St. Louis to Montana in 1862. The young women remained in St. Louis where they attended a Catholic boarding school until they completed their education. This may explain the high frequency of educational items in their belongings. They were on their way to Montana when the *Bertrand* sank. As founding citizens of the territory, they were involved with ranching, politics, and owned or had stock in several supply posts in Montana (Petsche 1974:163). Historical information

supports the archaeological and statistical hypothesis that these two families were of moderate means, and that individuals reflected in the boxes were women and children.

The methods used in this study are replicable if strict consistency is maintained. This analysis can be applied to a larger sample and will provide an opportunity for making general assumptions about the western population as a whole. The difficulties concerning artifact classification encountered in this sample can be overcome by carefully establishing parameters concerning artifact definitions.

X. Conclusions

The goal of studying the material culture of nineteenth-century passengers traveling west on board the steamboats *Arabia* and *Bertrand* was to gain information about the gender and socioeconomic background of individual passengers. This was accomplished with an analysis that included historical research, archaeological observations, and quantitative statistical analysis. The observations formed from a combined research methodology allow the researcher to make general assumptions about emigrant use of steamboat travel based on the failure or fulfillment of research hypotheses.

Findings:

Hypothesis A: Single men and family groups commonly used steamboats as a mechanism for western travel while single or individual women would not make the journey unaccompanied.

The sample used in this study suggested that single men, represented by the cobbler and carpenter, did use steamboat travel as a mechanism for westward movement, as did family units represented by the Atchisons. The Campbell

sisters should be considered a family unit and not single women. The Robert Campbell box probably does not represent an individual traveling on board the *Bertrand*, rather it was a package sent to an individual already in the territory.

Single men traveling on the Missouri River are well documented. Brazier, Upham, Granville, and Moss all mention the presence of single men and family groups in their narratives, although the presence of families does not seem as prevalent in the journals as single men. There are few instances where single woman are reported traveling on steamboats; however, in most of these cases the woman were referred to as "actresses," implying their association with saloons or make-shift theaters (Brazier 1953:33-35).

The trend of single or unaccompanied women rarely traveling west by steamboat is also typical of documentation about the overland journey. Schlissel reported that only two out of sixty-eight journals belonged to single woman making the journey. One was a widow looking to start over and the other was a young woman going to Oregon to become a teacher. The young woman often mentioned in her journal

being isolated by the other woman in the train because she was alone (Schlissel 1982:99-102, 150).

Hypothesis B: Family groups would have a greater frequency of household goods, personal items, female and child items, and luxury items than single males.

Quantitative analysis of the study sample demonstrated the viability of hypothesis B. Statistical analysis suggested that the relationship between woman or family groups corresponds to the presence of children and the high frequency of personal, luxury, and household items. The statistical ratio of household and personal items present in boxes associated with women verses male-only boxes was almost 5 to 1. The difference in the amount of luxury items was even greater. Logistic regression analysis demonstrated that there is a viable relationship between gender and whether an artifact was both a personal items and a luxury item.

Archaeologically and statistically observed data suggested that Hypothesis C: Single men would have a higher frequency of occupational based items associated with their

boxes and fewer personal and household items, is also correct. The lack of household goods and the low frequency of personal items in this sample supported Blee's contention that single men were far more mobile than family units. The two examples in this study represent men who probably depend solely on their trade for their livelihood.

Hypothesis D: Children are more likely to be associated with groups that include a definite female presence rather than an association with just men.

The *Arabia* and *Bertrand* examples in the study support this claim. The two men did not appear to have children travelling with them on the steamboats. The carpenter, may however, have had a child who was left behind as represented by the Frozen Charlotte Doll. This is just one explanation for the presence of the doll. Children represented in the Atchison box journeyed with their mother. No references were found indicating that children traveling on the Missouri River did so without a woman present.

Hypothesis E: A statistical method can be devised to demonstrate gender and socioeconomic differences across an artifact population.

The statistical method used in this study, logistic

regression, allows a researcher to make general assumptions about artifact use based on statistical inference. The method demonstrated that, if an artifact were used by women, there was a statistically significant probability that the artifact was also a personal and a luxury item. The same was viable for male specific artifacts. Tools in this example were male-specific and not personal or luxury items. Statistical analysis also demonstrated a significant relationship between gender and household items, clothing items, adornment, sewing items, and occupational use of artifacts.

This statistical method could not, however, confirm wealth or luxury for a given artifact. The method could only suggest wealth across a comparative sample. An indicator of wealth is irrelevant in a single sample; it only gains relevance as a cultural indicator when compared with measures of wealth in other samples. The variable "luxury" was the most difficult variable in the sample to define. There are no accepted archaeological standards regarding wealth attributes for artifacts. Archaeologists

can only evaluate wealth in terms of a culture or society, in this case steamboat passengers, that is applicable to the study group. When compared with other boxes in the study, the Campbell sisters displayed a higher ratio of "wealth" than the Atchisons, both however, were considerably more wealthy than the cobbler or carpenter. An archaeological and statistical measure of wealth should be used sparingly and with caution.

Conclusion and Recommendations:

Historically the variety of people thought to have traveled west on board steamboats has been limited to the wealthy and to fur trappers or traders. The wealthy were believed to have travelled to the territories as "well to do" cabin passengers while the trappers or tradesmen lounged on the vessel's deck. A survey of steamboat passengers would have demonstrated two distinct classes. Research using personal journals and archaeological evidence examined in this study does not suggest these traditional assumptions are viable.

It is not known exactly how many emigrants utilized

steamboats for westward travel. Certainly more people crossed the continent overland. However, most emigrant journals that mention steamboats, either as a mechanism for travel or just passing them along the way, mention the presence of a few passengers. There probably were some passengers who traveled exclusively as deck passengers, and deck passage was the preferred practice of the American Fur Company trappers. These men, however, were used to traveling and living in the open. When on the river, they traveled in fairly large groups and enjoyed each others merriment (Jackson 1985:3-4). This practice may have been the exception rather than the rule in the upper Missouri mountain trade.

All five boxes used in this study were preserved because they were packed in the holds of the steamboats. Typically, passengers traveling on deck kept their possessions with them on the deck. Hold space was reserved for goods being transported to supply houses and for the cabin passengers who presumably paid more for their passage. The fact that all of these study boxes were found in the

hold suggests individuals represented by these boxes traveled as cabin passengers. This is not surprising for the Campbells or Atchisons; but, tradesmen should not have been able to afford cabin passage. Perhaps the answer to this question lies in the fact that what has been accepted for the upper Missouri, is fictional.

A careful examination of Missouri River steamboat travel journals rarely mentions deck passengers. Journals imply that the number of passengers was few and that due to the long nature of the journey, the passengers had an opportunity to get to know each other. The journal edited by Brazier mentions passengers sitting at dining room tables playing cards or tiddlywinks to pass the time. The passengers would work together with the crew to help free the boat from snags or sandbars and the men on board the vessel would hunt and gather berries during wood stops. These activities suggest a homogeneous population of travelers rather than strict division by class. Regardless of wealth (presumably some passengers were more wealthy than others), all steamboat's that were not full or crowded may

have had only cabin passengers. This may help explain why a cobbler and carpenter box would be in the hold of two steamers almost a decade apart.

This study has suggested some possibilities about the variety of individuals who travelled west via the upper Missouri River. It should be noted, however, that the study only examined five examples. Although the *Arabia* and *Bertrand* are the only steamboats salvaged from this area, the results and conclusions of this study should be carefully examined within a larger population. The statistical methods used to examine steamboat passengers should be applied to other historic sites. For example, logistic regression can be used on a large sample of sites with known associations. Organized family units such as homesteads, or homes in frontier communities, can be compared with male-only households in mining camps and homesteads or frontier community tradesmen. Examining the statistical applications from this study on a larger data base will help to verify the validity of logistic regression as a means for evaluating artifact use. Presumably these

boxes only represent a portion of the personal belongings of the passengers. Other items that were more important or which were used repeatedly would have been with the passengers and are not, therefore, represented in the collection. A more comprehensive investigation of the statistical application may find several important differences.

Both the *Arabia* and *Bertrand* offer many other possibilities for archaeological investigation. Both of vessels should be considered unique and therefore historically significant. Within these two collections is a wealth of information about American emigrant travel, not just based on the items lost by passengers but in the items being shipped to emigrants who have already settled. The mining and settler stores provide information about the economic success of the region, the types of items available for everyday life, and items that were needed. The material culture represented by these two vessels provides a glimpse into the experiences and everyday life of our not so recent past.

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Appendix A:
Steamboat Arrivals at Fort Benton 1860-1874

1860	July 2	*Chippewa*
	July 2	*Key West*
1862	June 17	*Emilie*
	June 17	*Shreveport*
	June 20	*Key West no. 2*
	June 20	*Spread Eagle*
1863	June 20	*Shreveport*
		Alone
1864	June 10	*Benton*
	June 21	*Yellowstone*
	July 9	*Effie Deans*
	July 14	*Cutter*
1865	May nd	*Yellowstone*
	May nd	*Deer Lodge*
	June nd	*Deer Lodge*
	June nd	*Deer Lodge*
	June nd	*Effie Deans*
	June 25	*St. Johns*
	June 29	*Twilight*
	July 21	*Deer Lodge*
Also:		
	nd	*Benton*
	nd	*General Grant*
	nd	*Kate Kearney*
	nd	*Lillie Martin*
	nd	*Oronacke*
	nd	*Fanny Ogden*
	nd	*David Watts*
	nd	*Hattie May*
	nd	*Cutter*
	nd	*Sam Gaty*
	nd	*Prarie State*
	nd	*Converse*
	nd	*Big Horn*
1866	May 18	*St. Johns*
	May 18	*Deer Lodge*
	May 20	*Cora*
	May 22	*Waverly*
	May 31	*W. J. Lewis*
	June 1	*Mollie Dozier*
	June 5	*Marcella*
	June 5	*Ontario*
	June 6	*Big Horn,*
	June 8	*Walter B. Dance*
	June 9	*Iron City*
	June 11	*Amelia Poe*
	June 11	*Peter Balen*
	June 13	*Miner*
	June 13	*Only Chance*
	June 15	*Tacony*
	June 15	*Favorite*
	June 15	*Gold Finch*
	June 17	*Luella*
	June 27	*Helena*
	June 28	*Tom Stevens*
	June 29	*David Watts*
	June 29	*Lillie Martin*
	June 30	*Agnes*
	July 1	*Sunset*
	July 4	*Huntsville*
	July 11	*Luella*, second trip from Fort Union.
	July 12	*Nellie Rogers*
	July 13	*Marion*, wrecked on return trip.
	July 13	*Deer Lodge*, second trip from St. Louis.
	July 19	*Gallatin*
1867	May	*Waverly*
	May nd	*Miner*
	June 1	*Only Chance*
	June 3	*Deer Lodge*
	June 3	*Walter B. Dance*
	June 7	*Gallatin*
	June 9	*Amelia Poe*
	June 10	*Mountaineer*
	June 10	*St. Johns*
	June 11	*Yorktown*
	June 12	*Nile*
	June 13	*Ben Johnson*
	June 14	*Huntsville*

June 16 *Ida Stockdale*
June 20 *Octavia*
June 20 *Guidon*
June 26 *Benton*
June 29 *Ida Stockdale*
June 29 *Amaranth*
July 1 *G. A. Thompson*
July 3 *Antelope*
July 4 *Abeona*
July 5 *Agnes*
July 5 *Tacony*
July 6 *Jenny Brown*
July 8 *Luella*
July 8 *Big Horn*
July 10 *Tom Stevens*
July 11 *Lady Grace*
July 12 *Lillie*
July 14 *Little Rock*
July 16 *Ida Fulton*
July 20 *Nymph no. 2*
July 23 *Viola Belle*
July 28 *Richmond*
Aug. 29 *Only Chance*
Sept 6 *Zephyr*
nd *Imperial* (Cow Island)
nd *Huntsville* (Cow Island)

1868 May 15 *Success*
May 15 *Cora*
May 19 *Deer Lodge*
May 21 *Nile*
May 25 *Miner*
May 25 *Only Chance*
May 25 *Sallie*
May 28 *St. Luke*
May 30 *Henry Adkins*
May 30 *Mountaineer*
May 31 *Octavia*
May 31 *Ida Stockdale*
May 31 *Peninah*
June 1 *Antelope*
June 1 *Huntsville*
June 2 *Bertha*
June 8 *Lacon*
June 8 *Guidon*
June 13 *Benton*
June 14 *Yorktown*
June 15 *Importer*
June 16 *Ida Reese*
June 17 *Andrew Ackley*
June 19 *North Alabama*
June 20 *Fanny Barker*
June 23 *Hiram Woods*
June 26 *Viola Belle*
June 27 *Columbia*
June 28 *Urilda*
July 4 *Deer Lodge*
July 7 *Tom Stevens*
July 7 *Silver Lake no. 4*
July 23 *Andrew Ackley*
July 26 *Leni Leoti*
Aug. 4 *Success*
Aug. nd *Andrew Ackley*

1869 May 19 *Deer Lodge*
May 27 *Importer*
May 27 *Nile*
May 30 *Ida Reese No. 2*
May 31 *Cora*
June 1 *Fanny Barker*
June 4 *North Alabama*
June 4 *Silver Bow*
June 8 *Peninah*
June 8 *Andrew Ackley*
June 8 *Only Chance*
June 8 *Big Horn*
June 10 *Viola Belle*
June 11 *Sallie*
June 11 *Mountaineer*
June 11 *Huntsville*
June 12 *H. M. Shreve*
June 14 *Miner*
June 15 *Lacon*
June 15 *Utah*
June 16 *Silver Lake No. 4*
June 18 *Peter Balen*
June 20 *Colossal*
June 21 *Bertha*

1870 May 26 *Nick Wall*
May 29 *Ida Reese No. 2*
June 1 *Deer Lodge*
June 9 *Viola Belle*
June 17 *Salle*

June 18 *Bertha*
June 19 *Peninah*
June 20 *Ida Stockdale*

June 4 *Key West*
June 22 *Josephine*

1871 May 13 *Ida Reese*
May 25 *Ida Stockdale*
May 29 *Far West*
June 2 *Nellie Peck*
June 18 *Peninah*
June 29 *Flirt*

Vessels that only made it as far as Cow Island, 1871:

nd *Miner*
nd *Silver Lake*
nd *Andrew Ackley*
nd *Nellie Peck*
nd *Flirt* (to Ft. Peck)

1872 May 18 *Nellie Peck*
May 24 *Far West*
June 1 *E. H. Durfee*
June 9 *Esperanza*
June 11 *Fontenelle*
June 11 *Sioux City*
June 12 *Western*
June 15 *Mary McDonald*
June 30 *Far West* Quickest trip on record from Sioux City - 17 days, 20hrs.
June 30 *Nellie Peck*
June 30 *Katie P. Kountz*
July 23 *Sioux City*
Aug. 7 *Sioux City* from Buford

1873 May 22 *Far West*
May 23 *Nellie Peck*
June 1 *Josephine*
June 9 *E. H. Durfee*
June 28 *De Smet*
July 5 *Katie P. Kountz*
July 13 *Western*

1874 May 21 *Fontenelle*
May 28 *Western*
May 30 *Nellie Peck*
June 1 *Josephine*

The above information abstracted from *Contributions to the Historical Society of Montana*, vol. 1., Presented by W. A. Clark, US Senator, 1902.

Appendix B

Bertrand Box 74 (Atchison Family)

Catalog #:	Artifact Description:
62	Fabric scraps
63	Knitted wool cap
66	Silk shawl
67	Boys trousers
68	Strip of black silk
69	Wool scraps
72	Alphabet blocks
107	Blocks: School
330	Blocks (Alphabet)
331	Blocks (Alphabet)
332	Blocks (Alphabet)
333	Blocks (Alphabet)
334	Blocks (Alphabet)
335	Blocks (Alphabet)
449	Pony cart (toy)
507	Nails
508	Nails
509	Nails
581	Steel strap and nails
704	Umbrella tip
715	Wool yarn
803	Button, wood (1)
874	Hooks and eyes, brass
876	Hook (fastener), brass
877	Buttons, brass (2)
881	Straight pins, brass (2)
899	Box (to blocks)
900	Box pieces
901	Veneer strips
982	Whistle
922	Buttons, textile (6)
974	Leather boot extender
1017	Beads, glass (132)
1018	Beads, glass (23)
1019	Beads, glass (75)
1020	Beads, glass (12)
1021	Beads, glass (10)
1022	Beads, glass (4)
1023	Beads, glass (4)
1646	Lamp chimneys (4)
1647	Lamp chimneys (8)
1789	Planation Bitters
2870	Rug runner
2924	Dress fragments (plaid)
2925	Bodice and skirt frag. (brown)
3158	Wool fragments
3159	Ribbons (silk & velvet)
3160	Fur wrap
3166	Beads
3294	Umbrella covering
3295	Tablecloth/ fabric bolt
3296	Woman's jacket/ smock
3297	Cloth fragments
3298	Boys frock coat
3763	Buttons, white china (13)
3764	Hooks (fasteners), brass (2)
3766	Buttons, china (2)
3767	Button, china (1)
4063	Parasol & parts
4130	Beads, glass seed (325)
4415	Ladies boot
4888	White glass lamp part
4889	Unident. white glass
4891	Assorted clock parts
4761	Leather fragments
4762	Metal fragments
4765	Corks
4890	clock face frag.
4973	Cloth fragments
5216	Button, ceramic (1)
5244	Buttons, textile (2)
5249	Buttons, glass (9)

5254	Straight pins, steel (60)
5255	Straight pins, steel (2)
5287	Crochet frag?
5292	Buttons, ceramic (36)
5293	Button, ceramic (1)
5294	Button, ceramic (1)
5295	Button, ceramic (1)
5296	Button, ceramic (1)
5297	Button, ceramic (1)
5298	Button, ceramic & brass (1)
5302	Buttons, glass & brass (10)
5339	Buttons, brass (25)
5340	Brass shoe eyelets (13)
5343	Buttons, textile (2)
5344	Buttons, textile (21)
5349	Beadwork fragments
5351	Beads, glass (103)
5352	Cloves (3)
5353	Shoestring tips
5354	Straight pins, brass (2)
5355	Straight pins, brass (2)
5356	Straight pins, brass (3)
5358	Hooks and eyes, iron (7)
5359	Hooks and eyes, brass (4)
5360	Straight pin, brass (1)
5361	Straight pins, brass (2)
5362	Straight pin, brass (1)

*Catalog numbers 4888, 4889 (white glass fragments), and 4891, 4890 (clock pieces) were assigned accession and catalog numbers but there were no records of these items in the collection.

Appendix C

Bertrand Box EPC-8 (Campbell Sisters)

Catalog #:	Artifact Description:
87	Pair of shoes
142	Black laquer box
144	Book back binding "MUSIC"
146	Bible cover
145	Reed mat
147	Bottom tray (assoc. with jewelry box)
148	Jewelry box
149	Metal strips and loose fastners from jewelry box
150	Black board
152	Braid, thread, ribbon
153	Tacks, jewelry box (20)
159	Black net lace fragments
353	Buttons, white china (66)
354	Buttons, turquoise (22)
436	Peach pits
454	Wood fragments from jewelry box top tray
482	Book back binding "HERBARIUM"
483	Book back binding
484	Book back binding "MITCHELL'S SCHOOL GEOGRAPHY"
485	Book cover
700	Nails from black laquer box (7)
704	Unbrella handle? tip
707	Drawer nob
710	Toiltry vial & cork (1)
711	Toiletry vials & corks (2)
712	Toiletry vials & corks (17)
714	Toilerty vial & cork (1)
725	Hat pins, brass (2)
738	Artist pastels (sticks)
741	Leather packet
744	Hinges from black laquer box
745	Hinges from jewlery box
746	Lock from black laquer box
747	Lock from jewlery box
875	Wood fragments from jewelry box
906	Laquer fragments from black Chinese box
933	Buttons, textile (21)
948	Button, ceramic (1)
991	Glass fragments
997	Nail fragments from jewelry box
998	Screws from jewelry box
999	Nails from black Chinese box (42)
1041	Bead, glass (1)
1042	Beads, glass (39)
1043	Beads, glass (27)
1161	Watermellon seeds
1197	Cape, silk
1206	Straight pins, brass (2)
1211	Wood fragments
1222	Nails from black Chinese box (30)
1223	Screws from black Chinese box (2)
1843	World map
2846	Dress (2 school uniform)
2906	Sock fragments

2910	Buttons (19)
2911	Beads, glass (64)
2912	Mitt, girls
2913	Cloth (wool, red floral on beige background)
2914	Tassles (2 associated with 2913)
2915	Wrist Warmer (knitted)
2916	Material (petit point pieces)
2917	Bow (blue, assoc. with school uniform)
2918	Cape (black, silk)
2919	Buttons, silk (19)
2920	Buttons, silk (6)
2921	Button (1)
2922	Hooks & eyes, brass (36)
2923	Straight pins, brass (65)
2965	Dress/coat, silk
3339	Fringe, thread, yarn
3698	Child's gloves (3: one small, one larger pair)
3720	Buttons, wood (2)
3915	Chinese box (green)
4033	Glass heart
4203	Buttons, glass (1)
4204	Button, glass (1)
4295	Nail
4308	eye (fastner) (1)
4678	Leather (misc. pieces)
4689	Spool of elastic (frag)
4690	Corset stays
4763	Picture frame & glass

Peach pits, picture frames, and six pairs of ladies shoes were associated with this box but are missing catalog numbers.

Appendix D

Bertrand MSC-128 (Robert Campbell)

Catalog #:	Artifact Description:
784	Buttons, ceramic (7)
1024	Beads, glass (27)
1025	Perforated disk (bead?) (1)
1026	Beads, glass (11)
1027	Beads, glass (7)
1028	Beads, glass (5)
3170	Ribbon fragments, silk
3171	Sock fragments (6)
3492	Wool flannel fragments
3493	Striped sock fragments
3725	Felt cross
4043	Brush backs (2)
4648	Feathers from duster, missing
4669	Straw, missing
4670	Painted wood, missing
4754	Book cover bindings, missing
5381	Wood strips
5406	Misc. leather, missing
****	Wooden spools
****	Wooden spools
****	Metal bobbins

There were two sets of box fragments (accession # 2055, 2952) discarded in 1972; they were probably the original container. This box also contained two sets of wooden spools (accession # 2930, 2935) and a set of metal bobbins (accession # 2930). These items were never given catalog numbers and can not be located although they were recorded in the box notes. These items were considered important for the computer analysis and were included.

Appendix E

Bertrand FSC-234 Cobbler's Box

Catalog #:	Artifact Description:
883	Folding rule section
2671	Billfold, leather
2958	Dress boots
3949	Leather working tools (7)
3986	Leather bible cover
3992	Shoe repair parts
4069	Riding boots
5306	Farmers bundles, shoes, leather repair parts
5307	Belt, leather
5308	Scrap leather and shoe repair items
5309	Book covers and binding
****	Cobblers tool case

In 1972 several uncatalogged box fragments and barrel staves were discarded. There was no information available on the size of the box but the barrel measured 16 1/2" diameter x 28" long. Field notes indicated the above items were packed in the barrel. There was also an uncatalogged cobblers tool case discarded in 1972. No information was available on this item either. All of these items were included in the computer analysis.

Appendix F

Arabia Carpenter's Box

Catalog #:	Artifact Description:
A2065P	Sticking knife
A2127P	Draw knife
A2129P	Whetstone
A2134P	Frozen Charlotte doll, ceramic
A2160P	Screw arm
A2161P	2" paring chisel
A2162P	Large sawmill dog
A2163P	Small sawmill dog
A2165P	Carpenter's wrench
A2166P	Lever saw set
A2167P	1/4" London-pattern sash mortise chisel
A2168P	3/8" mortise chisel
A2169P	1 7/8" forming chisel
A2170P	1 3/8" paring chisel
A2171P	Hand held saw
A2172P	1" bevel-edge paring chisel or gouge
******	Misc. pistol parts

Appendix G

Notes Concerning Artifact Placement within Variables and Values

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Gender: Items considered as gender specific include clothing, beads, ribbons parasols, glass buttons (based on photographic research), perfume, hat pins, tools, dolls, and glass heart. Items that were not labeled gender specific included toys such as blocks, marbles, and tin toys, educational items, generic buttons, household items such as linens, carpets, medicinal items and illumination devices.

Adornment: Items labeled as adornment include beads, ribbons, lace, and hat pins.

Household: Household items include decorative items (glass heart, clock), books, ritual items (bibles, felt cross), illumination devices, linens, carpets, medicinal items, jewelry box, and seeds.

Sewing: Sewing items include straight pins, bobbins, and spools.

Personal: Items labeled as personal include clothing items, ritual items, school slate (the owner carved her name in it), hat pins, glass heart, parasols, perfume, hair brushes, doll. Items not labeled personal include toys, tools, household items such as carpets, lamps, linens, and educational items.

Age: Age specific items include clothing, medicinal items, toys, educational items, and tools.