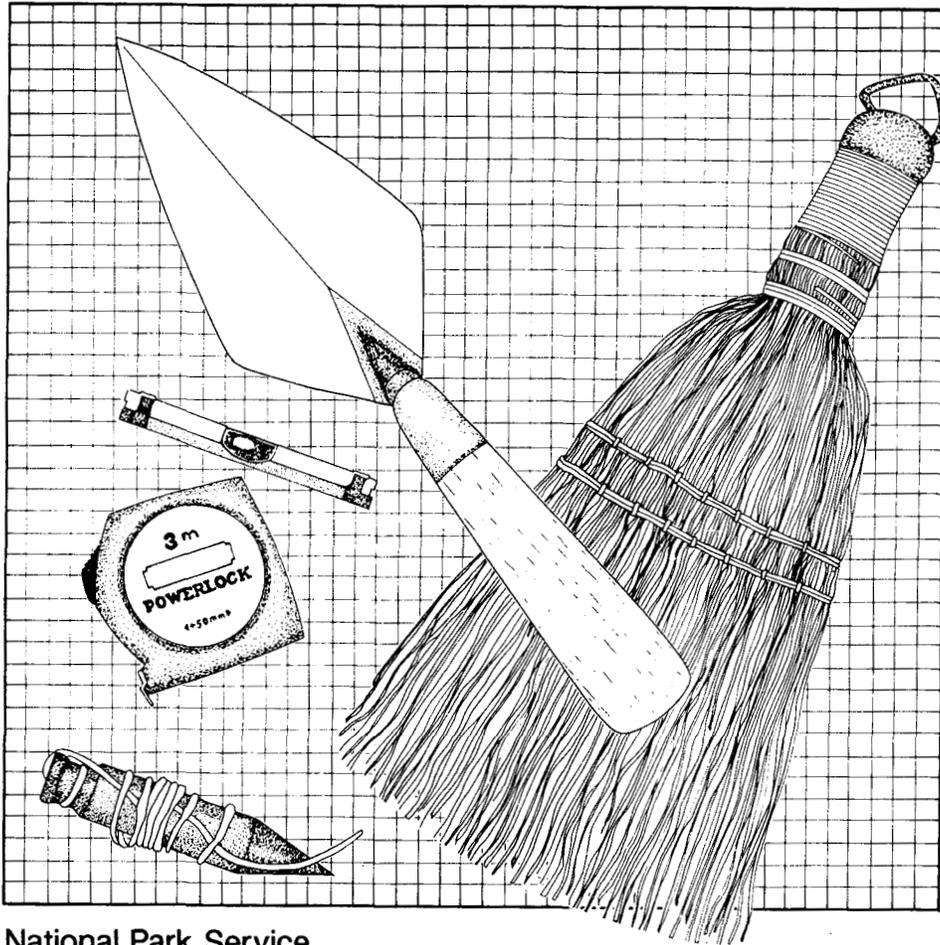


THE 1983 ARCHEOLOGICAL EXCAVATIONS
AT THE RAY HOUSE,
WILSON'S CREEK NATIONAL BATTLEFIELD,
MISSOURI



National Park Service
Midwest Archeological Center

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By
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ABSTRACT

The historic Ray House was an integral part of the Civil War Battle of Wilson's Creek in southwestern Missouri and served as the Confederate field hospital during the conflict. In order to facilitate the restoration of the structure for service as an interpretative facility for the battle, archeological excavations were undertaken during December, 1983.

Deposition of refuse, principally under the piered portions of the House, appears to have been random. Furthermore, archeological investigation revealed that vertical displacement of cultural materials, due in part to annual freeze-thaw weather cycles, had blurred temporal relationships within the strata. Despite these problems, the collection does offer a brief look at some of the facets of life at the Ray House, obtainable through no other medium.

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INTRODUCTION

The Wilson's Creek National Battlefield, which lies some 10 miles southwest of Springfield and 180 miles southeast of Kansas City, was created by an act of Congress on April 22, 1960. It commemorates one of the earliest scenes of conflict in the Civil War—a contest which was pivotal to the retention of Missouri in the Union camp. Although the battle was technically a Confederate victory, the advantage was not pressed and the state was lost by the South through default.

The Ray House (built circa 1852) (Figure 1) is the oldest extant structure in the Park and was occupied on a continuous basis until the fall of 1935 (Bearss 1968:38, 86). Architecturally, it is a variant of the "Hall-and-Parlor" British folk form which, when expanded by a front porch and a rearward addition, became the dominant "pre-railroad" vernacular housing over much of the southeastern United States (McAlester and McAlester 1986:94). The House and the Ray family were an integral part of the historic engagement which was staged at the farmstead on the morning of August 10, 1861. The dwelling served as a field hospital for the Confederates. The body of Union Brigadier General Nathaniel Lyon was brought to the east front room some hours after he fell to Rebel fire on Bloody Hill (Bearss 1985:116).

PREVIOUS INVESTIGATIONS

There have been three other studies treating the history or archeology of the Ray House and/or its ancillary buildings. One of these, the historic structures report entitled *The Ray House*, was completed by Edwin C. Bearss in 1968 (Bearss 1968). He provides a critical history of the House and, as they relate to the Park theme, of the members of the Steele and Ray families. His (1985) detailed chronicle of the Battle of Wilson's Creek helps to define the importance of the House and the role its inhabitants played on that fateful summer day.

In 1975, Robert T. Bray surveyed and evaluated the archeological potential of the nonextant ancillary structures and use areas adjoining the Ray House (Bray 1975). In 1984, Susan M. Monk conducted additional archeological work at the House. Her report of archeological tests at the Ray House (Monk 1985) includes notations on the native flora and fauna, the general physiographic affiliations of the Park, and additional historical data which have not been included in this report. Her excavations were focused around the exterior foundations of the east and west House walls, the east and west margins of the front porch, and the southwest portion of the back porch.

PROJECT OBJECTIVES AND METHODS

The 1983 archeological investigations at the Ray House (December 1 through 16) were undertaken by Archeologists Jack H. Ray and Christopher H. Schoen, with assistance from Museum Aids John Northrip and Colleen Vaughn. The excavations were designed to facilitate the stabilization of the Ray House, and to document any architectural manifestations which would accommodate restoration. This paper is the final report on those excavations.

A permanent datum was established under the sill base in the center of the doorway between Rooms 2 and 3. The grid system was drawn consistent with those of previous archeological investigations at the site; i.e., the vista directly in front of the front porch was designated north (approximately 45 degrees west of magnetic north). Thus, Rooms 2, 3, and 4 form the long north-south axis of the House, while Rooms 1 and 2 form the short east-west axis (Figure 2). The objectives of the project, and the approaches used to reach them, are listed in order of importance.

1. Map the remnants of a fireplace located between Room 3 and Room 4 and conduct limited excavations to determine if it had a double opening to serve both rooms, or a single opening to serve only one.
2. Map and excavate those areas in Rooms 3 and 4 to be disturbed by construction of footings for support of floor joists.
3. Obtain a representative sample of the numerous artifacts scattered between the floor joists in Rooms 3 and 4.
4. Excavate around the rotted portions of those sills to be replaced under Rooms 3 and 4.
5. Excavate in front of original outside doorways (to be reconstructed) of Rooms 3 and 4.
6. Investigate the west and north walls of the cellar under Rooms 1 and 2 (to be stabilized) for possible cultural material.

Objectives 1 and 2 required a north-south 1-m-wide transect grid through the center of Rooms 3 and 4 (Figure 3). The transect was divided into six 1-m x 1-m units and one truncated 0.7-m x 1-m unit, as well as two units over the remnants of the fireplace that were expanded to 1.5 m x 1.5 m. Units 1-5 were in Room 3 and 6-9 in Room 4. Proposed locations for joist support footers and the investigation of the razed fireplace necessitated the excavation of seven of the nine units. It was not necessary to open Units 2 and 8.

CULTURAL INVENTORY

The cultural materials from the Ray House excavations were provenienced and have been entered in the Automated National Catalog System (ANCS). For purposes of this paper they have been separated into the following functional categories: food and food-related artifacts, nonculinary fauna, alcoholic beverage bottles and closures, medicinal artifacts, personal use and grooming items, clothing and accouterments, exchange, domestic devices and furnishings, leisure and sport items, toys, tools and machine parts, building materials and hardware, horse tack, and unidentified artifacts.

The inventory of prehistoric artifacts is discussed under tools. Historical architectural data recorded during the course of the project is discussed in the summary section.

Food and Food-Related Artifacts

The artifacts used for the preservation, storage, preparation, and serving of comestibles constitute a significant part of the Ray House inventory. These cultural materials, along with seeds, culinary bone, and other food remains which have survived in the archeological record, provide some insight into the lives of the people who discarded them.

Home Preserving Jars and Glasses

There are 31 fragments of Mason jar parts in the collection. They include sherds from four different jars, seven unembossed and three embossed Boyd opal liners, and parts of four tabbed red rubber gaskets. Lewis R. Boyd received patent numbers 88,439 (March 30, 1869) and 89,845 (May 11, 1869) for a glass disk designed to isolate the zinc fruit jar lid, with its propensity to impart a metallic taste, from the foods preserved in the Mason jar. The opal (glass) liner is credited with saving the Mason jar from the inroads made by the Hero Glass Works and the Cohansey Glass Manufacturing Company that were capitalizing on an all-glass lid (Toulouse 1969a:92). The zinc lid and opal liner are no longer being produced.

All four of the gaskets are tabbed. On December 27, 1864, patent number 45,601 was issued to John F. Griffin of New York City for the tab (Toulouse 1969a:116). At first glance such a modification may seem insignificant. However, with a simple pull of the tab the hermetic seal could be broken, and for the first time since the invention of the Mason jar, it could be opened without the use of tools. The pull tab proved to be such an important innovation that it remains a feature on Mason jar gaskets over a century after it was first offered to the consumer. The pull tab gasket serves the dwindling number of homemakers who still cling to the zinc/opal closure. There has been one minor "improvement" made to Mr. Griffin's venerable tab during the current decade—it is scored to induce the ring to break when the tab is pulled. Philosophically,

the Mason jar gasket is now as "progressive" as the "no deposit no return" bottle, the disposable razor, and the paper diaper.

There is a glass fruit jar base, heel, and a part of the body which was blown in a cup bottom mold. It is basally embossed "PAT NOV 26 67/448." The vertical portion of the second "4" in "448" forms a part of a tapered baton or scepter-like symbol with a large orb on the proximal end. The date refers to design patent number D2,840 granted to Salmon B. Rowley for a Hero Fruit Jar Company container. The design consisted of "rounding" the shoulder to ensure a structural integrity which had been sacrificed in the abrupt angle configuration adopted by the shoulder-seal Mason jar. The embossed patent date was not always exclusive to Hero jars of that configuration, however (Toulouse 1969a:37, 91).

Finish elements include a threaded ground lip (suggesting a fabrication date no later than circa 1920) (Toulouse 1969a:103) and fifteen lids from "lightning" closure jars. The original design of the toggle closure, trademarked as the "lightning," was patented on January 5, 1875, by Charles de Quillfeldt of New York City and applied to beverage bottles. Mr. de Quillfeldt was reputed to have been granted a second patent on July 5, 1877, for a wide-mouth "lightning" which was to be used as a fruit jar seal (Toulouse 1969a:126). The absence of gas inclusions intimates a fabrication date after World War I for the "lightning" lids.

Two continuous thread (post-1924) finishes (Lief 1965:27) are included in the collection. One of the two was once part of a package which held a commercially prepared food. The other (complete with two-piece lid) appears to have been a part of a Mason home canning jar. Circa 1903, Alexander Hewitt Kerr began to market a home canning jar closure for his new "Economy" fruit jar. The cap consisted of a flanged disk with a gasket which softened as it was heated. During processing, the disk was held in place by a spring clip. In 1915, Kerr was issued a patent for a screw band which adapted the cap to the Mason jar. This innovative new sealing system found little favor in the marketplace as long as the opal-lined zinc cap and rubber gasket closure was readily available. Only the scarcity of zinc, which prevented the manufacture of the old Mason/Boyd lids immediately following World War II, provided the initial momentum needed to reintroduce the two-piece Kerr closure. Today, the two-piece disposable Kerr metal lid and re-usable screw-band holds a virtual monopoly in home canning closure sales (Toulouse 1969a:95).

Sugar was one of two commodities which were of primary importance during the nineteenth century in preserving foods for future consumption without benefit of hermetic sealing. It is an ingredient in sweet pickle recipes for curing meats. During the process of curing, sugar improves the texture, color, and flavor as well (Ashbrook 1955:199). Excess fruits, which could not be consumed while fresh, might be "candied" with sugar or processed into jellies. A long shelf life could be expected when the container was sealed with melted paraffin, oiled paper, or a lid to retard evaporation.

Tumblers (with flanged, tin-plated friction lids) designed especially for "putting by" jelly have been in use since at least as early as 1859 (M'Kee and Brothers 1981:9). This collection includes seven incomplete jelly glasses, identified as such by the unique rim shape which was designed to accommodate the friction lid. All of the containers, except one with panels on the interior surface, are plain. A paneled, fluted, or "turbaned" glass interior molded the contents into a pleasing form for serving. Just when mold-type jelly glasses were first marketed is not clear. The M'Kee catalog lists fluted jelly glasses for sale, but does not illustrate them; so the embossments might have been on either surface. The 1895 Montgomery Ward catalog (Montgomery Ward & Co. 1969:542) offered a single variety of plain jelly glass intended for storage.

Commercially Processed Food Jars

The appeal of the glass bottle to both the processor and the consumer of commercial foods continues, even though ferrous containers are stronger and cheaper to produce and transport. Traditionally, a number of products such as condiments, pickles, preserves, and extracts have been marketed in glass, and glass is often used to display gourmet foods to advantage.

Certain bottle shapes have been used interchangeably by pharmaceutical houses, food processors, and at times by manufacturers of toiletries. Quite often they defy categorization, without supporting embossments or labels. Those exclusively food-related bottles in the Ray House collection include a Chicago Cylinder Olive (Putnam 1965:205) and five-paneled extracts. The Chicago Cylinder Olive is an example of early machine fabrication. The base bears a valve mark.

Even with near-complete embossing, satisfactory identification is often elusive. Such is the case with a three-panel extract bottle of which some two-thirds is extant. Fragments of the bottle were retrieved from three proveniences within Room 3 as widely separated as 50 vertical cm. The panels are horizontally embossed. The obverse panel is as follows: "...EWSONS TRIPLE/...A(?)VORING EXTRACT." The right side panel is so lightly embossed that it is essentially illegible on the bottle; however, it appears to read: "...AL(?)E(?)W...ON & CO." The left side panel reads: "...A(?)CTURERS." A portion of the base, heel, and body of another bottle may have held a product of the same company. It, too, is a three-panel bottle (although of aqua glass) and the obverse bears the characters "...CT" in the same position as those on the bottle just discussed.

A Tall Ball Neck Panel (Putnam 1965:47) fabricated in 1932 by the Owens Illinois Glass Company (Toulouse 1971:403), may have held a flavoring extract. The bottle, of colorless glass, exhibits the distinct Owens scar (Toulouse 1969b:582-583) on the base and is complete with a ferrous metal, continuous thread (Lief 1965:26-29) lid.

Another sherd, with a yellowish tint, is from an extract bottle. It is embossed "...RACTS." There were two lines of characters above the one just described, but not enough remained for legibility.

An incomplete side panel in transparent glass with the embossment "... TT." may have been a part of a Burnett's flavoring bottle. Joseph Burnett of Boston started business as a wholesaler of flavoring extracts circa 1850 (Wilson and Wilson 1971:109) and was still flourishing nationwide at the turn of the century, with the giant Cutting & Co. (the precursor of Del Monte) as their west coast distributor (Zumwalt 1980:63).

A base with a heel and body fragment still intact appears to have been part of a package for a commercially prepared food. The sherd is ringed in the manner of pepper sauce bottles. This bottle (or jar) originally measured three inches in diameter. The base is unembossed.

Tin Food Containers

Tin cans, though poorly represented, were present in some variety. One is a 1-lb, lithographed coffee can with a missing lid. In 1903, according to Swedberg and Swedberg (1985:26), Hills Brothers became the first company to market coffee in vacuum-packed cans. Several small black letters ("...N.../NH/...A...") are legible on the reverse side of the Ray House can, while four large letters in white ("...PICK...") upon a red and white plaid, or tartan, background are positioned near the top margin on the obverse. The can may have contained Pickwick brand coffee (a name which may have derived from Victorian author Charles Dickens' fictitious Mr. Pickwick, the simple, goodhearted tourist and hero of *The Pickwick Papers*). Swedberg and Swedberg (1985:27, 36, 42) illustrate the fronts of Pickwick brand coffee cans but, unfortunately, say nothing about them. There are slight design differences between the Swedbergs' photographs (in black and white) and the Ray House artifact. The name "Pickwick" may have been executed in red characters and is slightly arced on a plaid background, while the letters on the excavated can are in white, as previously mentioned, and are on a single plane. The container utilized the key-wind, scored-ribbon opener which was introduced in 1885 (Rock 1980:14). The key and scored ribbon was the standard for coffee cans from 1926 to 1963, when the tear-out top with separate plastic cover (an innovation of the previous year) began to replace it (Rock 1980:21, 24). The base of this artifact has been forced into a convex configuration.

There are two complete Calumet baking powder cans in the collection. Calumet Baking Powder was developed in 1889 by W.M. Wright of Chicago. The word "calumet," which symbolizes friendliness, is the name the French gave to the Indian peace pipe offered to Pere Marquette in 1675 when he explored the territory which now encompasses the city of Chicago. Calumet Baking Powder became a part of General Foods in 1928. One of the cans is of pound size, with the cap embossed in bas relief

"CALUMET/BAKING POWDER/1 lb/ABSOLUTELY PURE." Embossed friction caps were in use by Calumet between 1918 and 1929. The other can, which is of half-pound size, is lidless and devoid of embossments; however, it does bear the remnants of a paper label on which the word "POWDER" is still legible. The lettering is white in black outline on a red field. Labels of that description were printed from 1932 through 1937. There is a separate, heavily oxidized lid measuring 2 1/8 in, which may or may not have belonged with this can (Dee Klarich, Manager of Consumer Communications for General Foods, personal communication, 1987).

In the absence of labels and embossments, the information which a tin can might provide is often limited. However, certain types of foods have been traditionally marketed in canisters of particular configurations and measurements. Such configurations and measurements can be used for content identification. This was unequivocally true of condensed and evaporated milk containers. In 1885, John B. Meyenberg of the Helvetia Milk Condensing Company of Highland, Illinois, designed the condensed milk can with flush-profile cap and base and with a single centralized, solder-sealed, "match-stick" filler-hole (Rock 1980:13). Evaporated milk, which was first canned in the Meyenberg container on June 25, 1885 (Rock 1983:3), was still to be found in the same antiquated package on the grocers' shelves as recently as 1986. It was truly a relic of a different age.

The viscosities of sweetened condensed milk and evaporated milk are quite different. Both products are reduced through heat, but the viscosity of condensed milk (similar to that of canned puddings) requires a large opening for extraction, while evaporated milk, though thicker than fresh milk, flows freely through an aperture as small as an ice pick perforation or knife blade puncture. The Ray House collection includes one can, measuring 2 1/2 in by 2 1/2 in, which had contained evaporated milk. It was opened by a knife blade puncture along the perimeter of the can top and another, smaller "breather" hole, pierced slightly off-center. The dimensions of this can attest a pre-1934 fabrication date (Fontana and Greenleaf 1962:75).

A number of can fragments were collected on which oxidization was so advanced that the level of technology used in fabrication could not be determined. It was possible to calculate minimum numbers using estimated lid diameters, however. Standardized can sizes, with few exceptions, are defined by diameter and height (Rock 1989; Teague 1980). Since only one of these measurements was possible on this group of artifacts, only a suggestion of size was possible. One of the lids exhibits a flange or "skirt" which might have been from an evaporated milk can. Its 3-in diameter measures the same as the #1 Tall Milk. The other can fragments suggest a #2 1/2 "sanitary," which is a size used for fruits or vegetables; a #2 1/2 hole-in-cap; and a #4z, Royal, or #1, which was used not only for fruits and vegetables, but for fish and soups as well. There is also a flanged disk which may have been the "cap" for a hole-in-cap can (Rock 1989).

Utility Wares

The Ray House excavations yielded elements of 25 different ceramic utility vessels which were used in the preparation and preservation of foods. Ten of these vessels had been treated with an Albany slip on both interior and exterior surfaces. They include a body sherd and a rimsherd (from two different containers) with original diameters of 7 in, and the remnants of a 12-in mixing bowl. Albany slip is made from a clay dredged from the Hudson River near Albany, New York. When applied in suspension and fired, it forms an impervious ceramic seal. Albany slip was one of a number of alternative, nontoxic, waterproof-coating processes developed about 1800 to replace the poisonous lead compound glazes which had been in use from circa A.D. 350 to the beginning of the nineteenth century (Savage and Newman 1985:176).

Three incomplete vessels have a salt-glazed exterior surface and an unglazed interior. One of the three (of indeterminate shape) had an original diameter of about 9 1/2 in. Five vessels have a salt-glazed exterior and an Albany slip on the interior. They include a shoulder sherd with part of a strap handle from a "beehive"-shaped jug (post-1850 to circa 1900), a vessel of indeterminate shape measuring about 9 3/4 inches in diameter, and an incomplete 10-in mixing bowl. Salt glazing was first used on the stoneware of the Rhineland in the sixteenth century. It appeared on brown stoneware in England late in the seventeenth century, after being patented by John Dwight in 1693, and was in extensive use in the United States until about 1880, when its popularity began to wane (Derven 1980:125; Savage and Newman 1985:253).

There is one incomplete lid which had an original diameter of 8 3/4 in. It is Albany slipped on the exterior surface and unglazed on the interior.

One of the more interesting examples of the potter's craft in the Ray House collection is a very small, copper luster rimsherd on a thin redware body which is reminiscent of mid-eighteenth century Jackfield ware. It came from the first level of TU-4 in Room 3. A redware paste often served as the vehicle for copper luster. This sherd exhibits a row of bosses just below the lip which is quite similar to that illustrated by Moore (1936:Figure 119) on a mug with copper luster bands at the rim and the heel. The English commercial adaptation of Hispano-Moresque lustered ceramics was not successful until the early years of the nineteenth century. Hughes and Hughes (1956:103-104) suggest 1840 as an initial date for copper luster. As a decorative technique, luster enjoyed a popularity in America which lasted from about 1850 to about 1890 (Derven 1980:124).

Yellowware was first exported from England to the United States during the late 1820s. It enjoyed immediate acceptance, and by the 1840s it was being produced domestically by the potters of East Liverpool, and along the east coast from New England to Maryland. By the 1860s and 1870s it had reached its pinnacle, only to plummet in competition with whiteware. It finally all but disappeared from the

marketplace during the 1930s (Leibowitz 1985:9). There is but one yellowware sherd in the collection. It was once a part of a ribbed bowl with a scalloped rim.

One vessel fragment (original shape could not be determined) bears a Bristol slip on both exterior and interior surfaces. Bristol slip, which is an opaque white to creamy white, was developed in England about 1835. It became widely available after about 1890 as a surface sealant for utility vessels (Derven 1980:123). One other incomplete container exhibits a Bristol slipped exterior and an Albany slipped interior. Its original diameter was estimated to have been 9 in.

One of two whiteware sherds bears an annular decoration in medium blue, while another exhibits a mocha design which is sometimes referred to as "seaweed." The name "mocha" derives from the mocha stone, a dendritic quartz, and from the name of a coffee market town in South Yemen. Production of utility vessels embellished with mocha and annular decorations began in England before 1785, according to Savage and Newman (1985:194); however, Robacker and Robacker (1978:24) state that William Adams of Tunstall is usually given credit for the first production of this ware between 1787 and 1805. There seems to be some disagreement on the matter. Enoch Wood, the Stevenson Pottery at Cobridge, and potteries in Scotland and Wales were all producing annular-decorated mocha vessels by perhaps as early as 1790. An American potter, Edwin Bennett of Baltimore, began producing similarly decorated ceramics circa 1850. Annular/mocha elements are not only found on whiteware, but pearlware and yellowware as well. According to Derven (1980:124), these motifs were common circa 1800-1900. They reached their peak of popularity circa 1840-1880. Although usually thought of as kitchen ceramics such as mixing bowls and measures, some, coffee pots and ale mugs for example, bridged the gulf from utility to serving pieces for everyday use. Although contrasting rings may be the only decorative embellishment used on a vessel, mocha bands are invariably flanked with rings or annular elements; therefore, one or perhaps two pots may be represented by these two sherds.

Table Service

The table service pieces include a minimum of 78 vessels, of which 57 are ceramic (50 whiteware and 7 hard paste porcelain) and 21 are glass.

Stanley South (1974:247-248) developed a ceramic classification which he termed "ironstone-whiteware." It embraces a combination of white earthenware types with a wide range of hardness. In this paper, the term whiteware includes ceramics variously designated ironstone, semi-porcelain, stone china, and opaque china by the manufacturer.

The fortuitous combination of protective tariffs levied against Chinese porcelains, favorable trade treaties, and innovative, aggressive craftsmen, enabled the British to achieve a virtual monopoly in the international ceramic industry by the beginning of the nineteenth century (Miller 1980:1).

British pottery marks predominate in nineteenth-century archeological collections in the United States, and the Ray House ceramics are typical in that respect. Of those plain or embossed wares which bear provenience information, seven are British while three are American.

Three of the British imports (represented by fragments of two plates and one saucer) bear a Royal Arms variant of the J. & G. Meakin Eastwood Works of Hanley, England. The mark postdates 1891 (Godden 1964:11). Fragments of a Royal Arms variant are embossed with the letters "...NE CH..." and "...EM." Originally the three words would have read "STONE CHINA" and "BURSLEM." During the last half of the nineteenth century, there were at least 35 potteries located in the community of Burslem, Staffordshire (Wetherbee 1985:21-23).

There is an incomplete Alfred Meakin ribbed whiteware bowl with a Royal Arms variant. Like the J. & G. Meakin plates, the bowl bears the word "ENGLAND," indicating a post-1891 date of fabrication (Godden 1964:11). Although unmarked, there is a blue-white, ribbed cup fragment with an embossed "wheat" motif encircling it below the lip. The wheat element compares favorably with that on the "Ceres" shape named in honor of the Roman goddess of agriculture. "Ceres" was registered by Elsmore & Forster, Tunstall, 1859. The wheat motif has been in continuous production to the present time by one or more British potteries; however, by the turn of the century, the embossments were "softened," and the color tended toward cream rather than the hard blue-white, characteristic of earlier years (Wetherbee 1980:71-73). This vessel is representative of the earlier style.

A fragmentary whiteware bowl base carries the Clementson Brothers' Phoenix bird (Phoenix Works) trademark. The bird derives from Egyptian mythology as an embodiment of Ra, the sun god, and represents immortality. Perhaps, insofar as ceramics are concerned, it may symbolize the emergence of a new product from the fires of the kiln. This bird, which sits atop a modified garter mark (definitively British) encircled by an ivy crown, was used by the pottery after 1870 (Godden 1964:150). An unmarked marli (raised border of a plate) fragment from a whiteware plate with an original diameter of 9 5/8 in exhibits an embossed design which bears some resemblance to the "Trumpet Vine" motif which was registered by the Liddle, Elliott & Son pottery in 1865 (Wetherbee 1980:97).

An undecorated plate fragment which may have been an English import bears an incomplete depiction of a unicorn. The unicorn serves as the left supporter for the British Royal Arms.

One of the American marks, that of Standard Pottery (not to be confused with Standard Pottery Company, Brazil, Indiana, circa 1903-1908) (Lehner 1988:437), is represented by a portion of the base, footring, and body of a whiteware bowl. Standard

Pottery of East Liverpool, Ohio, was in business from 1886 until 1927. The trademark, which was applied on the biscuit with an inked stamp reads: "THE/Standard/MADE IN U.S.A." "Standard" was executed in script with the tail of the final "d" trailed to underscore "MADE IN U.S.A." Centered below the word "IN" are the numerals "11 25" (November 1925). This style of mark dates circa 1910-1927 (Gates and Ormerod 1982:249).

Sherds from a whiteware plate and a saucer bear identical Royal Arms variants with blank escutcheons. Arced over the arms is the phrase "WARRANTED BEST IRONSTONE CHINA." According to Wetherbee (1980:23), use of the term "warranted" was almost exclusive to American potteries. Barber (1976:161) does indeed identify this mark as the one used on "ironstone" by the Peoria Pottery Company, Peoria, Illinois, from about 1890. The company was in business under that name until 1904.

The decorated (exclusive of repousse) whitewares include five sherds which are trademarked. As with the plain, undecorated whitewares, they are predominately of British origin (three to two). Johnson Bros. is represented by a plate fragment which originally measured about 9 1/4 inches in diameter. It has a 3/16-in-wide copper luster band drawn 1/8 in from the edge of the marli. The mark includes a variant of the Royal Arms and is illustrated by Godden (1964:355). He suggests that the "Arms," among other mark elements which include the name "Johnson Bros.," was current between 1883 and 1913. Inclusion of the word "England," in compliance with the McKinley Tariff Act, suggests a narrower span of 1891-1913.

There is a small, incomplete whiteware bowl (often referred to as a "fruit saucer" or "berry dish") with a soft-paste porcelain body. Soft-paste porcelain, or semi-porcelain, differs from true (hard-paste) porcelain in that it is made with ordinary whiteware clays, to which ground glass is added. In firing, the glass melts, blends with the clays, and renders the resultant body impervious to moisture. Even so, the broken edge appears grainy, with low reflectivity when compared with the vitreous, glassy look of true porcelain. Like ordinary whiteware, it is opaque, lacking the translucent qualities which are admired and sought after in the true porcelains. The base of the vessel is imprinted with the full achievement arms used by the John Edwards pottery circa 1880-1900, and with the registration number (Rd. No. 172,136) which indicates a fabrication date of sometime after about midyear, 1891 (Godden 1964:527-528). A hand-painted gilt "14" and an underglaze "7" in black also appear on the reverse. The trademark on the reverse and the floral design on the obverse were accomplished in transfer print in dark green highlighted in gilt. The flowers and seed heads on the obverse compare favorably with the poppy. Four different shapes of leaves are included in the design.

An incomplete whiteware fruit saucer bears a fragment of the Mellor, Taylor & Co. "crown" mark which was in use 1880-1904 (Godden 1964:432). The design was registered during the winter of 1894 (Rd. No. 206,866). The saucer has a scalloped

edge and is in brown floral transfer print. The leaves are similar in shape to the begonia, while the flowers are daisylike.

The two American marks, which appear on incomplete whiteware fruit saucers, were produced by the Wallace & Chetwind pottery of East Liverpool, Ohio, circa 1890. The company was in business 1882-1901 (Gates and Ormerod 1982:305-308). The edges are embellished with a gilt line, and the interiors are decal decorated in pale yellow sprays of lilies of the valley over green foliage.

The unmarked sherds cover an array of styles, techniques, and colors. Among them are three embossed, shell-edged rimsherds in cobalt blue. According to Dervan (1980:123), edge decoration, which required minimally skilled workers, became a common embellishment for white paste bodies circa 1830 to after 1860. Miller (1980) states that by 1860, shell-edge (which was in decline), along with sponge, annular, mocha, and finger trailed slip decorated vessels were priced at the same level as comparable cream colored pieces. He also found that the value of cream colored ware provided a datum point from which other eighteenth- and nineteenth-century ceramics could be ordered (economically scaled). These three shell-edged sherds reflect the early years of occupation at the Ray House.

Underglaze lines were being applied to ceramics at least as early as the third quarter of the eighteenth century. Despite its simplicity, line decorated ceramics commanded a higher price than edged wares (Miller 1980:28). The style was carried over to whiteware from its cream and pearlware heritage and is illustrated by a whiteware rimsherd bearing a single brown line just below the lip. The sherd appears to be from a shallow, rectangular piece such as a celery dish.

There is yet another fruit saucer rimsherd. It has an unevenly scalloped edge and is decorated in green, transfer-print rosebuds with barbed stems. A dab of gilt was applied to the tip of each bud.

There are two scenic, transfer-print plate-well sherds in mulberry. Mulberry was introduced (along with sepia, green, and flow blue) during what Coysh and Henrywood (1982:10) refer to as "The Second Transitional Period," 1835-1845. One of the sherds depicts a part of a palm tree, while the other seems to represent an expanse of water. They appear to be from two different vessels; not because the decorations are at variance, but because they differ in footring configuration and thickness. Two marli sherds which are also in mulberry may be part of the same artifact. They are decorated with scales, each enclosing a dot. A band of five-petaled flowers and leaves adjoins the scales.

Three whiteware sherds from a fruit saucer with an original diameter of 5 1/2 in are embellished with black transfer print. The center design is floral; however, too little remains to describe it further. The rim design is made up of adjoining

subpentagonal elements which are horizontally hatched within their borders, each exhibiting a central black dot. Interspersed between the pentagonal elements (toward the edge) are subhemispherical elements, which are vertically hatched and also have a black dot in the center. The design is covered with a tan luster band. Quality control was quite poor on this piece.

Flown (flow) blue is a variety of transfer print in which the pigment diffuses into the glaze during the second firing. The diffusion causes a softening or blurring of the design definition when the kiln atmosphere contains volatile chlorides (Savage and Newman 1985:125). Although the effect came to have aesthetic value, the process was originally designed to hide misalignments between parts of the transfer print. Flow Blue was initially marketed about 1835-1840 (Williams 1981:ii). It began to lose favor about mid-century, only to reappear some fifty years hence. The later ware is often distinguishable from its parent by the addition of gilt flourishes which may have no relationship to the underlying transfer pattern. Though less common, gilt also appears on the earlier ware, but it is usually an integral part of the design. There are two flow blue sherds in the Ray House collection. Neither exhibits gilding; they are too small to be definitive.

There is a single, poorly executed sepia transfer-print sherd depicting two figures (one with an umbrella) and a tree in the foreground, with an expanse of water and part of a structure in the background. The print may be a part of an oriental scene, but the pattern name has not been established.

The remaining monochrome transfer-printed sherds include two decorated in medium blue, one in light green, and one in blue-green.

The hand-painted sherds include a cup fragment with a gilt line at the lip, and polychromes in medium blue, pink, and red-brown; lime green and purple; blue-green and black; red-orange, lime green and navy blue; and red and blue.

As suggested earlier, there is often little separation between the wares which "labor" in the kitchen and those commoner dishes which grace the table for most meals. Spatter/sponge decorated whiteware provides another good example of this intercrossing. Spatter and sponge decoration can be traced back to the humble red-brown paste, tin oxide-glazed delftware. Delftware may have had its advent in English ceramic history as early as 1550. Not long after 1628, "simple purple specklings" appeared as a decorative element on delftware (Robacker and Robacker 1978:16-17). Robacker and Robacker suggest that the popularity of spatterware extended from 1820 through the 1850s, and that the peak was reached in the 1830-1840 decade. Derven (1980:125) (speaking only for spatter/sponge decoration on a white paste body) states that production began about 1830 and continued until the turn of the century. She goes on to say that it was in vogue from 1850 to 1890.

The collection boasts a rare, "Raft" pattern ("...presumably deriving from delftware...") sugar bowl (Figure 6a) in true spatter (though none of the spatter decorated portion of the vessel is extant) (Figure 6b), which "...features two men (one standing, one sitting) on a raft with a square sail and a flying pennant..." (Robacker and Robacker 1978:46). The off-white paste is well fired and impervious to moisture. The base bears an underglaze, hand-painted "X" which has not been identified but may be the mark of the pottery or the artist (Greaser and Greaser 1973:9). Any basal markings on spatter/sponge decorated wares are the exception rather than the rule. This capacious sugar bowl was thrown to accommodate unrefined chunks of loaf sugar. Although the process for refining sugar into the pure white granulated product which is to be found in the market place today was first formulated in 1794 (Americana Press 1924:794), it appears not to have been readily available until sometime after the middle of the nineteenth century. Williams (1987:680) illustrates a large loaf sugar bowl accompanied by handleless cups, cup plates, and dinner plates in the "Delaware" pattern which she dates 1835-1853 (Williams 1987:250). Greaser and Greaser (1973:42-43) illustrate an identical sugar bowl (in so far as hand-painted vessels can be identical) and suggest that it is similar to the English delftware plates attributed to Edkins and Bowen, which were depicted by Mundy (1927:Plate XIX). Edkins was an unapprenticed pupil of the Joseph Flowers' pottery (Redcliffe Backs) at Bristol, Gloucestershire, while John Bowen was an artist in the same firm (Mundy 1927:77,79). The pottery was in business circa 1740-85 (Godden 1964:252). The Chinese scenes on Mundy's plates feature a single figure poling a raft without sail or pennant. This vessel is among several ceramic artifacts from the 1983 excavations (including transfer printed and edge decorated wares) which may have been in use when the Ray House entered the annals of American history.

There are three other spatter/sponge sherds in the collection—each from a separate vessel. Two are in dark blue. The third is in pea green and what appears to be a superimposed mulberry, a color combination which Robacker and Robacker (1978:37) have recorded.

Porcelains, though often present, are not common in the domestic archeological record until after the first decade of the twentieth century, due no doubt, to the emphasis of both British and American potteries on the production of opaque whitewares. Luxury hard-paste French goods enjoyed a small market here, but until the tidal wave of Japanese porcelains began circa 1915 (Newcomb 1947:233) and accelerated with the devaluation of the yen in 1931 (Commonwealth Associates, Inc. 1978:133), the true porcelains which reached these shores appear to have been largely Germanic in origin.

There was a brisk but narrow commerce in German ceramics during the last quarter of the nineteenth century. In contradistinction to the British trade of the same period, which dealt primarily in conservatively decorated sets or services, the German products seemed to have been principally individual, richly hand-painted (or decaled)

pieces of porcelain, designed for the extremes of the economic spectrum. Vessel shapes included shaving mugs, cups, and "parlor" bowls as well as doll elements. These constituted facets of the enterprise essentially ignored by the British. One of the more common items, which served a role in the social graces of the day, was the mug or cup intended as a small, appreciative gift. These often bore a sentiment or personalization in Old English, gold-leaf characters such as: "Remember Me," "A Present," "Sweetheart," or "Father." Evidence of poor quality control can be seen on many of these pieces. Among the most patent of the esthetic and technical flaws are foreign inclusions in the paste; prominent, unmodified mold marks; and carelessly applied decorations. There are two incomplete, hand-painted mugs in the collection which are reminiscent of the German export porcelains of that era, though these particular artifacts lack inscriptions. The larger of the two (Figure 7a) measures 2 1/2 inches in diameter and is approximately 3 in high. Embellishments include a 5/8 in light blue horizontal band bordered above and below with a fine, gilt line situated just below the lip. The band was applied overglaze with a brush. The edges of the band lap over a part of the handle, and a spot of the same blue pigment was dropped on another part of the vessel. There is a small cavity on the interior surface of the mug which was partially filled with glaze. The decorative elements include a large flower with pink petals which vaguely resembles a water lily. It has green and yellow leaves and foliage drawn in gilt. The heel is accented with a horizontal, gilt line. Unfortunately, the base is missing, but this type of porcelain infrequently displays a pottery mark anyway. If it does, it is generally only the country of origin, e.g., "GERMANY," as a mandatory response to the McKinley Tariff Act of 1891.

The second mug (Figure 7b) is smaller, with a slightly flared lip and heel, but it is otherwise similar in configuration to the first. The height is 2 5/8 in and the diameter is approximately 2 in. The body was formed in a two-piece mold. The mold mark on the extant portion of the mug is highlighted on either side with a broken gilt line. The floral motif consists of a brown branch and twigs with olive colored leaves and long, thin flower petals in turquoise. There is also a small cluster of round, yellowish red colored fruits. The base is unmarked. There are two identically shaped handles decorated with a gilt line on the outer edge. One may have been a part of this mug. Quality German porcelains are not included in the Ray House assemblage.

Fluted sherds represent parts of five different pressed-glass tumblers. Flutes have been used as a decorative element on glassware since 1850 (McCain 1979:348). The simplicity of the design, which blends well with a diversity of styles, has no doubt contributed to its continuing acceptance 140 years after its first appearance in the marketplace.

A foot with part of the stem, and a bowl (from two different molded goblets) are included in the collection. The decagonal stem expands to a diameter of 1 5/8 in and is centered over a plain base measuring 3 1/8 in. The plain bowl has a horizontal

mold line at what is estimated to be somewhat over half the distance from the lip to the bowl/stem juncture.

A rayed wine glass base measuring 1 5/8 inches in diameter originally supported a small-capacity bowl typical of the American genre. Such glasses are the correct size for serving the Madeiras, ports, Teneriffes, and homemade sweet wines which were a venerable part of our British heritage from colonial times until as recently, perhaps, as the past decade. Recipes for sweet fruit wines abound in nineteenth-century agricultural and home formula handbooks. Vessels similar to this artifact must have been present in most households, if not for serving wine, then as a dosage measure for the myriad patent medicines of the day which often prescribed a "wine glass full."

It is often difficult to infer function for glass dishes and bowls, especially when only small fragments remain. Some shapes (such as covered nappies and sugars) might serve equally well as useful and decorative accents in the parlor or for service at the table. For purposes of this paper, they have been grouped with the latter.

Parts of at least 13 different glass vessels were retrieved. Eight of those are represented by lid sherds, while four were identified through body or pedestal elements, and one, though broken, is essentially complete. All but three hand-blown examples are mold pressed. A comparison with named patterns was unsuccessful. The near-complete vessel is a handled and footed "sherbet" shape with alternating ribs and flutes. It exhibits two opposing handles. A panel at either end of the cross axis is embellished with a ribbed fan.

Cutlery and Flatware

Included in this category of artifacts are a butcher knife element and parts of table knives, a fork, and spoons. The table knives, of which there are five examples, are similar to the steel and organic flatware illustrated in the 1865 issue of the Russell and Erwin Catalog (Russell and Erwin Manufacturing Company 1980:351-353) and the Sears, Roebuck Catalogue No. 104 of 1897 (Sears, Roebuck and Co. 1968:107-108). Steel flatware enjoyed a popularity which lasted until sometime after the first decade of the twentieth century. Three of the knives have wooden handles. Of those, two exhibit remnants of pewter bolsters and butts, while one has neither. The handles of the other two knives are missing; however, the proximal end of the tang on one is tabbed to accommodate a butt plate.

The fork is represented by an incomplete bone handle. There are two complete and two fragmentary ferrous metal spoons in the collection. When in contact with oral acids, the metal used in this type of flatware produces a rather unpleasant taste. Silver was much to be preferred for flatware manufacture because it is a neutral metal, but sterling, and even traditional plate, was expensive. However, a revolutionary electro-deposition process (Ryland 1967:477-498) which was patented in England on

March 25, 1840, lowered the cost of silver plate considerably. One of the two complete spoons bears the remnants of silver plating which appears to have been applied by that method.

The pattern of one of the two complete spoons compares favorably with the simple, unadorned, 1847 Rogers Bros. "Windsor" pattern which was introduced in 1850. In 1891, they produced "Hoffman I" which was identical to "Windsor," except that it was lighter in weight. "Windsor" was marketed by Montgomery Ward circa 1892 and by Hibbard Spencer Bartlett & Company circa 1914. It appears under the pattern name "French" by Rogers & Bros. circa 1874 and again, under the same name, by L. Boardman & Son circa 1900 (Davis & Deibel 1972). The other complete spoon is embellished with a floral design. The reverse is embossed "PAT APPL'D FOR Wm. A. ROGERS {SILVER/NICKEL}." A horseshoe encompassing an upper-case "R" is positioned after the closing bracket. The firm, William A. Rogers, Ltd., was established in 1904 and is still in business under that name at their home office in New York City. There was an incomplete spoon consisting of a ferrous bowl fragment and a part of a thin handle of the same metal, with a rib pressed along the centerline to increase rigidity.

Culinary Fauna

The Ray House collection includes 17 identified taxa, of which 11 can be considered food animals by some ethnic segment of American culture. A basic, conservative method of estimating the minimum number of individuals was employed which involved tabulating like osteological elements. If two left tibiae of the same species are identified, it is assumed that two animals are represented. There are more exhaustive analyses which can produce finer distinctions and more precise counts. However, in view of the small inventory and the nature of the deposits (discussed in the Summary and Conclusions) it did not appear that the additional time required to make such observations was justified. In descending order of representation, the food animals were: *Sylvilagus* sp. (rabbit), 100 elements, 12 individuals; *Gallus gallus* (chicken), 91 elements, nine individuals; *Sus scrofa* (swine), 46 elements, three individuals; *Bos taurus* (domestic bovid), 11 elements, one individual; cf. *Aythya americana* (redhead duck), three elements, one individual; cf. *Micropterus salmoides* (large mouth bass), three elements, one individual; *Carpiodes carpio* (river carpsucker), two elements, one individual; cf. *Aplodinotus grunniens* (drum), two elements, one individual; *Moxostoma* sp., cf. (redhorse sucker), one element; *Sciurus* sp. (squirrel), one element; and *Didelphis marsupialis* (opossum), one element.

Small punctures from canine teeth occur on a high percentage of the bone, especially those of the rabbit. Due to the size of the marks and the presence of *Felis catus* in the archeological inventory, it was thought that rabbit might represent the prey of the local domestic cat population exclusively. The cats may well have accounted for

some of the rabbits, but a single disarticulation knife mark (observed near the proximal end of a left femur) suggests that rabbits were valued at the table as well.

Among the chicken elements there is the distal half of a right tarsometatarsus which exhibits a pathological, or traumatic, bony growth on its proximal end. The enlargement measures somewhat more than twice the diameter of the normal portion of the diaphysis. Another feature peculiar to this bone is the absence of a distal foramen.

Three sections consisting of two, articulated, bovid cervical(?) vertebrae each were power sawn in a manner which suggests that the carcass was halved after slaughter to facilitate handling during the butchering process. These elements do not appear to have been utilized for culinary purposes since connective tissue and desiccated flesh still bind and adhere to them. A section of a large, unidentified fish was sawn into a 3/4-in steak. Eggs seem to have been a regular part of the diet at the Ray House judging from the quantity of shell retrieved during the excavations.

Vegetable Foods

Cucurbita, *Lagenaria*, and *Citrullus* are represented by pumpkin, gourd, and watermelon seeds and rinds, and by the neck portion of a bottle gourd (which may have been used as a dipper). Gourd shell body fragments are also present. *Prunus* contributed two cultivars to the collection, the plum and the cherry. Other species represented are *Arachis hypogaea* (peanut) and *Zea maize* (corn).

Non-Culinary Fauna

Two amorphous lumps of adipose tissue, which may have undergone partial saponification in the presence of ash, were found in Room 4. They were located in the northeast and southeast quadrangles of Unit 6, Level 1, at a depth of 16-26 cm. Fats and dissolved lye (an alkaline liquor obtained by leaching wood ashes) are the two essential ingredients in a basic soap recipe.

An architectural investigation of the Ray House was conducted before the excavations began. The sagging of the sills between corners and where lap joints occur suggested that the structure had originally been built on stone piers. At some later date the spaces between the piers was coursed in to arrest settlement (Hose and Todd 1983). Such an open yet sheltered area served as an ideal animal retreat. Cats (remains of five individuals were found there) or other small carnivorous animals may well be responsible for a re-deposition of faunal remains from the "formal" kitchen area. If this is true, the sample is quite likely biased.

Disease or trauma precipitated a massive tissue growth on the left mandible of one of the adult cats. The entire element, except for the condyle and coronoid process, was affected. The circumference of the afflicted area measures roughly four times that of the normal mandible. A right radius and ulna, perhaps belonging to the same unfortunate creature, exhibit similar, though somewhat less severe, involvement. There is no indication of fracture, so the malformation may have resulted from infection.

The rat, with a minimum of two individuals (15 elements), and the house mouse, also with a minimum of two (two elements), left evidence of their visitations (gnawn bone) far in excess of their recovered numbers. Since so few seem to have met with disaster there, it may well have been that the resident cats, fed perhaps from the table and the kitchen refuse area "cafeteria," had little passion for the chase.

A single valve of the *Lampsilis radiata siliquoidea* cf. (Murray and Leonard 1962:150) was found. This mussel, commonly called the Fat Mucket, was, like its unionid ilk, hardly a gourmet delight. Its flesh was often used as food for the domestic hog, however, by those who harvested its shell for the button industry.

The luster and uniform thickness of the Yellow Sand Shell or Banana Shell nacre (*Lampsilis anodontoides* [Lea]) made it an attractive and economical raw material for the manufacture of "pearl" buttons (Parmalee 1967:12, 68). Both valves of one of these animals were found during the excavations.

More intriguing, however, was the single *Cypraea moneta* (Money Cowry) (Morris 1966:plate 66) which, though abundant in the Pacific and Indian Oceans, is hardly native to the Ozark Plateau. Another stranger, from the family Cardiidae (Cockles or Heart Clams) (Morris 1966:23), was represented by one valve. Unfortunately, the hinge, crucial to identification, was missing. These bivalves are native to all seas. Although cockles are regularly eaten in Europe, they are not used for food to any extent in the United States.

During the late nineteenth century there was a florescence of home crafts which included needlework, ceramic decoration, and the use of exotic shells for making or adorning small objects such as picture frames, hat pin holders, and trinket boxes. The latter was a revival of a minor art of the eighteenth century (McClinton 1971:97). One expression of this genre, referred to as the "sailor's valentine" in collectors' circles, was being made as early as the 1830s, reached the height of its popularity in the 1890s, and persisted until about the time of the First World War. It often took the shape of a heart made of a number of different shells and set into a frame with a cover. The sailor's valentine may have originated in the Caribbean, and although some undoubtedly were made by sailors, most appear to have been produced specifically as sale items by the local inhabitants of the various commercial and military ports of call (Prince 1982:40-42). Shell-craft keepsakes were sold at both the World's Columbian Exposition of 1893 and the St. Louis Exposition in 1904 (McClinton 1971:102). Although they are

generally less elaborate than their predecessors, shellwork knickknacks are still being produced to commemorate a variety of events, and as souvenirs of various geographic entities. Such mementos and tokens may explain the presence of the non-native Money Cowry and the cockle in the Ray House assemblage.

Alcoholic Beverage Bottles and Closures

The beer, wine, and ardent spirits bottles and bottle fragments appear to fall into two distinct time frames, circa 1880-1910 and circa 1930-1940. Technological and stylistic manifestations served as the basis for establishing the dates of those in the first two categories, while the third bore the year of manufacture on the base of one bottle and exhibited characteristics on the unembossed sherds not inconsistent with that date.

The containers falling within the first period are a minimum of three colorless Picnic Flasks of estimated half-pint (two each) and pint capacities, an amber-colored body fragment of a beer(?) bottle, an amber-colored beer finish (Herskovits 1978:5) which was formed with a lipping tool, and a wine finish, also of amber glass, with an infolded lip.

The Picnic Flask and its concealable cousins, the Cummings, Shoo Fly, and Union Oval (Putnam 1965), were popular shapes for the furtive imbiber in the hostile environment postured by the Woman's Christian Temperance Union, Carrie Nation, and the Cold Water Army, which preceded the "drop of the other shoe"—National Prohibition. These were shapes which do not appear to have survived the passage of the Volstead Act.

The amber body fragment and beer finish were viewed under both short-wave (254 nm) and long-wave (365 nm) ultraviolet light. The appearance was indistinguishable at either length, suggesting that they are part of the same vessel. Since this finish was designed for a cork closure, chances are that it was blown prior to 1900. By that time prosperity, tied to the shirrtail of the Spanish-American War, had begun to return after the Panic of 1893. With that recovery, many of the glasshouses and bottlers were financially able, for the first time, to acquire the tools necessary to take advantage of William Painter's revolutionary new bottle sealing system, the crown cap and finish, which had been patented in 1892 (Lief 1965:17-20).

The infolded lip (exhibited by the wine finish) is a technique of fabrication which seems to have been employed at least as early as the first decade of the nineteenth century. It continued in use until about the third quarter of the 1800s (Jones and Sullivan 1985:80-81), although its popularity began a precipitous decline in the United States after circa 1850 with the introduction of the lipping tool. The lipping tool does not appear to have been readily accepted by the conservative glass-houses of Europe,

and it was from them that many of the wine bottles found on our historical sites derive. Notwithstanding, this particular artifact could not date much later than 1880.

The second period (circa 1930 to 1940) is represented by a complete, embossed pint wine bottle blown in a cup bottom mold. The wine bottle is of colorless glass with intact, ferrous metal, continuous thread cap. A colorless body sherd from a pint ardent spirits bottle with a configuration similar to the Philadelphia shape (Putnam 1965:165) and an amber body sherd of what may have been an ardent spirits bottle of half-pint or pint capacity also represent this period. There are remnants of a panel designed for the attachment of a paper label on the amber sherd. The sides, and possibly the reverse, of the spirits bottle are embellished with a broken rib design. The obverse of the wine bottle has a large panel for the attachment of a paper label. Centered above the panel is an embossed coat of arms in a circle. The arms consists of rampant lion supporters bearing a shield emblazoned with an upper-case "A." The bottle is ribbed above and below the panel. At the heel is another panel embossed "FULL PINT." The reverse is also ribbed and has a small panel for a paper label below the shoulder and a panel above the heel embossed: "BOTTLED BY/AMBROSE/& COMPANY." The base bears the symbol of the Owens Illinois Glass Company, i.e., a horizontal "diamond" superimposed on an "I" inside an "O." Surrounding the trademark are the numbers "7", "2", and "6" indicating, according to Toulouse (1971:403), the plant where the bottle was fabricated, the year date (which in this case was 1931—year dating began in 1930), and mold details. The word "WINE" is also embossed within the perimeter of the scar. The date raises more questions than it answers, for repeal did not occur until December of 1933. The bottle was blown even before the passage of the Cullen Act of March 1933, an interim provision permitting the manufacture and sale of light wines and beer containing up to 3.2 percent alcohol (Downard 1980:158, 153). Ambrose & Company either anticipated the passage of the Twenty-first Amendment, or they were bottling one of the few legal alcohols used for clerical, medicinal, or industrial purposes. The bottle is of a type which was used for marketing inexpensive, fortified wines. Unfortunately, no information could be found concerning Ambrose & Company.

There is an amber "export beer" (Putnam 1965) which was blown in a cup bottom mold. This bottle, as with the wine bottle discussed above, was made by Owens Illinois. The numbers surrounding the trademark are "7", "51" (1981), and "8". Heretofore the contents of a classic export beer bottle shape, which had become standardized in the industry during the 1870s (Munsey 1970:116), was assumed to have been beer. However, during the recent removal of a wine cache in the south alcove of the Truman Home (Harry S. Truman National Monument), two colorless export beer bottles were found which bore labels imprinted "St. Thomas.../Virgin Island/Bay Rum" (Sudderth 1988). The bottles were manufactured by the Puerto Rico Glass Corporation of San Juan. Although the bottles may have been re-used, one is reminded that a manufacturer is not necessarily bound to convention, and may package his product in any bottle which captures his fancy. A long-skirt, crown cap with a natural cork liner, also part of the

collection, undoubtedly belonged with an earlier beer (or soda) bottle. Many bottlers began using the new short-skirted crown cap with plastisol liner in 1955 (Lief 1965:40). The development of a synthetic, poured-in liner meant that less metal need be used for the cap and that the expensive cork disk could be eliminated. Like the solder-dotted filler-hole on the evaporated milk can, the cork liner had its adherents, and many small bottlers continued to use it till at least as late as the mid-1980s.

Medicinal Artifacts

One must use considerable caution when describing unembossed and unlabeled bottles, especially incomplete examples, as medicine bottles. Some of the same configurations used for the packaging of prescription and patent remedies (or cures) were, in many instances, the same shapes preferred by the manufacturers of extracts, toiletries, or even condiments. Closures require the same caveat unless they are found in place on an identifiable bottle.

Medicine Bottles

Even with these strictures, a number of medicine bottles were identified in the Ray House collection. Four of these, though unembossed and unlabeled, are quite distinctive. They are a homeopathic tube vial of 8-dr capacity with a short, patent lip; a pill bottle which is quite similar to the homeopathic vial in size and configuration, but with a short neck; an iodine (or corn remover) bottle from which the characteristic black rubber stopper and attached glass rod applicator is missing; and a graduated (in ounces and cubic centimeters) glycerin bottle with a continuous thread finish. The base of the glycerin bottle is embossed with an encircled upper-case "A," which was the trademark for the Armstrong Cork Company, Glass Division, Lancaster, Pennsylvania, from 1938 through 1969. The firm was sold to the A.H. Kerr Glass Co. sometime during 1968 (Toulouse 1971:24-25). The iodine bottle is basally embossed with an upper-case "C" which, it is claimed, is the mark of Cunninghams & Company, Pittsburgh, 1879-1909. Toulouse (1971:99) contends that such use has not been documented. The technological level exhibited by the bottle, however, is consistent with the techniques and practices in use during the life of Cunninghams. The prescription finish was formed with a lipping tool.

There is the remnant of a cylindrical bottle in amethyst glass with a diameter of 1 3/8 in embossed "... R .../F BROWN(?)/... O(?)UN..." It may have been a part of a Brown's Young America Liniment bottle (Baldwin 1973:87). There was a Frederick Brown, Jr., a Philadelphia chemist circa 1864, who marketed patent medicines (Wilson and Wilson 1971:108). He may or may not be the same Brown. The liniment was advertised four years later (June 17, 1868) in the New Orleans *Daily Picayune* (Baldwin 1973:87). Unfortunately, Baldwin neither describes nor illustrates the bottle.

A panel bottle in amethyst glass bears the following incomplete embossment: "De .../Colic & C(?) ..." The complete inscription had read "DeWitt's/Colic & Cholera Cure/E. C. DeWitt & Co./Chicago, U.S.A." City directories locate the company in Chicago by 1890, and it was still in existence as the DeWitt International Corporation as late as 1983 (Fike 1987:97). The technological landmarks which the bottle exhibits suggest that it was made at about the turn of the century. The date can be somewhat refined because of the inclusion of the word "Cure" on the bottle, the use of which was closely controlled with the passage of the Pure Food and Drug Act. In addition to banning poisonous or other deleterious ingredients which would render a medicine injurious to health, the provisions of the act, which was passed by Congress on June 30, 1906, legislated a modicum of modesty by requiring the nostrum manufacturer to prove his cure claim or desist from its use on product packaging and advertisements. The value of the legislation lay in the removal of dangerous and addictive substances from the patent medicine counter. With reformulation and the substitution of "Remedy" for "Cure," the proprietary medicine might not restore one's health, but neither should it hasten one's demise.

The collection includes a panel bottle fragment which once held Bliss's Botanic Cough Syrup. It is embossed "... BLISS/COUGH/NEW L ..." John C. Bliss appears in the 1870 edition of the New London, Connecticut, city directory as a hairdresser. After a decade of missing directories, he reappears in 1880, not only as a hairdresser, but as the proprietor of Bliss's Botanic Cough Syrup. By 1882 he seems to have come full circle and was again listed as a barber only (Elizabeth Pratt Fox, Associate Curator/Registrar for the Connecticut Historical Society, personal communication, 1988). A large advertising budget was among the prerequisites to success in the patent medicine field. Young (1974:105) records one of Bliss's Botanic Cough Syrup advertising efforts which was in the form of a handbill ballad called "Nellie and Her Lover." For whatever cause, or lack thereof, the brand was only able to survive for a maximum of 11 years.

A square, brown glass bottle, complete with a rubber-bulbed dropper, was the only bottle in which the contents were partially intact—approximately 1/4 oz of colorless liquid. An attached, printed label in blue on white reads: "BROWNIE DRUG CO. (in script)/PRESCRIPTION/SAN SONE BLDG./ST.LOUIS AT JEFFERSON/THE QUALITY CORNER (in white on a blue circle) /DRUGGISTS/SPRINGFIELD/MO./73642 (stamped in black ink)/Date." The blank space after "date" is filled in with a pen: "1-26:29." The next three blank lines are also filled in with a pen: "...Gifford/...rop in eye 3/times a day." The name "...Gifford" was, more than likely, the prescribing physician rather than the patient, if one may assume that the patient was resident at the Ray House. From 1904 until 1934 only Mr. John Aaron McConnell and (until her marriage) his daughter lived at the Ray House (Bearss 1968:86). The bottle is encased in a telescoping pasteboard box covered in hard-finish, green monochrome paper. The portion of the box over which the top slips is covered in white, hard-finish paper. The base bears a mark in bas-relief which appears to be a triangular banner suspended with

the point hanging downward. It is emblazoned with a bird in flight. Arced beneath are the characters "U S(?) A." The glasshouse has not been identified. The bottle was found in the south quadrant of TU-4 in Room 3.

A colorless sherd from a cylindrical bottle bears the following embossment: "...J/ (with an unidentifiable character preceding it in an arc) ... HARLE ..." (in smaller letters). The bottle from which it came may have been one of the variants of Gerroeder De Koning Tilly's "Harlem Oil" (Wilson and Wilson 1971:91, 141). According to Fike (1987:183), the product was originated in 1696 by Dr. Hermaanus Boerhave and Claus Tilly of the Netherlands. Originally it was compounded as a diuretic and kidney stimulant, although later it was advertised as a product for clearing the skin and brightening the eyes. It was introduced in the United States in 1907 by the Genuine Haarlem Oil Manufacturing Company, Holland and Jersey City, New Jersey.

In addition to those bottles which unquestionably did contain medicine, there are others of a configuration most frequently used for medicines, but not necessarily exclusive to them. One of these is a complete, unmarked, one-ounce Western Oval (Putnam 1965) in colorless glass. It was blown in a two-piece mold and has a prescription finish formed with a lipping tool. A Philadelphia Oval, blown in a cup bottom mold, is represented by the lower half of the bottle. It is basally embossed with an unusual and ornate "C" which bears some similarity to a lower-case, "Old English" character. The mark has not been identified.

Another colorless bottle from General Surface 6 West was blown in a cup bottom mold. Enough remains of the bottle to suggest that it may have been a Baltimore Oval. It is basally embossed with an upper-case "O." The glasshouse which produced it has not been identified.

The base, heel, and a part of the body of a machine-made Oblong Prescription shape bottle in colorless glass was also blown in a cup bottom mold and is basally embossed. The character is an upper-case "H." The H.J. Heinz Company made glass packaging for its own products from 1893 to 1910 and used the capital "H" as a trademark when room was restricted on the bottle base. This bottle size and configuration would not have been suitable for Heinz's purposes, however. Toulouse (1971:231-238) offers one other glasshouse which might possibly have blown this particular bottle—the Fletcher, Hart Company of Bellaire, Ohio. The firm began to use the "H" to identify products of their manufacture in 1918—the same year that they began to modernize their operations by installing the first of the automatic machines. Toulouse (1971:231) suggests that the Fletcher, Hart Co. supplied only eastern trade.

A small, embossed fragment of what may have been a cylindrical medicine bottle in transparent glass bears the embossment "... A(?)/SI ..." The original diameter of this bottle is estimated to have been 2 5/8 in. The appearance of the glass precludes machine manufacture.

There is a panel fragment which appears to have been from a large container. It is embossed horizontally "... EL .../S(?) ...". The arrangement of the characters is similar to that of an Ayer's Cherry Pectoral bottle illustrated by Wilson and Wilson (1971:19) which they date circa 1870. The color of the glass differs in that the Ayer's bottle is aqua, while the Ray House artifact has a yellow-green tint.

There is a thin-walled cylindrical bottle fragment measuring 2 1/4 inches in diameter, blown of colorless metal. It bears a large "Owens" scar on its stippled, embossed base. It was made by the Owens Illinois Glass Company, Toledo, Ohio, in plant #7 during the year 1937 (Toulouse 1971:403). A bottle such as this may have packaged a mouthwash.

Two incomplete square bottles with chamfered corners from General Surface 3 East may have held bitters. One of the bottles, aqua in color, is basally embossed with an upper-case "K." Toulouse (1971:299) lists only one glasshouse using that character, and it is quite different in style from the one in the Ray House collection. The other bottle was made in a two-piece mold. It is colorless and is basally embossed "C 3."

There always remain those odd, enigmatic sherds which can only be described, seven finish and neck fragments and three bits of three different panel bottles. There are four packer finishes (one with a ball neck and one with the remnants of a red wax seal), three prescription finishes, and one finish with an infolded lip and a laid-on ring. All except the latter were formed with a lipping tool.

Medicine Bottle Closures

There are five small corks and one continuous thread bakelite lid. Bakelite was first compounded circa 1907-1909 by a Belgian chemist living in the United States (Luscomb 1967:19). Lief (1965:30) suggests that bakelite was too expensive for use in the manufacture of closures until the price of synthetic resins dropped in 1927. The corks and the bakelite lid may have been medicine bottle closures. As a closure, cork had a long career which began circa 600 B.C., when it became available to the Greeks and Romans. It remained essentially unchallenged until the ascendancy of the screw cap following World War I. Standardization of caps and finishes was accomplished by 1924 and was an immediate success at the expense of the cork (Lief 1965:4, 26-29).

Proprietary Advertisements

Upon relaxation, a wad of newsprint quality paper was found to be a 1903 *Ladies Birthday Almanac* copyrighted by the Chattanooga Medicine Company in 1902. The Chattanooga Medicine Company used alternating pages of the almanac to relate testimonials and advertise cures for both human and animal maladies. The affirmations of two well-known lodge women, the Grand Deputy of the Maccabees of the World, and the Secretary-Treasurer of the Kansas City branch of the Eastern Star, no doubt lent

authority to the claims of the company. Thedford's Black-Draught, McElree's Wine of Cardui, and Thedford's Black-Draught Stock Medicine were advertised in the almanac and appear to have been the primary products manufactured by the company. Black-Draught (in powder form) was celebrated as a cure for "...common family diseases..." including constipation, biliousness, indigestion, chills, fever, rheumatic pains, hard colds, kidney diseases, piles, and aches in the head, side, and back. A Black-Draught tea taken morning and night was said to prevent contagious diseases such as smallpox. Wine of Cardui on the other hand, was for "...woman's relief..." It was said to effectively cure "...falling of the womb, irregular menses, flooding (excessive menses), whites (leucorrhoea), and heart palpitations." It also "...brings robust health to poor, weak, debilitated women, ...tones up the genital organs..., and is a treatment for the liver, stomach, bowels, and kidneys." According to the manufacturer, Wine of Cardui may be taken to advantage every day. It was apparently even more effective when paired with doses of Black-Draught. The word "Cardui" may have been a caprice of the Chattanooga Medicine Company. Although the firm never revealed the ingredients of their elixirs, the name may have derived from the Carduaceae family of plants which includes the thistles and the asters. The veterinary version of Black-Draught was a liver medicine for horses, cattle, hogs, and poultry. It was marketed as a cure for cholera and as a means of increasing egg production.

The almanac portion of the booklet includes illustrations of the zodiac and its relationship to the human anatomy. It also includes the weather signal representations which were patented July 1, 1890. A weather forecast is given for each month along with the moon's constellation, the hour for the rising and setting of the sun, and the hour for the setting of the moon. A Biblical birthday proverb, citing chapter and verse, is suggested for each day of the twelve months; hence, the title of the booklet.

Personal Use and Grooming Items

A variety of artifacts are discussed under this category. They are the following: a single-edged razor blade, a talcum/toothpowder can, hair combs, a hairpin, two straight pins, a perfume bottle, a toiletry bottle, fountain syringe pipe fragments, costume jewelry, pocket and sheath knife elements, a cigar tin, clay smoking pipes, a cigarette package fragment, a tin chewing tobacco tag, a slate pencil, a part of a wooden pencil, nail clippers, sewing thread spools, an incomplete crochet hook, and a paper fastener.

Razor Blades

King C. Gillette marketed the original safety razor and thin steel, double-edged blade in 1903 (Barach 1971:72). Although the single-edged blade and razor had been developed by 1908 (Sears, Roebuck and Co. 1969b:775), it apparently did not reach its modern form (with three notches to accept corresponding bosses on the razor) until sometime after 1929 (Sears, Roebuck and Co. 1978:506). By 1937, both the solid and

notched types were being offered by Sears, Roebuck and Co. (Sears, Roebuck and Co. 1978:622). The Ray House artifact (from Room 3, TU-12, Level 2) is identical in configuration to those which can be purchased today.

Talcum/Toothpowder Can

Gerhard Mennen, a chemist and entrepreneur from Newark, New Jersey, was successfully marketing a baby powder of his own manufacture by the late 1880s. The pasteboard cartons which he was using were not entirely satisfactory; so he commissioned the Somers Bros. Company of Brooklyn to design a metal "drum" with a sprinkler top which would allow a half turn for opening and closing. The design was to have a removable cap over the sprinkler. By 1909, the package had evolved into a flattened oval tin and was used to contain tooth powder as well as baby powder (Davis 1968:79, Plate 153). The Ray House artifact, an example of the flattened oval can, is badly oxidized, but fragments of the lithographed label still remain. The design on the obverse consists of vertical, alternating-green-and-yellow stripes. A curvilinear element in the same green, outlined in black, appears to have been superimposed on the stripes. One side of the design is "embattled" or fretted (Barber 1967:14). Unfortunately, the lithograph is too incomplete to allow identification of either brand or product. The flat oval shape seems to have lost popularity to the square can with rounded corners during the late 1940s. Toothpowders began to lose favor with the public about the same time.

Hair Care

Six different combs (eleven elements) and two hairpins are represented in the collection. With the exception of one comb, all are fashioned of hard rubber. There seems to have been no universally accepted measure among comb manufacturers, but at least one firm, the India Rubber Co. of New York, used the "ligne" (Sudderth 1985:39). A "ligne" is equivalent to one of 40 divisions or increments per inch. It is the standard used by the American button industry, and in this we diverge from the British who use a relative rather than a metrological system for sizing buttons. It is of interest to note that the India Rubber Co. manufactured buttons as well as combs. The adoption of a single standard was, no doubt, an efficient and economically sound solution to a problem. There is a fine, double-sided dandruff or louse comb from Room 4, TU-9 which exhibits 40 teeth per inch. It is not marked, so we do not know if it is an India Rubber Co. product.

Women's back or side combs and large hard-rubber or celluloid hairpins seem to have maintained their popularity as practical and decorative embellishments, not only when coiffure styles dictated long hair, as during the Edwardian era, but also when fashion arbitrarily required it to be short as during the 1920s. There are three of these combs in the collection, each of which has a different tooth count: 13, 16, and 22 per inch.

Two of the women's back or side combs bear incomplete embossings. Along with unidentifiable fragments of the manufacturer's name, both refer to Goodyear's vulcanization patent of May 6, 1851, which combined sulphur, crude rubber, and heat to produce a relatively inelastic substance. Luscomb (1967:170) states that the Goodyear patent information has no bearing on the date of manufacture. This is not entirely true. Anything which qualifies as patentable can not, by law, have been known, sold, or used for any more than a year prior to the date on which the patent is applied for. In other words, a hard-rubber button without any of the Goodyear data could not predate May, 1850. Conversely, if the name and date are present, the button must have been made after that time. A patent, exclusive of those for designs (ornamental productions), is valid for 17 years under current law (Webster 1897:268-270) and was granted for a 7-year period with the option of a single 7-year renewal during the years of the Goodyear patents (1849, 1851). When a patent became public property there would no longer be a need to include information concerning it on the object. That might suggest that these two combs were made before 1865.

Two other combs are present in the collection. There is a dresser comb with a decorative back reminiscent of a string of alternating long and short beads. This particular portion of the comb bore 11 teeth per inch. There is also a folding comb in the collection (Figure 8). Montgomery Ward was advertising a hard-rubber "Siamese Folding Pocket Comb" at least as early as 1895 (Montgomery Ward & Co. 1969:106). However the folding comb from the Ray House differs from the mail order offering in that it is made of celluloid and only one of the halves is a comb, while the other serves as a sheath or handle, as in a clasp knife. The comb portion and an attachment ring (for a key chain?) are ivory colored, while the handle is bright blue.

Celluloid was first compounded in 1869 by John Wesley Hyatt and his brother of New Jersey (Luscomb 1967:36). The development of celluloid, the earliest form of plastic, was encouraged by an American billiard ball manufacturer who offered a prize of \$1,000 to anyone who could produce a suitable synthetic substitute for ivory (Peacock 1972:82-83).

Of the eleven comb fragments, seven are from Room 3, two from Room 4, one from Area 1, and one from the South Cellar Wall.

One of the hairpins was found in Room 3, while the other came from Room 4. Rubber hairpins similar to those from the Ray House were being marketed by Montgomery Ward at least as early as 1895 (Montgomery Ward & Co. 1969:87).

Fragrance

There is a small, ornate perfume bottle of colorless glass which was blown in a cup bottom mold (Figure 9). The base, which is smaller than the body, constricts above the heel. Embossed foliage covers the lower third of the bottle. On the obverse is a

panel to accommodate a paper label. The upper margin of the panel is outlined with bosses. Instead of a panel, the reverse is embellished with cross-hatching. The upper margin of the reverse is bossed like the obverse, however. The neck and finish (as well as the shoulders) are missing. There is no hint of ghosting along the mold seams, which could suggest that the finish was applied with a lipping tool. Many smaller businesses continued to purchase handmade bottles until technological advancements, well into the second decade of the twentieth century, enabled the price per unit for the machine-made bottle to be as economical for the firm which ordered grosses as for the firm which ordered hundreds of grosses (Jones and Sullivan 1985:39). The bottle is from General Surface 2 East (Room 3).

Another toiletry bottle of colorless glass is also present. It is represented primarily by the finish and neck. A small portion of the body suggests that it bore decorations in low relief.

Rubber Tubing

Two short lengths of white rubber pipe which were originally part of a fountain syringe came from Room 3 and General Surface 5 West (Room 3). The 1897 Sears, Roebuck catalog (Sears, Roebuck and Co. 1968:329) offers just such a syringe in white rubber.

Jewelry

Jewelry was represented by four beads, an earring, a pin, and an onyx setting for a ring. One of the beads is of transparent, opalescent glass which is favored by the manufacturers of faux pearls. The "luminous" quality of such beads provides an ideal base for the application of the nacreous surface. There is a cream-colored opaque glass bead with a raised band around the middle. Ferrous metal stains are all that remain of the chain on which it was strung. It is quite similar in color and configuration to a particular style of rosary bead within a "decade." There are two wound beads of opaque glass. The smaller of the two is dark brown while the large one is pale turquoise. Three of the beads are from Area 1 (outside Room 3) and the other is from Room 3.

The earring (from Room 3) is circular and measures $3/4$ inch in diameter. It was cast of lead or a poor grade of pewter, with a hemispherical device attached off-center on the reverse side. A "U"-shaped, screw-end shank for unpierced ears was originally secured there. The openwork design features a single, stylized flower encircled with a beaded border. It may have been plated or painted.

A rather unusual, incomplete, donut-shaped, jet-colored glass pin (General Surface 6 East [Room 4]) measuring $1 \frac{3}{16}$ inch in diameter was found. The attachment pin, which was mounted on a cuprous plate on the reverse side, is broken off at the hinge.

The plate extends into and lines the open center, which may have been studded with a brilliant. A cast-in boss could have served as a "stop" for whatever embellishment graced the center.

A rectangular black onyx ring set has beveled edges and measures 11/16 in by 7/16 in. The absence of attachment holes suggests that nothing was mounted on the stone itself.

Sheath and Pocket Knives

There are seven elements from one hunting knife and four clasp knives comprising this collection from the Ray House. The hunting knife has an incomplete, thin blade with a long, tapering, square shank and a cuprous metal guard. No maker's mark is discernible. One of the clasp knives is represented by a cuprous metal bolster and bolster liner. It appears to have been of good quality. Only a ferrous metal bolster liner remains of a lesser quality knife.

A two-bladed, "Barlow" clasp knife, with the exception of natural bone handles, is of ferrous metal throughout. The larger blade, with a sheepfoot point (Peterson 1958:3), is rusted in the open position. No maker's mark was discernible. The Barlow style was designed as a rugged, low-cost tool and consequently found favor among the working classes and boys. It is mentioned in American documents as early as 1779 (Peterson 1958:130). After 1870, the use of synthetics for knife handles began to appear, eventually supplanting most natural materials (Peterson 1958:135).

A component of the most cheaply made of the four knives consists of a thin piece of cuprous metal which was stamped to form two bolsters and the handle for one side of the knife. A securing tab, which is now flattened on the reverse side of the "bolster," was originally bent over the bolster liner. The integral "handle" is unembossed and may have been covered with celluloid or painted in imitation of some other kind of material, such as mother of pearl or wood. Of these seven elements, four were found in Room 3, one in General Surface 3 East (Room 3), and one in Room 4.

Cigar Container

A tall, square, ferrous metal container measuring 5 3/4 in by 3 3/8 in, was originally designed to package cigars. There appear to be remnants of a lithographed label, of which nothing remains but bits of the white background adhering to the container. The base is embossed: "FACTORY No 90/25/1st DIST. PA." According to Mr. Jeffrey Ray, Curator of the Atwater Kent Museum in Philadelphia, that city was a major production center for cigars, and a likely origination point of the Ray House can. Philadelphia boasted well over 500 "factories," each of which, in most instances, consisted of a room or two on the second floor of a house with a few employees engaged in the labor-intensive production of handmade cigars. Rather than a

congressional quarter, District 1 was an administrative division for federal tax purposes (Jeffrey Ray, personal communication, 1987).

Tobacco Pipes

A short-shanked tobacco pipe of terra-cotta clay and one made from a material which is slightly darker than the ball clay usually employed in pipe manufacture were retrieved from the excavations. Both pipes exhibit a ring "finish" just below the rim. The terra-cotta pipe is characterized by close-set diagonal ribs, while the other is embellished with vertical ribbing. On the more complete bowl (terra-cotta), the lines descend from the back to the front in the manner of one illustrated by Sudbury (1979:Plate 10, no. 7), which was produced at Point Pleasant, Ohio. Of the two, only it exhibits any interior charring indicative of use. "By the late 1840s ... short shanked terra-cotta ... (pipes) ... began to appear in abundance ..." and seem to be of American manufacture (Pfeiffer 1982:264, 267). The terra-cotta pipe with removable stem was a transitional form between the single piece ball clay and the briar. It enjoyed a principal share of the American tobacco pipe market in the decade from about 1850 to 1860 and might have continued in that position, if the remarkable qualities of the root of the Mediterranean briarwood plant had not been discovered. Pipes made from the briar root proved to be cool-smoking, durable, neutral in taste, and less prone to breakage than their fragile, clay counterparts. Although Pfeiffer (1982:216, 222) states that the briar root was introduced into the United States circa 1868, we know that tobacco pipes made from that material were being marketed here at least as early as 1865. They were a part of the cargo in the hold of the steamboat Bertrand which sank at De Soto Bend in the Missouri River during April of that year (Petsche 1974:1). The two pipes, constituted by three elements, were found in Room 3.

Chewing Tobacco Tag

Although fashions generally overlapped, chewing succeeded the pipe and snuff, but preceded the cigar and cigarette as the popular method of tobacco use. Chewing tobacco generally reached the consumer in one of three forms: the twist of whole leaves, which looked very much like an armless ankh or an "eye" bolt; shredded and packed in a paper pouch; or in a "plug." According to Campbell (1964:96), the plug takes its name from a curing process used by small operators in North Carolina circa 1850. The method involved boring holes in sweet-sap, greenwood logs and "plugging" the holes with tamped-in tobacco leaves followed by a blunt-ended peg. After a month or two, the sap had had time to moisten and flavor the tobacco leaves, imparting a new character. The log was then split, and the "plugs" were retrieved, ready for use. Although still retaining the name, later "plugs" were shaped in metal presses and enhanced with a variety of extracts. The P. Lorillard Company was one of the first of the large-scale plug producers. It had established an enviable reputation for quality over the years, upon which unscrupulous manufacturers capitalized by packaging their inferior plugs in empty Lorillard wrappers or boxes. The Lorillard company received the blame, and in order

to protect its name, devised a pronged metal tag in 1870 which could be pushed into the plug to identify its origin. The name of this first branded plug was "Tin Tag." The metallic indicator of quality quickly became the vogue (Campbell 1964:104). Just such a tag is a part of the Ray House collection. This artifact is circular, with the black, upper-case letters "TRUE/CHEW" emblazoned on a blue-green background. The manufacturer of the plug on which this tag was attached has not been identified.

Cigarettes

The remnant of a "Lucky Strike" brand cigarette package predates the fall of 1942. Up until that time, the background color for the package was dark green with gold paneling and black letters. A red circle in the center of the package bore the brand name. The copper powder used for the gold ink and the chromium essential to the green dye for the background color were strategic materials for the war effort and civilian use had to be discontinued. The new package (the one in use today) has the same design as that of the original, but on a white background without the gold paneling. The Ray House fragment, from one of the side panels, is embossed "FACTORY No 130/DISTRICT OF VIRGINIA" encircling the numeral "20."

Writing Materials

One of the most intriguing artifacts in the collection is a writing slate fragment from the first level of Unit 4 in Room 3. It bears the incised script characters "BeSSie Mo(c?) JB." Bessy or Bessie is a familiar form of Elizabeth. The slate might have belonged to one of two little girls (Elizabeth Ray or Bessie McConnell) who, at one time, lived in the Ray House. Elizabeth Ray was six years old when the enumerator for the 1860 census entered her name as being one of the occupants of the Ray dwelling (Bearss 1968:34). Perhaps the more likely owner of the slate was Bessie McConnell, who became a resident of the Ray House with her widowed father, Mr. John McConnell, in 1904 (Bearss 1968:86). Forty-eight fragments (which may or may not have been parts of the same writing slate) were recovered. Most of the slate fragments were found in Rooms 3 (21) and 4 (14). The remainder were from the General Surface proveniences (nine) and Area 2 located under D-4 (four). They are unremarkable, except for a single corner piece, which has an incised line 9/16 in from, and parallel to, one margin. A hole was drilled along that line equidistant from each margin. Some school slates were framed with (among other things) wood, which was often secured with a lacing of wire or twine. The incised line may have served as an aid in pairing the holes in the slate and frame before binding them together.

Ten incomplete slate pencils with a similar distribution were also found. Seven were located in Room 3, two in Room 4, and one in a General Surface provenience. Before the end of the first decade of the twentieth century, the venerable and economical slate and slate pencil appear to have been superseded in the classroom and relegated to the toy box at home. School slates and slate pencils were listed in the 1902

Sears catalog (Sears, Roebuck and Co. 1969a), but were no longer available in the 1908 edition (Sears, Roebuck and Co. 1969b). The revolution was undoubtedly related to the appearance of the inexpensive pad of pulp paper and the affordable graphite pencil.

The Ray House collection includes a cuprous metal ferrule which held the eraser on one end of a pencil. A part of the wooden casing surrounding the remnants of the "lead" is still embedded in the band. There is a length of bare lead which may have originally been another part of this pencil, since the diameter of the graphite is the same. The marks made by the two pieces of graphite were compared with those of several contemporary pencils, and a durity of about 2H was established for the artifacts. There is also a cuprous metal eraser holder designed as an accessory to slip over the end of a pencil not equipped with the integral eraser.

There are 24 writing material artifacts in the Ray House Collection. Twenty-one were found in Room 3, one in General Surface 3 West (Room 3), one in General Surface 4 West (Room 3), and one in Room 4.

Nail Clippers

A nail clipper in the inventory from the General Surface, South Wall, Cellar, bears some similarity to the one illustrated in the 1902 edition of the Sears, Roebuck catalog (Sears, Roebuck and Co. 1969a:487) in that the lateral margins of the handle are concave. The artifact seems to be well constructed with a narrow, flat lever secured under one arm of a tri-lobed, spring-loaded catch at the proximal end. The reverse was stamped with what may have been the company name and/or a trademark. Although the surface of the metal is badly oxidized, a few characters can be deciphered: "...h(?)...Oo/ ...(?)...HC Co L(?)C(?)O(?)." Nail clippers were not offered in the 1897 Sears catalog (Sears, Roebuck and Co. 1968), so they may have been a new development sometime during the ensuing four years.

Needlecraft

The vulnerability of our traditional supply lines during the hostilities of World War II fostered an urgent search for synthetic alternatives to alleviate our dependency on imports. Fortunately, many of the processes and products developed during those years were directly convertible to peaceful uses. These materials were often less expensive than the natural materials which had been used previously in manufacturing. The wooden thread spool (the collection boasts three examples) was one of the casualties of the new technology. One of the three is stamped with a dentate border on either end and is lettered "H RICE & Co/ ---TEED." The firm is not currently listed in the Standard & Poore's Register. Although the ends of the other two spools were unembellished when collected, at one time, they may have borne printed paper disks which identified the manufacturer as well as other information of value to the

purchaser. Each of the spools is from a different provenience: General Surface 1 East (Room 3), General Surface 2 East (Room 3), and Room 3.

Crochet needles have a flattened area along the shaft to accommodate the thumb and forefinger during use. The name of the manufacturer and the hook size are customarily found there as well. An incomplete needle which follows that pattern with the name "Borg" and the numeral "13" stamped on opposite sides is part of the collection. A #13 needle is next to the smallest made and accepts a yarn which is quite similar to sewing thread in appearance. Apparently, the Borg company is no longer in business.

Clothing and Accouterments

A variety of clothing and accessory items was found during the Ray House excavations, including collar buttons, numerous other buttons, the leather element from a man's garter, brace or suspender parts, corset stays, textiles, knitted fabric, shoe buttonhooks, and footwear.

Collar Buttons

There are two collar buttons in the collection. One is made of cuprous metal, and the other is of white porcelain. Separate collars, cuffs, and fronts for dress shirts first came into use in the early 1850s (Martin Wyckoff, Curator, McLean County Historical Society, Bloomington, Illinois, personal communication, 1987). One may speculate that such an abrupt departure from traditional style in men's fashion was a reaction or adjustment to the momentous social, demographic, and economic changes which were emerging in the western cultures of the mid-nineteenth century. Mass migrations of people from rural to urban environments began in response to industrialization. Wages were the remuneration for urban labor, and the large family which had functioned well as an interdependent, self-sufficient entity in a rural environment became an economic liability in the city. Even so, many of the tasks which the members of the large family had performed still remained, or even increased. Laundry was not the least among these, for dress standards were often radically different in the urban environment. In the country, many had only a single suit and shirt to be worn on special occasions such as church attendance, funerals, and weddings. However, when one was required to wear a suit six days a week, detachable collars, cuffs, and shirt fronts, and the use of sleeve protectors, enabled one to adhere to the dress code without changing to a fresh shirt every day. If the detachable parts were of rubber or celluloid, they could be cleaned and ready for wear in minutes. Even if they were of linen, a smaller expenditure of labor was required to keep them in order than would have been necessary for a complete shirt. Although they seem to have addressed a primarily urban problem, the "component" shirt did make its way to the farm. One avenue was through the mail-order catalog, which echoed current fashion and became

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the trendsetter for rural America. By 1935, the return to the shirt with attached collar is reflected in the Sears, Roebuck catalog by a five to one margin (Sears, Roebuck and Co. 1978:316, 376). The development of the gasoline and electrically powered clothes washers by the second decade of the twentieth century alleviated at least some of the drudgery of laundering, and no doubt contributed to the demise of the component shirt.

Buttons

There are 162 buttons in the collection, making them second only to nails in number of artifacts by type recovered during the 1983 investigations. Materials used in their manufacture include porcelain, mother-of-pearl (both fresh and salt water), metal (ferrous and cuprous), composition, hard rubber, bone, and glass.

A certain Mr. R. Prosser of Birmingham, England, received a patent for the fabrication of impermeable paste buttons about 1840, and in collaboration with the North Staffordshire pottery of Minton and Company began production (Turner 1967:433, 443). About the same time an enterprising Frenchman came to England and learned the secrets of Prosser's process, returned to France, and with the help of the French government, set up a button factory at Braire. He was able to produce buttons at half the cost of those made in England, and the English trade collapsed during the 1850s. Although there might have been some American production (Peacock 1972:100), most of our impermeable paste buttons may have come from France. According to Luscomb (1967:183), "small chinas" (impermeable paste) range in size from 3/8 in to 3/4 in and include (among others) undecorated white and colored paste types, along with piecrust and calico prints.

Until about the middle of the nineteenth century, the fashioning of nacre buttons appears to have been a cottage industry in the United States (letter to Arthur H. Wolf from Ronald R. Switzer, December 18, 1974, on file, Midwest Archeological Center). The limited production fell far short of demand, and consequently, Birmingham, England, whose 2,000 pearl button makers supplied most of the world with their products (Peacock 1972:40), supplied ours as well. By 1855, the volume of our imports began to change with the establishment of factories for the production of pearl buttons on the eastern seaboard, principally in New York and New Jersey. Between 1855 and 1890, millions of pearl buttons were produced domestically—all from salt-water shell obtained through trade with China, New Guinea, Burma, the Philippines, North Queensland, Thursday Island, and the Arafua Sea (Farrel-Beck and Meints 1980:3-18).

About 1891, American button manufacturers began to utilize an abundant and readily available, domestic raw material for the fabrication of their product—the unionid mussel. From a modest beginning, the manufacture of fresh-water shell buttons in the United States became a vigorous industry (Murray and Leonard 1962:9). Growth was phenomenal. A short decade and a half after the manufacture of fresh-water shell

buttons began, over 60 percent of the mother-of-pearl from which American made pearl buttons were produced was from our own rivers (Farrel-Beck and Meints 1980:3-18).

Buttons made from riverine shell lack the brilliance of those from salt water (Luscomb 1967:177) and, consequently, were used almost exclusively as fasteners for utilitarian clothing. It is of interest to note that fresh-water shell buttons outnumber salt-water examples by more than four to one (36-8) in the Ray House inventory.

With a few exceptions, the metal buttons in the collection (14 cuprous and 8 ferrous) were designed for everyday use, too. Four of the cuprous metal buttons do stand apart. Two of these, measuring 24 lignes, were made in three pieces. The obverse of these buttons features a cut-out design with a scalloped perimeter (facing toward the center) and an oak bough with four leaves and two acorns. The middle portion of the button is crosshatched and may have been painted originally. The backplate with cut-out shank is missing from one of the buttons. Another unusual metal button is stamped with an Eastlake-period design in bas-relief. It measures 22 lignes. Cutouts allow a background of contrasting color to be sandwiched between the two halves. The design consists of an openwork "V" and a floral element. The obverse features a self-shank. The design of a 38 ligne, three-piece button in the collection consists of openwork, faceted beads stamped from a thin sheet of cuprous metal. The filler or disk, the reverse, and the incomplete cone shank are of ferrous metal.

The male half of a "snap," which may have been part of a two-piece cuff link, bears a trace of silver plating. Such closures were being marketed in 1927 (Sears, Roebuck and Co. 1970:446). A 20-ligne, hinged spacer and backplate is also a part of a cuff link.

The composition buttons range in size from 26 to 45 lignes. Six of the 10 are undecorated and were for use on coats or jackets. Among the remaining four are two which measure 45 lignes, and have a swirled, off-white (on black) decoration, reminiscent of fingerprint patterns. The designs differ slightly. A charcoal-colored button measuring 26 lignes exhibits a mottled white obverse. There is a 17-ligne subspherical button impressed with a pattern composed of hatched squares. The interfacing squares on each of the four sides are hatched at a 90-degree angle to suggest a woven fabric. Included with the ten composition buttons are two disks which served as fillers between the halves of a button.

Hard-rubber buttons are represented by six examples ranging in diameter from 14 to 40 lignes. Rubber buttons from the nineteenth century often bear the name Goodyear and the patent date or dates (for the vulcanization process) of 1851 or 1849 and 1851. Most hard rubber buttons found in our excavations may have been of domestic origin, if we may rely on a statement made by Turner (1967:447) in 1866: "... One peculiarity of the United States' productions has been the making of considerable

quantities of vulcanized rubber buttons, a description which has not been patronized in Europe, partly, perhaps, from their peculiar smell..."

There are four bone buttons—all with four-hole attachments, all different, and all lathe made. Two measure 22 lignes and two measure 30 lignes. Most of the bone buttons which were made in the nineteenth century were purely utilitarian (Peacock 1972:21), as are the examples from the Ray House. Bone was replaced by vegetable ivory by about 1870 (Peacock 1972:47).

There is a total of four glass buttons in the collection. According to Luscomb (1967:80), the glass button industry flourished from the 1840s. One of the buttons is of white or milk glass. It measures 18 lignes and has a two-hole attachment. The other three are of very dark red glass which appears as black until backlighted. Such buttons were fashionable from about 1870 to 1910 (Peacock 1972:49). Blue, green, and purple glass was also used during the same era to produce buttons which appeared to be black. Those colors were replaced by true black glass circa 1900 (Luscomb 1967:88). One of the "black glass" buttons, measuring 30 lignes, is decorated with a low-relief eight-point openwork, stellate moresque design with a pebbled background. Eastern motifs were also in vogue circa 1870-1910. The original loop shank attachment is missing. Another interesting button, measuring 20 lignes, bears a design which is distinctly Eastlake in character. The Eastlake style was at its height of popularity circa 1880.

Garters

Garters were a standard part of male attire until well into the 1940s when rubber filaments knit into the tops of stockings became common. Not only were socks made self-supporting, but they were more comfortable and convenient as well. The leather element for a single grip garter is represented in the collection. It is that portion of the garter where both ends of the elastic webbing and the grip are joined to support the sock. Similar garters are illustrated in the 1927 edition of the Sears, Roebuck catalog (Sears, Roebuck and Co. 1970:446).

Corsets

There are four fragments of ferrous metal corset "bones," or stays, one of which is tipped in white celluloid. Steel stays were used in foundation garments at least as early as 1895 (Montgomery Ward & Co 1969:309). An improvement in the stays was advertised in the Sears, Roebuck catalog for the fall of 1900. It consisted of routinely dipping the ends in celluloid. The celluloid covered the sharp edges and helped prevent the thin steel from cutting the fabric, thereby increasing the life of the garment (Sears, Roebuck and Co. 1970:685).

Textiles

Among the apparel fabrics is a piece of black satin, backed with a light brown knitted material which provided substance and resiliency. Another bit of knitted material, which was dyed black, may have been part of a stocking. There is also a white satin hair ribbon.

Buttonhooks

The basic, wire, two-cents-per-dozen, shoe buttonhooks, which Montgomery Ward advertised in the spring and summer edition of his 1895 catalog (Montgomery Ward & Co. 1969:86), are identical in configuration, but 1/2 in shorter, than the two in the Ray House collection. In the same catalog, the women's shoes with button closures outnumbered those with laces by a margin of more than three to one (Montgomery Ward & Co. 1969:511-514). By 1908, among the 21 styles offered for sale by Sears, only one pair of women's shoes still used the button closure (Sears, Roebuck & Co. 1969b:813-845). After that time, button closures appear to have been common only on infants', and to a lesser extent, on children's footwear.

Footwear

The collection includes relatively complete examples of a man's shoe, a boy's shoe, and two women's shoes. Additionally, there are fragments of what appear to be five men's and two women's shoes. The man's shoe (for a left foot) measures 9 1/2 B on the foot caliper in its present desiccated condition. The shoe is high-topped with an eyelet-and-lacing-hook closure; rounded, capped toe; stacked heel; and machine-sewn sole. It is of top-grained leather and could have served either as a dress shoe or for moderate outdoor activities. On the other hand, the boy's shoe (also for the left foot) was designed for hard use. It has a two-buckle closure and is made of heavy, black, split leather. The sole and stacked heel are attached with a double and single row of wooden pegs, respectively. A very similar article, called a "Plow Shoe," is illustrated in the 1896 Montgomery Ward catalog (Montgomery Ward & Co. 1969:522) and in the 1897 Sears, Roebuck catalog (Sears, Roebuck & Co. 1968:203). In 1902, Sears (Sears, Roebuck & Co. 1969a:1048) listed the style in men's sizes only, and did not list it at all in 1908 (Sears, Roebuck & Co. 1969b).

One of the black leather women's shoes has a four-button closure. The capped toe is decorated with a single line of perforations, and in all, it is remarkably like one offered by Sears, Roebuck and Co. in 1908 (Sears, Roebuck & Co. 1969b:813). The sole is machine stitched and the heel is of stacked leather. The other woman's shoe constructed of black leather has a 12-eyelet, lace-up closure. Both of these shoes appear to have been made of thin kid which would have been ill suited for heavy use. A cuprous metal tack measuring 5/8 inch in length may have been used in footwear construction.

Purse

The last item among the clothing and accouterments was a pair of ornate silver corner embellishments from the northeast quadrant of Room 3, TU-12. They were originally fitted to the flap of a woman's "clutch" pocketbook and are similar in design and concept to those adorning purses in the 1895 Montgomery Ward catalog (Montgomery Ward & Co. 1969:100). By 1908, the clutch purse seems to have lost the aura of style which it had attained a little over a decade earlier, and those which were offered for sale by the Sears, Roebuck Company (Sears, Roebuck & Co. 1969b:1000) were much plainer and lacked the decorative metal corners. They, too, may have fallen victim to the pervasive revolt against the perceived "excesses" of late Victorian and art nouveau decorative styles which resulted in the Stickley-Craftsman designs at the turn of the century.

A single silver rivet from the third arbitrary level of Test Unit 4 in Room 3 may have been a part of the purse, since both it and the corner decoration are from the same provenience.

Exchange

There are 16 pennies, four nickels, and one trade token in the collection. The dates and mint information for the coins are as follows: pennies - (Indian Head) 1882, 1884, 1902, 1906, (Lincoln) 1909, 1911D, 1916, 1916S, 1917, 1917, 1917D, 1918D, 1942D, 1944D, 1945, and 1945; nickels - (Shield) 1868, (Liberty Head) 1892, 1900, and (Buffalo) 1916. All but two coins (a nickel from Area 1 and a nickel from between the double south wall of the cellar) were found in Room 3.

The use of trade tokens for making change or paying house losses in gaming was designed to increase the volume of business, for they were redeemable only in the establishment of issue (Farris 1980:32; Rulau and Fuld 1972:44). Farris (1980:29, 32) suggests that widespread use of the token was begun in the West circa 1880, but notes that the collection from the excavations in Old Sacramento, issued primarily by saloons, derived from the 1905 to 1919 period. The trade token from the Ray House (Figure 10) measures 15/16 inch in diameter and was struck in aluminum. It bears the following embossments in low relief: obverse - "J.F.C. RUHMOHR/207/SO.13TH STR/SALOON"; reverse - "GOOD FOR 2 1/2/CTS./IN TRADE." The city where J.F.C. Ruhmohr held forth has not been established, but the material from which the token was made does offer some clue to its age. Aluminum, a relatively recent element in the metallurgist's kit, was not isolated until 1828. It was first marketed in 1855 at \$90.00 per pound, a prohibitive sum for most ordinary applications at that time. With improvements in the process of refining, the price had dropped to \$12.00 by 1870, to \$2.00 by 1889, and to \$.29 in 1899 (Gilman et al., ed. 1904:I:412). So it would seem that by the turn of the century aluminum was inexpensive enough to admit such a

mundane use. The Ruhmohr Saloon check may well fall within the same time period as the tokens from Old Sacramento, i.e., from 1900 until the advent of prohibition (Farris 1980:31). The token was found in TU-12, Room 3.

Domestic Devices and Furnishings

The household items in the collection are a diverse group of artifacts. They include wooden match sticks, kitchen tool handles, a metal dust mop holder, clothes pins, a remnant of a sink or tub stopper, a hanger, chair caning, chair rungs, porcelain casters, a furniture glide, upholstering textiles, part of what appears to have been an antimacassar, sheeting, wall paper, lamp elements, lamp chimney sherds, an electric lamp part, clock parts, a clock key, a "flue stopper," and decorative ceramics.

Matches

The 79 wooden matches from the Ray House compare favorably in length and detail to the kitchen "friction" matches sold today. The first essentially modern friction match was not marketed until 1855 (Gilman et al., ed. 1904: XIII:179-180).

Kitchen Tool Handles

There are two wooden handles for kitchen implements. One resembles a variety of pine. It is drilled through longitudinally, and may originally have had a wire loop on the proximal end for hanging. It is short (measuring 3 1/4 in) and was obviously intended for light duty—perhaps as a strainer handle. The other, which is slightly tapered on one end, may have been part of a wooden spoon.

There is also a serpentine crank for a coffee mill which is quite similar in configuration to one pictured in the 1897 Sears, Roebuck catalog (Sears, Roebuck & Co. 1968:102). The wooden handle is missing but the shank which accepted it is still extant.

Dust Mop Holder

The dust mop holder, half of which remains, is made of thin, pressed sheet metal. Several mops of this type are illustrated in the 1927 Sears, Roebuck catalog (Sears, Roebuck & Co. 1970:972).

Clothespins

There are seven clothespins, each made from a single piece of wood. They are identical to those illustrated in the 1908 Sears, Roebuck catalog (Sears, Roebuck & Co. 1969b:467).

Tub Stopper

A ferrous metal disk with a plate riveted to the reverse side and a bit of hardened, white rubber are all that remain of a bathtub stopper. The obverse was cast with a bisecting groove and central eye for the attachment of a ring and chain. The separate stopper was in the process of being superseded circa 1929 by a modern integral waste water fitting which, with the push of a lever, could close or open the drain pipe (Sears, Roebuck & Co. 1978:979).

Hanger

During the renovation of the kitchen (Room 4) at the Ray House, the carpenters found a length of a small tree branch, measuring 3/8 inch in diameter, which had been bent and bound around a rafter in the southern portion of the room to serve as a hanger, perhaps for wet clothing, kitchen utensils, or cured meats. It was not a common device in a nineteenth-century Euro-American kitchen. However, in a vignette of a pre-World War II kitchen in rural Yorkshire, England, James Herriot (1975:61) describes "...hams and sides of bacon hanging from their hooks in the ceiling..."

Chairs

The crafting of hickory chairs, which were made without benefit of fasteners, was a cottage industry in the mountains of the southern United States during the nineteenth and the first quarter of the twentieth centuries. A fragment of caning (woven in a herringbone pattern) from the excavations is reminiscent of the bottoms often found on these chairs.

Two chair rungs appear to be of white oak. One is lathe decorated and the other is plain. Mass production of oak (especially white oak) furniture in the United States seems to have begun during the last decade of the nineteenth century. Oak furniture reached its height of popularity circa 1910 and was replaced by walnut, mahogany, and woods stained in imitation of them by the beginning of the 1930s. Oak did not capture a significant part of the market again until its brief resurgence in the mid-1950s.

Casters

There are two white porcelain casters in the collection. Casters are small wheels attached to the feet of chairs, beds, or other furniture. "Caster" is a name which is shared with the ubiquitous nineteenth-century condiment set, or an individual piece within that set. Porcelain furniture casters were being marketed at least as early as 1865. At that time iron, wood, and brass caster wheels were available as well (Russell and Erwin Manufacturing Co. 1980:159). Porcelain casters seem not to have survived long after the turn of the century (Sears, Roebuck & Co. 1979:439-442). They were replaced first with cast brass and then with ferrous metal.

A convex, circular, ferrous metal artifact measuring 15/16 inch in diameter has been identified as a furniture glide. The glide is more commonly used today than the caster, no doubt due to its simplicity and modest cost. The transition from caster to glide appears to have begun by the mid-1920s. A walnut bedroom set illustrated in the 1927 Sears, Roebuck catalog (Sears, Roebuck & Co. 1970:864) shows casters on the heavy pieces and metal glides on the night table, bench, and chair. This particular glide is stamped with a design and the name "MILFORD."

Wallpaper

The papered wall has been an important feature in American homes since the eighteenth century. Wallpapers have been used to brighten and add interest to a room, as well as to cover unfinished boards and cracked or rough plaster. A wallpaper fragment with a gauze backing was found in the excavations. The paper has a white background with a design, which is too incomplete to identify, drawn in silver. The gauze backing on the Ray House paper suggests a late nineteenth-century date of manufacture. During that era, according to Frangiamore (1977:16), a textile liner was applied to the wall in order to present a smooth surface for papering.

Bed Clothing

There is a textile fragment with a machine-sewn edge. The thread count (64 per inch) suggests that it may once have been part of a muslin bed sheet. Ready-made muslin sheets, as well as sheeting materials which could be sized and sewn at home, were being offered by Montgomery Ward at least as early as 1894 (Montgomery Ward & Co. 1970:120, 11).

Upholstering Fabrics

Three bits of cloth from the Ray House are of upholstery weight. Two of them, a tattersall in red and blue on a white background and a white fabric in plain weave, are from TU-1, Room 3. The third is a twilled textile from TU-3, Room 3,

Some well-executed strip tating in ecru may have been a part of an antimacassar. Antimacassars were essential furniture accessories for the meticulous homemaker of the 1920s and 1930s. During those years, men's heavily pomaded and brilliantined hair could leave an enduring mark on the overstuffed chairs and sofas of the day. The strategically placed decorative, and often handmade, antimacassar spared the upholstery. Like lace, tating was also used to decorate the edge of table coverings, bed linen, and articles of women's attire.

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Lighting Devices

There are conflicting claims for the development of petroleum-based fuels for lighting devices. A landmark in the development of illuminating fuels was reached circa 1850 when Samuel M. Keir of Pittsburgh distilled the first "carbon oil," "coal oil" (as it is referred to in the southern United States), or "kerosene" (as it is now commonly called) from crude petroleum (Smith and Smith 1981:16-17). Dr. James Young, a Scotsman, obtained an English patent in 1850 and an American patent in 1852 for a fuel which he called "paraffin oil." Dr. Abraham Gesner, a Canadian geologist, patented an essentially identical product (which he called kerosene) in the United States in 1854. Thuro (1981:15) believes that Gesner should be credited with the discovery, since he gave public demonstrations of this new illuminant in 1846. Whoever the genius was, he heralded a revolution in lighting which was not to be seriously challenged until Thomas A. Edison invented the first successful, incandescent electric bulb in 1879 (Smith and Smith 1981:17-18).

The Ray House collection includes elements from a minimum of four kerosene lamps. The wick adjustment wheel from one of the four is marked "PAT JAN 16 83 & FEB 11 73" on the reverse side. The 1873 date may refer to patent 135,749 issued to Lewis J. Atwood of Waterbury, Connecticut, and assigned to the Plume and Atwood Manufacturing Company of the same city. The patent was granted for a wire framework which was bent to offer support to the air distributor near the upper end of the wick tube (U. S. Government Printing Office 1873:166). The more recent date was for a lamp burner extinguisher, patent 270,631, granted to a Thomas Burns of Brooklyn, New York. The device, according to the patent drawing, was operated by a wheel similar to the wick adjustment wheel. When twisted, it elevated a rod in a tube which, in turn, tilted a plate over the lamp burner (U. S. Government Printing Office 1883:211).

There is an air distributor plate which was cut to accommodate a combined wick tube and vapor vent. The vapor vent was designed to release any potentially explosive gaseous build-up in the sealed font. It also served as a combustible gas channel to the burner, which enabled the lamp to operate more efficiently (Woodhead et al. 1984:48). A deflector in the collection is hinged on one side and tabbed on the other. It is a part of a common prong burner which was introduced about 1868. Thuro (1981:42) illustrates a complete burner with a similar deflector.

There are remnants of at least two lamp chimneys in the collection. One of the lamp chimneys is of the "Big Bulge" (Thuro 1981:48) shape with a "pearl" top, patented by the George A. Macbeth Company in 1883 (Wallace-Homestead Book Company 1972:111). Part of an etched (technique employed mainly during the late nineteenth century [McKearin and McKearin 1948:32-33]) line appears on this chimney fragment, indicating that it bore one of the popular decorations used on this particular configuration during the late nineteenth century. Thuro (1981:49) illustrates the more common "big bulge" designs, many of which are available today as reproductions.

Woodhead et al. (1984:61) state that this style of chimney appears to predominate on archeological sites of the late nineteenth and the early twentieth centuries in Canada and, presumably, in the United States as well. The other chimney has a "pie crust" top formed with a hand-held tool. In 1877, the Thomas Evans Company (one of the parent firms which became Macbeth-Evans in 1899) obtained the patent rights to a "pie crust" edge made with a crimping machine (Wallace-Homestead Book Company 1972:111). A threaded, cuprous metal grommet completes the lighting device elements in the collection. A grommet prevented excessive wear on an electric lamp socket by the pull chain.

Clocks

There are two cuprous metal, toothed wheels and a hammer, or striker weight, which formed a part of a mantel-sized clock mechanism. The larger wheel (which clockmakers call a center wheel) is studded with 13 cam pins on the obverse side near the perimeter. The wheel measures 2 1/4 inches in diameter. There is a shaft on the reverse side with a capped end which accommodated both the mainspring (missing) and the ratchet which maintained its tension. Near the cap there is a single, countersunk, threaded hole for the screw that secured the spring to the shaft. The cam pins activated the striking mechanism of the clock. The function of the second wheel (measuring one inch in diameter) has not been determined. The circular striker weight is 1/8 in thick and 9/16 inches in diameter. It is of cuprous metal, with the remnants of a ferrous metal shank.

Flue Cover

The collection includes a cuprous metal "flue stopper," which was used to cover the chimney/stove pipe juncture. Ordinary flue stoppers were of plated ferrous metal and usually bore an idealized scene in the center. Most households disconnected and moved their heating stoves during the summer, not only for cleanliness sake, but also to provide extra space during the warm months.

Decorative Ceramics

There are three decorative, hard-paste porcelain sherds in the collection. One is a part of a footring and marli from a shallow bowl or plate. It is hand-painted overglaze with a floral motif in aqua, brown, and olive green. The design elements suggest a European, rather than an oriental, origin. A scalloped and fluted rimsherd may be of occidental manufacture as well, since those are among the decorative techniques generally associated with occidental ceramics. It is unpainted. The third piece of porcelain appears to be a part of an anthropomorphic figurine represented by the lower portion of a floor-length, button-front robe or gown. The buttons are on the left side, suggesting that a female was depicted. There is a light blue pigment which appears to have been brush applied to the surface.

Leisure and Sport Items

Home entertainment items from the Ray House include four poker chips, wax disk phonograph record fragments, and three pieces of a cuprous metal reed board for a harmonica.

Poker Chips

The poker chips are made of white celluloid and measure 1 3/8 inches in diameter. They appear to have been molded in halves and joined.

Phonograph Records

The record fragments represent at least two different disks. Experimental disks were first made by Edison in 1878 and were followed by those of Bells and Tainter in 1885. It was another decade before Emile Berliner marketed the first commercially-produced disk recording in 1895 (Read and Welch 1959:119).

Only one side of one of the Ray House disks was utilized for recording. This practice seems to have been quite common during the early years of the industry. The American Graphophone Company had made a few experimental, double-sided disks as early as 1904, while the Odeon company of Germany was already manufacturing and distributing double records by that time. Four years later, Columbia was producing double records commercially (Read and Welch 1959:145). It was not until Victor's introduction of the doubled Red Seal series in 1923, however, that the public began to realize that the single-sided record was obsolete (Read and Welch 1959:257).

Interest in the talking machine was greatly enhanced by the publicity it received during the St. Louis Exposition in 1904 (Read and Welch 1959:56-157). By 1908 it was a coveted addition to the parlor, and by 1927, according to the Sears, Roebuck Catalog (Sears, Roebuck and Co. 1970:689), it was acknowledged as yet "... another step to a happier life ..."

Neither of the records in the Ray House collection was grooved or channeled on the outer margin—an innovation which was designed to guide the needle into the recorded portion of the disk. The lead-in groove would have offered no advantage on a spring-driven machine since the needle was usually positioned on the disk before the turntable stop was released. Quite the reverse was true with the advent of the electrically driven turntable and changer. Although an introduction date for the lead-in has not been established, logic suggests that it coincided with those improvements. Phonographs featuring electric power were being offered for sale shortly before the end of World War I. Multiple playback capabilities were in the market place by 1930 or 1931 (Sears, Roebuck and Co. 1978:754, 698). By that time, the spring-driven turntable

was obsolescent. The Ray House may have had its first phonograph before 1923, but most certainly before the 1930s began.

Firearms Ammunition

It is indeed the unusual rural nineteenth-century American archeological site which does not yield cultural materials suggesting the presence of firearms in the home. Shoulder arms and handguns fulfilled a number of needs on the farm, including recreation, protection, and food procurement.

The percussion cap was of landmark importance in the history of firearms. It was far more reliable and permitted faster reloading than the flint ignition system which it superseded. According to Hunt (1986:41), the cap was perfected circa 1820, was in common use by 1825, and was in general military use by the 1840s. A single, ribbed percussion cap with a ground skirt measuring 0.190 inches in diameter and 0.214 inches in length was recovered from TU-4, Room 3 during the excavations. The small size suggests that it may have been designed for a handgun or small-bore rifle.

A lead ball measuring about 0.380 inches in diameter may have been fired in a muzzle-loading .40 caliber shoulder arm. A long gun using that system of charging was designed to accept a projectile somewhat smaller than its bore. In order to restore the tolerance necessary for proper compression, the ball was seated with a lubricating patch.

There are three low-base paper hulls in the collection from Rooms 3 and 4 which are marked "W.R.A. Co./N_Q 10/STAR" (Winchester Repeating Arms Company). Most 10-bore advertising was directed at the long-range, water fowl hunter, though that gauge held little distance advantage over the smaller gauges. According to Vinson (1968:91), Winchester began making paper cases for 10-, 12-, 14-, and 16-gauge shotguns at least by 1875; however, he seems to suggest that the "STAR" brand postdates 1909. White and Munhall (1977:156) state that the Winchester headstamp was shortened to "W. R. A." around 1940. There are two shot sizes, a "#00 Buck" and a "B," which could have been loaded in a 10-gauge shell; although by 1980, only "#2," "#4," and "BB" shot were available in factory loads.

Two expended, .22 caliber rimfire cartridges are a part of the collection. One, a "short," is headstamped in bas-relief with a serifed upper-case "P," the trademark used by the Phoenix Metallic Cartridge Company, South Coventry, Connecticut. Phoenix was in business from 1877 through 1888 (White and Munhall 1977:28). The other, with an impressed "US" mark is a "long." The "US" headstamp indicates a product of the U.S. Cartridge Company, Lowell, Massachusetts, which was in business from 1869 until 1936. This particular round apparently did not discharge on the first attempt, since two firing pin marks are evident. Either of these cartridges would have been effective in dispatching rabbit or squirrel. The only other civilian cartridges from the excavations

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which would have been suitable for hunting were the .41 Long Colt (headstamped W. R. A./41 S. D. A.), which Barnes (1980:179) evaluated as adequate for small to medium game, and the two .32s, a short and a long. The short is headstamped. It too bears the mark "US". The .32 round originated under an 1860 Smith & Wesson patent and was designed for use in their New Model #1 1/2 and #2 revolvers. Later, it was adapted to Colt, Allen, Blue Jacket, Enterprise, Favorite, Whitney, and X. L. handguns as well as a variety of rifles, including ones made by Remington, Stevens, and Winchester. It was a good game caliber for distances to about 50 yards, and was fairly popular until about the turn of the century (Barnes 1980:293). The .32 "long" is a stretched version of the "short," replete with the same virtues and limitations. The "long" was being produced at least as late as 1963 (Datig 1963:145).

The other cases include one which appears to have been designed for the .380 Webley revolver circa 1868 to 1870, and subsequently loaded in the United States (Barnes 1980:176); two .38 Smith and Wesson cartridges headstamped "W. R. A."; a .41 caliber "Short Double Action"; and two cases stamped "W. R. A. Co./41 L. D. A."

Originally, the .38 Smith & Wesson was designed for the company's hinged-frame revolver, introduced circa 1877 (Barnes 1980:177). The .38 Smith & Wesson is one of the most enduring American cartridge achievements and has been adapted to many different handguns worldwide. Until recently, the Smith & Wesson or Colt revolver chambered for the round was designated the official sidearm of most of the police departments in the United States.

The .41 caliber Short Double Action cartridge was introduced by Colt in 1877 for their Lightning Model revolver. The two Long Double Action cartridges manufactured by the Winchester Repeating Arms Company are a longer version of the load. Both are obsolete and are inferior in accuracy and stopping power to the Smith & Wesson .38 (Barnes 1980:179). Its primary claim to fame(?) is that Billy the Kid is reputed to have died with a .41 Colt Lightning in his hand.

Aside from projectiles and cartridges which had domestic utility, the Ray House inventory includes munitions (all from Room 3) dating from mid-century which might have served in the battle of Wilson's Creek. They include: an unfired .31 Colt percussion-model lead bullet, an expended projectile which may have been fired from a .36 Colt percussion, and two .69 musket balls. The .31 and the .36 were cast for pistol rounds. Both Union and Confederate forces employed weapons which were bored for these calibers.

Toys

Despite the blurring of role definition which has taken place during the past twenty years, the general attitude toward the propriety of gender-specific activities seems

to have changed little. The toys from the Ray House and those which are marketed today seem to reflect that bias. The collection includes a miniature sad iron; a "doll-sized" bottle, cup, spoon, and saucer; doll elements; a farm animal figurine; marbles; and a ball.

Sad Iron

The incomplete toy sad (heavy) iron (Figure 11) is similar in all its features to those of the double-ended "Mrs. Potts"-style, toy sad irons (Figure 12) illustrated and described in the 1897 Sears, Roebuck catalog (Sears, Roebuck and Co. 1968:99). A "lace" sad iron (according to the advertisement), though often sold as a toy, was useful in finishing "fine work." Mrs. Potts' design may postdate 1865, for it does not appear in the Russell and Erwin hardware catalog (Russell and Erwin Manufacturing Company 1980) of that year, although six other styles were advertised. The adult-size "Mrs. Potts" iron must have been a well-designed tool for its purpose, since it was still being offered to Sears customers at least as late as 1936 in its original configuration and weights (Sears, Roebuck and Co. 1978:620).

Tea Sets

A toy bottle of amber glass measuring 11/16 inch in diameter was blown in a cup bottom mold. It may have been a part of a child's tea set which was made from lead castings. Recovered pieces include a spoon, cup, and saucer. The spoon handle configuration is reminiscent of several similar flatware designs which were created circa 1870-1900. A common feature among them was the use of an element, generally circular or sub-circular in shape, which served to separate the treatment of the proximal and distal portions of the handle. The cup and saucer are decorated with a leafy branch in low relief.

The poisonous nature of lead was undoubtedly recognized by craftsmen who had experienced its toxicity long before circa 1800 when the first safe industrial alternatives (waterproof ceramic finishes) were introduced (Ketchum 1970:12). It was not until about 1976, however, that the first direct steps were taken on the federal level (regulation of paint components) to completely banish lead from products offered to the consumer (Dwane Durst, Environmental Protection Agency, Kansas City, Kansas, personal communication, 1988). Toys made of lead or lead alloys persisted in the marketplace until they were displaced by plastics following World War II. The switch to plastics had little to do with public safety or concern; rather, it was because they were an even cheaper raw material.

Dolls

At least four, and possibly five, dolls are represented. One of the larger pieces of a doll head, in delicately tinted bisque (unglazed hard paste porcelain) (Figure 13),

bears an impressed upper-case "A" at the base of the "skull." A portion of a second letter is present, but it is too incomplete to identify. The mark is similar in character to one which was used by Armand Marseille of Kopplesdorf, Germany. His pottery was founded in 1865 and continued in business until at least as late as 1881 (White 1966:25, 252). This particular doll head fragment lacks painted or embossed hair. It may have been furnished with a wig by the maker. Other elements which may belong with this head are a sherd with a painted eyelash, a "boat"-shaped, solid, white glass eye with a blue iris and black pupil (Figure 14), and several fragments representing the shoulder. One of the shoulder sherds exhibits a hole for attaching the head to the soft leather or textile-covered body. Also recovered was a complete blown-glass eye with a blue iris and black pupil (Figure 15), as well as part of another identical to it. Although they and the smaller solid eye are well crafted and quite lifelike in appearance, the latter is more detailed. White (1966:15-16) states that blown-glass eyes with pupils date circa 1790, but blue irises were rare at that time. Another doll head fragment in glazed porcelain is represented by a portion of the shoulder area with two attachment holes. By about 1873, doll heads of this type were being produced in quantity by German potteries (White 1966:23).

There is a small, bisque doll leg without a foot from the collection. Near the proximal end of the limb is a deep, encircling groove for tying the leg to the doll body. An embossed numeral "5" appears just below the groove on one side of the leg. White (1966:28) states that doll heads were sold separately by size in both Europe and the United States. She fails to give initial or terminal dates for the practice, however. The doll leg bearing the "5" suggests a modicum of standardization and interchangeability. Another glazed, white porcelain sherd has the proper curvature to have been a part of a doll leg. A bit of a blue pigment underglaze is visible on one end, and the hint of what may have been an attachment groove is present at the other.

Most doll elements, as well as other porcelain toys found in proveniences dating from the last quarter of the nineteenth century, may well be of German origin. That is certainly true of a bisque figurine of a pig (Figure 16) depicted sitting upright on its haunches. It is stamped "GERMANY" on the reverse side and was apparently designed to appeal to the immature, and often insensitive, American frontier humor of the time. The face of the figurine was given a sardonic expression which is also a characteristic of the Columbian Exposition "brownies," featured in stories and products designed for children during the last decade of the nineteenth century (Montgomery Ward & Co. 1969:68, 96, 224). Fortunately, the perception of the comic or the endearing in a toy is as inclined to change with a new generation, as are other conventions.

Marbles

There are 11 marbles in the collection. By material type seven are glass, two are porcelain, and two are calcareous stone. There is another sub-spherical limestone

object with crystalline inclusions which may have been a marble. It exhibits eight or more ground planes.

The glass marbles include two green and white, one mottled green, one colorless, and one translucent blue which were machine made after 1926. In addition, one mottled green machine-made marble dating circa 1901-25 was ground on one side only (Randall 1971:105). Also a handmade "German swirl" compared favorably with Baumann's (1980:39) description of his Type 2-4 with a solid core and evenly spaced threads. The German swirl should predate the inception of trade strictures with Germany in mid-1914 (Morris 1953:303).

The calcareous stone marbles associated with the Ray House should date from sometime after the middle of the nineteenth century, with the resurgence of German exports, to about 1870, when the miners began to abandon their craft in favor of less taxing jobs in other facets of the toy industry. The production of glass, porcelain, and clay marbles during the last quarter of the nineteenth century hastened the decline of the labor-intensive stone variety (Baumann 1980:19, 28).

One of the porcelain marbles exhibits a "Bennington"-type brown glaze which, on this particular artifact, shows yellow where the application was thinnest. Savage and Newman (1985:41) define the term "Bennington," in its usually understood sense, as "...a rich brown glaze, often mottled with yellow, blue and orange..." Baumann's (1980:30-33) research suggests that "Benningtons" were more than likely made in Germany rather than in the potteries of Bennington, Vermont, whence their name was derived. Randall (1971:103-104) as well as Baumann (1980) consider Benningtons within the category of clay, and within the subcategory of "crockery" marbles. Whatever the paste of a "crockery" marble might be, it apparently is not porcelain, since that material is discussed by both under the ranks of "china." According to Spargo (1926:190-210), hard paste porcelain was produced in some quantity by the various ceramic houses of Bennington, Vermont; however, he makes no mention of marble manufacture.

Ball

An incomplete rubber ball measuring 2 9/16 inches in diameter is part of the collection. The ball could have been contemporary with the battle of Wilson's Creek, since the vulcanization process had been patented a decade earlier.

Tools and Machine Parts

Historical

The Ray House tool inventory consists of the following: a carpenter's handbrace bit; an incomplete, inch-round shank of a drill bit; the shank and a portion of the blade

from a wood chisel; a cuprous metal ferrule from a tool handle with remnants of tin plating; a bit of muslin sheeting tied around a quantity of carpenter's line-marking chalk dust in a characteristic shade of blue; a "ringer" (for clinching a metal staple in a hog's nose to prevent rooting); a single pick-up tongs for round stock (blacksmith's tool); a combination open end/box wrench; a sickle or grass hook; a hand grip ferrule for a two-handed scythe; four sharpening stones made from local materials; and a plow fragment. Two links of a traction chain and a fragment of a heavy woven textile belt were also recovered. Traction chains or belts were used for transferring power to a variety of farm equipment.

Prehistoric

Aboriginal materials consist of six flakes (five of which are from Room 3 and one from Room 4); a small, white, Late Woodland/Mississippian projectile point made of Burlington chert; and a mottled gray, corner notched, basal fragment from a projectile point, characteristic of the Middle Woodland period made from non-local Reed's Spring chert (Ray 1983). Both projectile points were found in Room 3.

Building Materials and Hardware

This category includes door furniture, flat glass, an electrical insulator, fasteners, plaster, brick, and roofing materials.

Door Furniture

A mineral doorknob (made of marbled, brown clays), along with one of black glazed ceramic and one of white porcelain, had the advantages of being cheap, clean, and strong. They all enjoyed a long popularity for those reasons. All three were used for common applications, as opposed to the more expensive knobs made from brass, bronze, or silver/gold plate (Blackall 1890:249). Mineral knobs were being manufactured at least as early as 1865 (Russell and Erwin Manufacturing Company 1980:6) and seem to have persisted until the end of the nineteenth century.

Other door (or gate) furniture includes a japanned key escutcheon; a mortise lock dead bolt; an internal part of a rimlock; three wire gate hooks (one with "eye" bolt attached); a strap hinge for an outbuilding door; a pintle hinge with attached rivets to span 3/4 inch; an incomplete, spring-loaded, screen door check; and an incomplete padlock of recent design.

Flat Glass

The dramatic technical changes which occurred in the glass industry during the nineteenth century often effected alterations in products. In the manufacture of window

glass one of these alterations was in thickness. During the past two decades a number of investigators including Chance and Chance (1976), Moir (1982), Roenke (1978), Schoen (1985), and Walker (1971) have examined the correlation between thickness and fabrication date. Their constructs have been based on one of two summary thickness values—the mode or the mean. The schemes employing mean thicknesses usually seek the initial construction date while those using the mode are designed to reveal the peak construction period or periods on the site.

There are 255 flat glass sherds in the Ray House inventory. The mean thickness of this universe is .086 in. The mode (with 45 sherds) is .095 in, and the median is .087 in. The extremes, represented by one sherd each, are .045 in and .122 in. Both mode and mean measurements suggest a late fabrication date.

A chronology may have less validity outside the region in which the study was made. Among the reasons for possible incongruities may be the unique trade network for that region and its sources of supply. Yet Moir's (1982:3) panregional study involving sites in the northeast, south, and the eastern part of the southwest did result in a high correlation for the initial date of construction and pane thickness. There are a few artifacts in the Ray House inventory, including the hand-decorated "two men on a raft" sugar bowl, the Civil War-era canteen element, the .31 and .36 Colt bullets, and the .69 musket balls, which date from the early years of the house. However, a preponderance of the cultural materials from the Ray House (including the flat glass) seem to date from about the last quarter of the nineteenth century to about the mid-1930s when it ceased to be a private dwelling.

According to Moir's (1982:Table 7) model for dating lower to middle class rural dwellings in the United States east of the continental divide, the mean date for the Ray House flat glass is circa 1900. The data of Chance and Chance (1976:Table 27) and Roenke (1978:Table 30), who utilize the mode rather than the mean, indicate that the three decades circa 1870 to 1900 were the peak years for construction activity or glass replacement at the Ray House.

The exterior surfaces of two detached bits of glazier's putty were painted white. Masking tape was used on at least one occasion when painting the sashes, since a small piece with a bit of white paint adhering to it was found.

Electrical Insulators

An incomplete electrical insulator in aqua glass measures 3 3/4 inches in diameter. The configuration can be categorized according to the Milholland and Milholland (1971:210) scheme as a CD 737. The CD 737 insulator is defined by a flared, single petticoat, a smooth base, and the absence of embossments.

A ferrous metal slug measuring 1/2 inch in diameter was punched out of an electrical fuse box.

Fasteners

There is a total of 389 nails from the excavations, which are almost evenly divided between cut (192) and wire (197) varieties. In addition to these, there were numerous bits of metal which may have been nails, but were too badly oxidized to allow positive identification. Other fasteners and fastener components include 24 "fencing" staples; three "dry wall" staples; 10 countersunk wood screws with starter points; a round head machine screw; an incomplete lag or hanger bolt; a carriage bolt with nut; a screw-mounted, electrical wire hanger with a layer of gray paint over an initial white coat; a rivet; a roofing disk; 15 washers; a square nut; a hex nut; and another hex nut of cuprous metal.

Plaster

There is a small quantity of plaster, some of which bears lathe impressions on the reverse. Horse hair was used as a binder. The plaster was covered with a whitewash and finished with a single coat of matte-finish, peach paint.

Brick

There are twenty-odd brick fragments, some with lime mortar adhering to them. Their function is not known, since none of the extant structures appear to have used brick as a construction material.

Roofing Materials

Roofing materials include pieces of asphalt shingles with crushed slate surfaces, and wooden shakes. There is a piece of quarter-sawn oak which is about the proper height for a shake. One end, approximately one-fourth of the length, has been thinned and bears tool marks, perhaps from a froe.

Horse Tack

Various transport-related artifacts were recovered in the excavation. One of the more interesting of these is a specialized horseshoe. It is subcircular in shape, and measures about 4 1/2 inches in diameter. The shoe is badly worn. Smith (1966:194-195) illustrates orthopedic shoes of comparable configuration, and states that they were fabricated to stabilize the hoof of a runner or trotter, or to correct a fault. The size of the shoe is quite small and suggests that it may have been fitted to a child's pony rather than a work or utility animal.

A decorative side plate from a horse bit is made of a series of four subcircular elements of decreasing size. The design is similar to that on a bit (catalog #1847) illustrated in the 1892 edition of the Moseman catalog of horse furnishing goods (C. M. Moseman & Brother 1976:124). Like the pony shoe, the gracility of the bit would have been appropriate for light-duty applications.

Other horse tack includes a hame hook, two heavy-band terrets, a clevis pin with a cotter key hole (Spivey, ed. 1979:35), trace chain links, two strap loops, a whiffletree plate, four harness rings, a harness buckle, part of a logging chain link, a wagon box rivet made to span 5 1/4 in, a harness rivet, and 12 leather harness scraps. One of the harness scraps has a cuprous metal rivet attached. There is a ferrous metal rod, one end of which is bent at a 90-degree angle. The other end appears to have been cut. It may have served as a harness hook.

Unidentified Artifacts

Miscellaneous bits of scrap metal stock, wire, leather, wood, and paper remain unidentified or unidentifiable. However, a select few do merit mention. One of these is a slightly bowed rod measuring about 34 inches in length and 5/8 inch in diameter. About an inch, or slightly more, on either end is bent down. These portions bear remnants of incomplete features. Although it may have been a buggy part, it is the metal itself which is of interest. The metal shows the graining and fibers peculiar to the texture of old-fashioned wrought iron. With the advent of mild steel circa 1860, the manufacture of wrought iron was eclipsed. Mild steel was not steel at all, but a high-quality slagless iron with no impurities. As a medium, it had the advantage of plasticity without an attendant loss of strength, but it required more skill to shape and weld than wrought iron. It was also more susceptible to oxidation. The "new broom" of technology was not welcomed by the blacksmith whose job it affected, but he was left with no other alternative than mild steel (Bealer 1984:43-45).

There is a hand-forged piece of ferrous metal one inch wide and about 12 1/2 in long. A parallel section measuring 11/16 in was cut out of the proximal end, leaving a thin strip of metal 2 3/4 in long on one side. The strip was bent and welded to the other edge to form an "eye" with which the object could have been hung. The last three inches of the distal portion is tapered and bent in an open "S." The end (which might have had definitive features) appears to have been broken off, so its intended function is conjectural. The shape of the distal end, though lacking the cross piece stop and the robustness of a commercially-produced model, could have served as a stove lid lifter. However, it is far more likely to have been a pot or skillet handle.

There are two pieces of flat metal strapping 3/4 in wide. One of the fragments has been broken on either end at a nail or screw hole. The other piece has two nail holes at each end. Three of the original four 2d nails are still in place.

Bits and pieces of newsprint and pasteboard in the inventory are too incomplete to permit more precise identification.

SUMMARY AND CONCLUSIONS

During the course of the project, Jack Ray's (1983) observations suggested that some displacement of the cultural deposits (especially heavier objects such as nails) had occurred through the annual freeze-thaw weather cycles common to that latitude and elevation. The vertical distribution of certain other artifacts and classes of artifacts in the Ray House collection seem to attest postdepositional movement. For example, by the turn of the century the history of the Ray House as a private dwelling was more than half over; yet 70 percent of the wooden matchsticks in the collection were found in the first arbitrary excavation level of the excavations, and none were found below Level 2.

Conversely, there may have been little horizontal displacement of cultural materials. The double fireplace opening in the south elevation of Room 3 and the north elevation of Room 4 was within the project area. One would expect most of the expended matches from Rooms 3 and 4 to have been discarded near the fireplaces and indeed 78 percent of the total were found in front of the hearth in Room 3 while 6 percent were in front of the hearth and 16 percent were on the hearth in Room 4.

A curious horizontal pattern of artifact distribution in Rooms 3 and 4 emerged during analysis. From one to nine times as many artifacts within each of three selected functional categories were found in Room 3 than in Room 4 (Table 1). Yet areally Room 3 is only 14 percent larger. This might suggest that, contrary to the findings of Hose and Todd (1983:10), Rooms 3 and 4 were not coeval with Rooms 1 and 2. If Rooms 1 and 2 constituted the initial construction at the site, logically Room 2, which had a fireplace in the east elevation and an outside door in the south (rear), would have been the kitchen/parlor, while the unheated Room 1 would have served as the bedroom. A favored method of disposal of household refuse in rural nineteenth-century America was a toss out the kitchen door (Sudderth 1985, 1992). Unless the pitcher possessed major league potential, most of the fallout, it would seem, would land within the first 5 m—the space now covered by Room 3 rather than in the “outfield” of what was to be Room 4.

An ash lens with bits of charred wood and nutshells was found overlaying the original surface in Unit 1, outside the rear door of Room 2. This also might intimate a later construction date for Rooms 3 and 4. Ashes, at least in the South, were often scattered outside the door and on paths in winter to provide better footing on ice.

An enigmatic aspect of the deposit in Rooms 3 and 4 is the recency of the datable artifacts within it. This might suggest that the structure was a late addition. The coins and the flat glass exemplify this problem. Mint dates range from 1882 to 1916. As mentioned above, the majority of the flat glass was fabricated circa 1870-1900. Hose and Todd (1983:5) found that the Ray House was poorly constructed and suggest that the inferior craftsmanship led to early sagging between the stone piers. One would

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suspect that an early filling of the interstices between the support piers would have been imperative, if the integrity of the structure was to be maintained. This would have sealed in the earlier deposits and restricted disposal of later cultural materials.

Whenever they were built, Rooms 3 and 4 appear to have been erected at the same time, since Hose and Todd (1983:9) noted that the original plaster on the interior walls runs continuously, with no break for a partition. They go on to state that the floor framing, ceiling joists, and rafters were constructed to accommodate what they suspected was a double fireplace.

During the course of the excavations which followed, a cellar ramp entryway was discovered in Unit 12 which was inclined down toward Room 2. The passage was blocked by the south foundation wall; so it must have been in use after the cellar was expanded, but before the interstices between the piers were filled. Although the entryway may have been reached via a trap door in the Room 3 floor, it could have been an outside approach if Rooms 3 and 4 were a later addition.

There is a strong probability that the faunal and botanical remains from the excavations do not represent the full range of kitchen refuse discarded during occupation of the house. The excavations were conducted in what appears to have been a major area of waste disposal (beneath the floors of Rooms 3 and 4); however, other midden areas were probably missed, due to the limited nature of the excavations (O'Brien et al. 1982). Preservation problems with noncharred botanical remains and postdepositional transport and consumption of faunal remains by other animals (such as the previously mentioned cats) can combine to alter the archeological record (Binford and Bertram 1977; Renfrew 1969, 1973). Thus the food remains from the excavations cannot be used to provide an exact description of the diet at Ray House. They can be used in combination with other information, however, to shed light on general patterns of consumption during occupation of the site. These patterns are briefly reviewed below.

The home economy, based on mixed farming and animal husbandry supplemented by game, was evident from the archeological record. Domestic utility containers such as stoneware vessels, Mason jars, and jelly glasses were used for preserving and storing surplus vegetable and animal foods for future consumption. Commercially prepared foods packed in cans and bottles offered some variety to the meals and some respite to the homemaker. The cultivars recovered during the excavations (including corn, pumpkins, watermelon, peanuts, plums, and cherries), suggest, with a few exceptions such as baking powder and coffee, the capability of nutritional self-sufficiency of the farmstead.

During the nineteenth and early twentieth centuries, ardent spirits were often used as a basis for medicinal preparations. A favorite home remedy for congestion and coughing, was bourbon whiskey in which rock candy had been dissolved. A little would go a long way. This might explain the presence, but paucity, of alcoholic beverage bottles in the Ray House collection. The three picnic flasks are technically and stylistically late

manifestations. The shape was popular circa 1880 to 1910. The medicines identified in the archeological collection are, with the exception of a prescription eye drops solution, proprietary. They, too, seem to date from about the same period as the whiskey bottles. Together, they might suggest that the home remedy was the preferred method of treatment for family illnesses.

The few bits of apparel from the excavations neither support nor refute the conservatism of those who lived in the Ray House. However, a number of buttons is included in the inventory, and they are often indicative of the kinds of clothing to which they were attached. Of the 44 nacre buttons in the inventory, 80 percent were made of unionid shell. Freshwater shell fasteners were used on utilitarian apparel only. Similarly, 82 percent of the metal (cuprous and ferrous) buttons were from work clothing. Glass and porcelain buttons (74 total) comprised 46 percent of the button inventory. Of those, 97 percent were from work clothing. The two collar buttons (one made of white porcelain and one of cuprous metal which may have been plated originally) were of moderate quality.

The ceramic inventory from the Ray House suggests that unmatched piecemeal acquisitions were used at table rather than matched services. For example, the marked, undecorated whitewares were produced by six potteries, while the decorated wares bore the marks of four manufacturers. A total of 58 distinct patterns or styles was tabulated in the inventory.

The original pierced "hall-and-parlor" construction of the Ray House (two rooms wide and one room deep) was both simple and inexpensive to build. It apparently housed furnishings equally as unpretentious, exemplified by the caning fragment and rungs from folk craft or mass produced chairs and the tattersall print upholstery fabric.

In marked contrast to the other Ray House materials are the phonograph records (and by extension, a phonograph) and the nicely detailed porcelain dolls. These were luxuries, and imply expenditures which do not seem to be in keeping with the pattern.

Definition of the fireplace between Rooms 3 and 4 was essential to the historically correct restoration of the Ray House and was, therefore, one of the primary goals of the project. The excavations unequivocally established that the fireplace opened into both rooms.

The architectural investigations at the site (Hose and Todd 1983), which preceded the excavations, recorded the remnant of a stone wall intersecting the north foundation of Room 1. The wall fragment is located some seven feet east of the juncture of the north and west foundation walls. It suggests that the original cellar was dug under the western half of Room 1. Today the cellar spans both Rooms 1 and 2. The architectural team noted what appeared to be parallel walls forming the south face of the cellar. They concluded that the inner wall (of more recent construction) may have served as a

support for the failing joist system or to stem erosion of the dirt bank beneath the south foundation wall. It forms the present south wall of the cellar entryway. The architects also determined that the west cellar wall did not tie into either the north or south wall, suggesting that it was built last. A second basement entryway was revealed in Excavation Unit 12. Quite obviously, such an entryway would not have been constructed until the cellar had been expanded.

Modesty and conservatism (which may have socio-economic implications as well) seem to have defined life at the Ray House. These attributes are suggested in apparel, ceramics, size and design of the dwelling, and in its moderate furnishings.

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Table 1. Distribution of Selected Artifacts.

	Cultural Items	% of Items in Rms. 3-4	% of Area in Rms. 3-4
Foodways			
Room 3	348	68%	57%
Room 4	162	32%	43%
Total	510	100%	100%
Clothing and Accouterments			
Room 3	186	90%	57%
Room 4	20	10%	43%
Total	206	100%	100%
Personal Use and Grooming			
Room 3	44	83%	57%
Room 4	9	17%	43%
Total	53	100%	100%



Figure 1. Photograph of the Ray House after restoration.

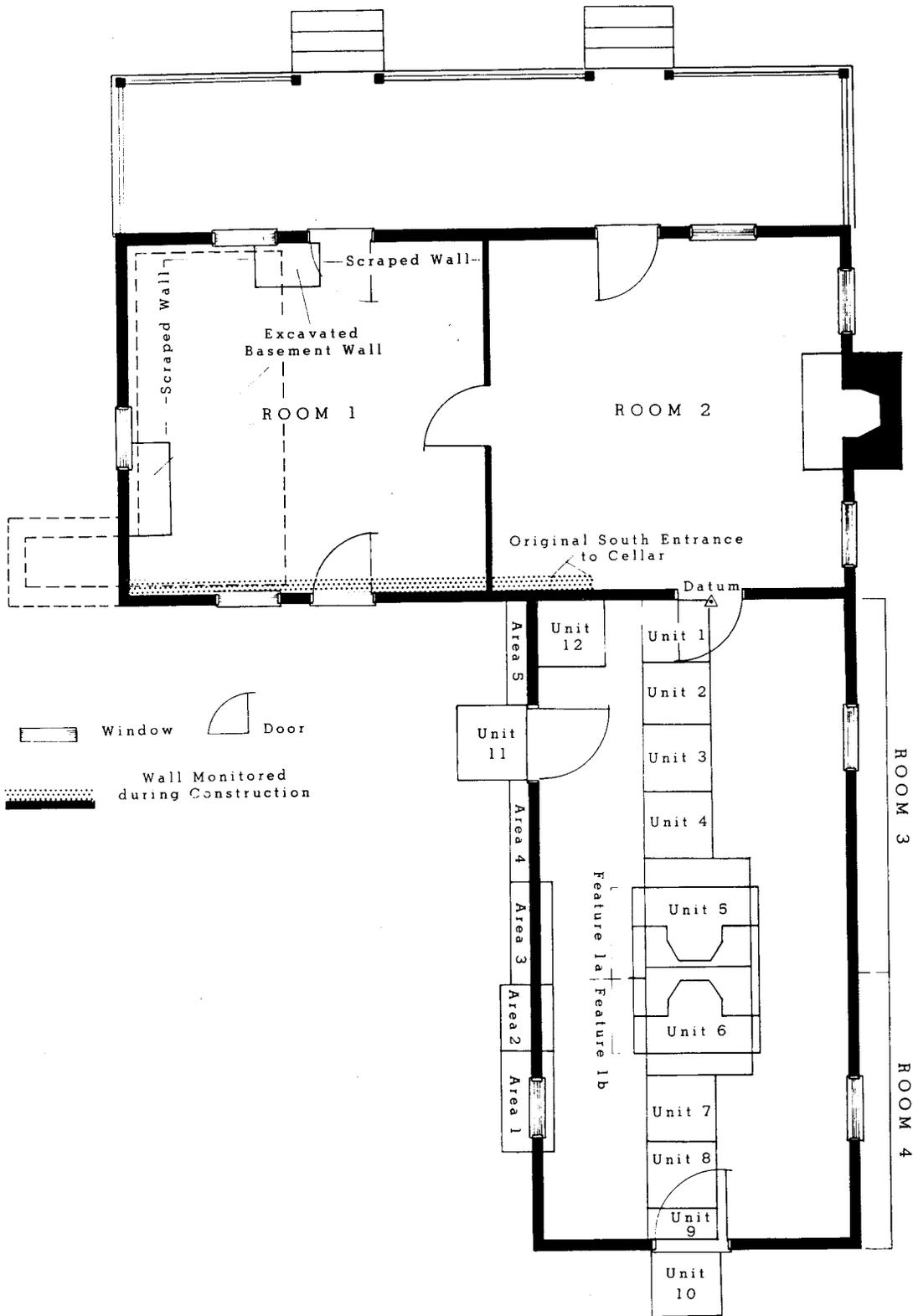


Figure 2. Base map and floor plan of the Ray House showing datum, numbered Areas and numbered excavation Units.

JOHN A. RAY HOUSE
 FLOOR PLAN, ROOMS 3 & 4
 23GR233

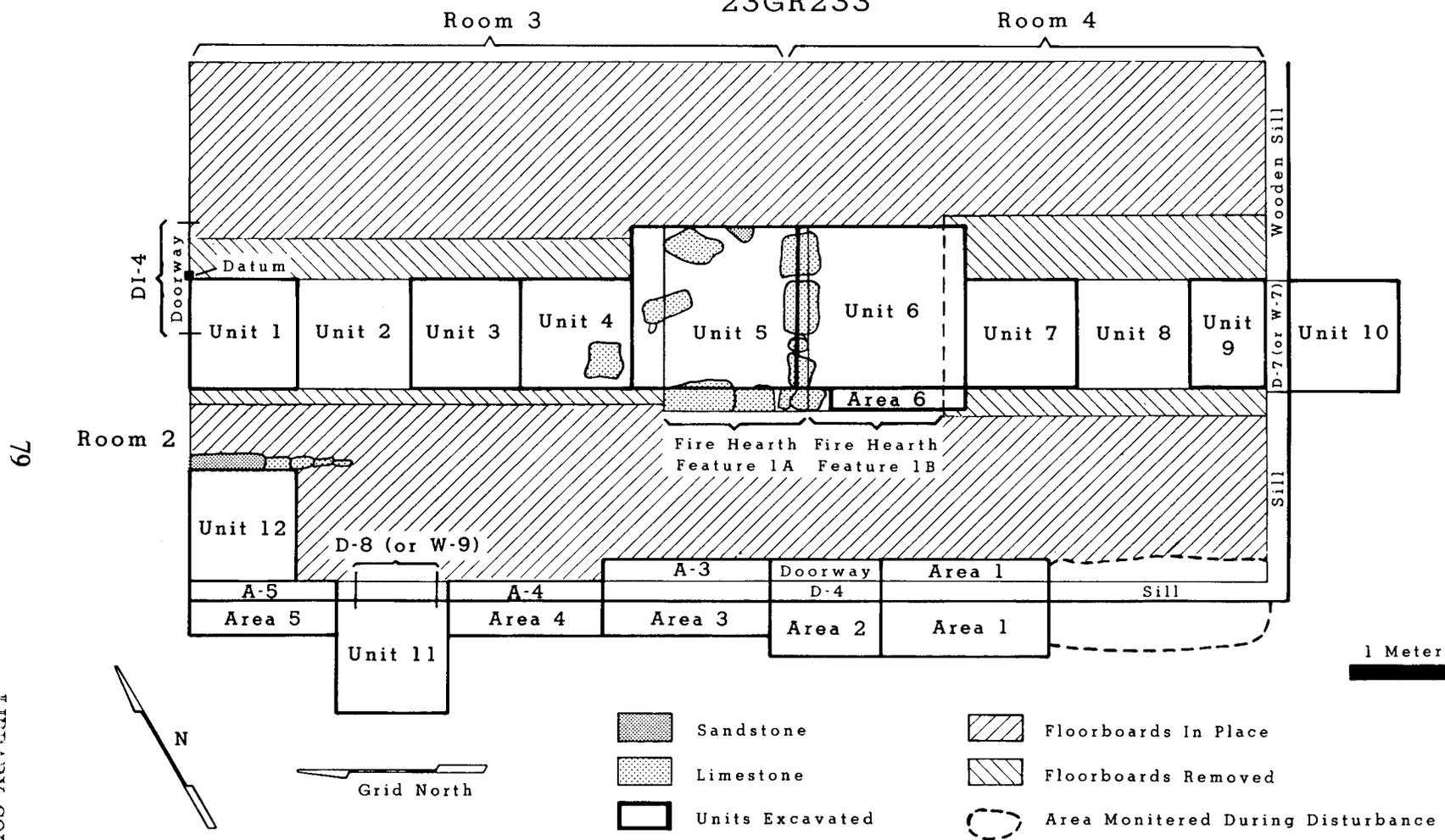


Figure 3. The numbered Units and numbered Areas in Rooms 3 and 4.

JOHN A. RAY HOUSE
 PLAN VIEW OF CELLAR WALLS
 23GR233

18

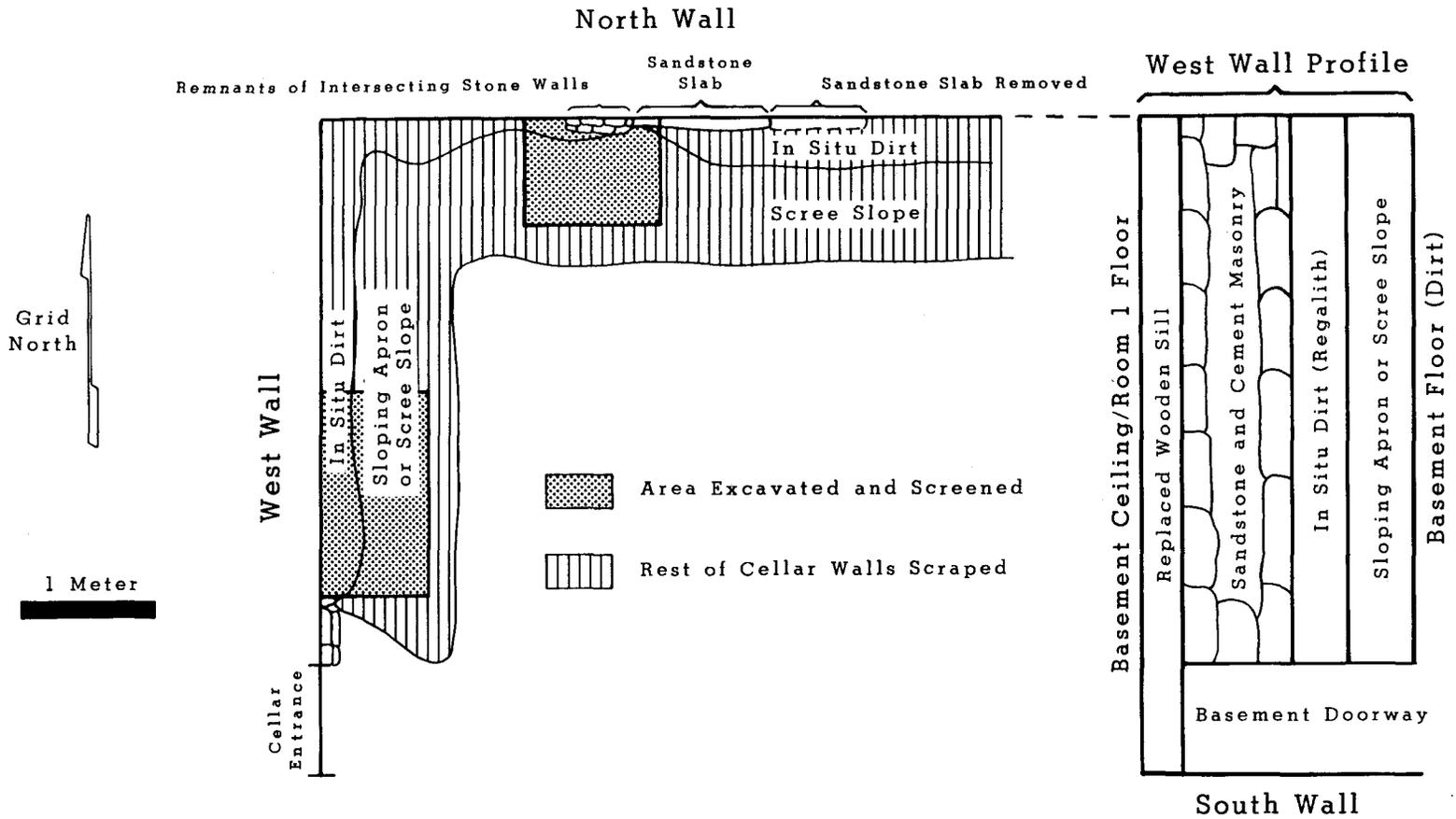
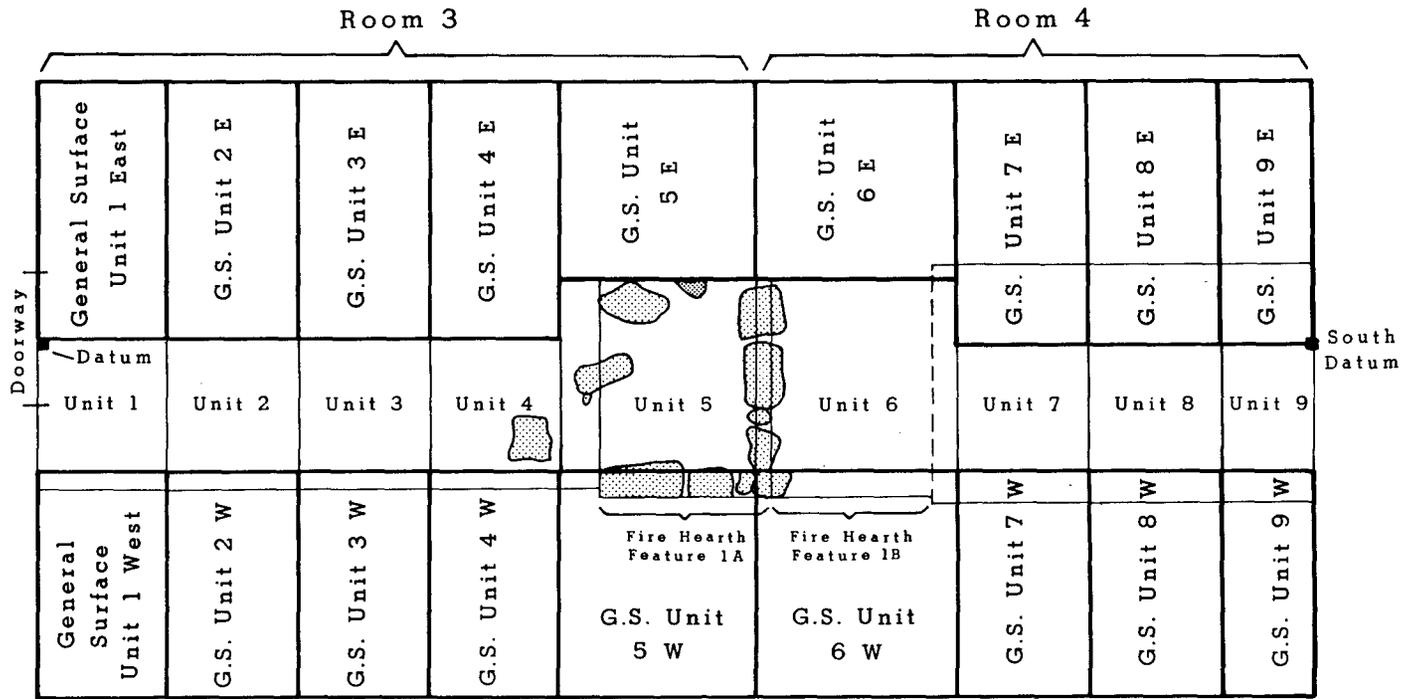


Figure 5. Plan view of the cellar walls.

JOHN A. RAY HOUSE
 ROOMS 3 & 4, FLOOR PLAN
 23GR233



08

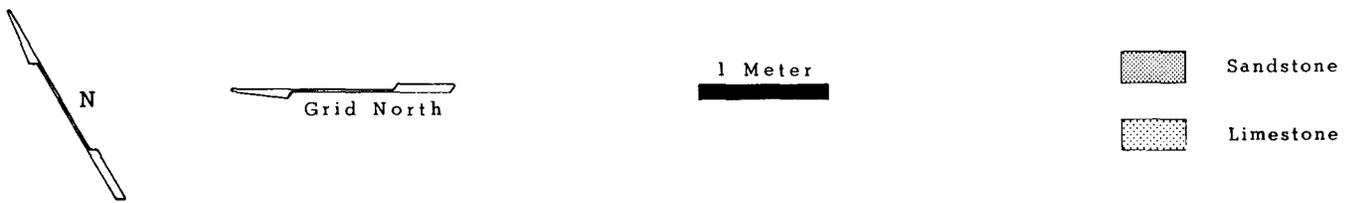
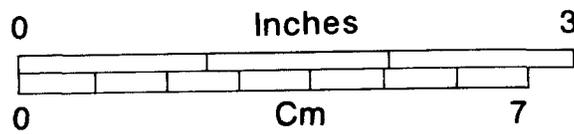
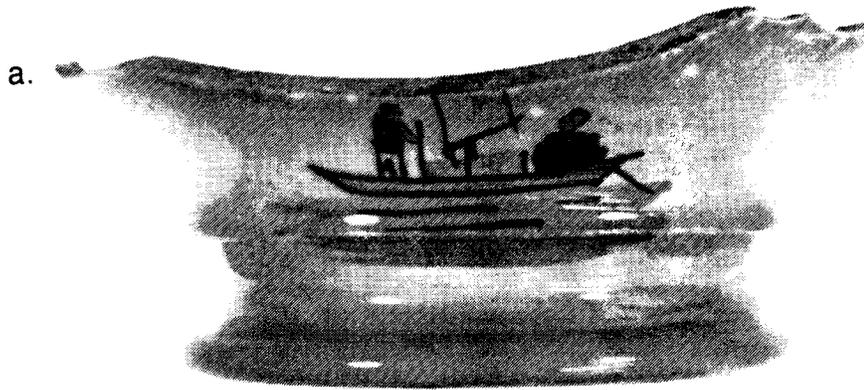


Figure 4. The numbered Units and the General Surface Collection Units in Rooms 3 and 4.



Not To Scale

Figure 6. Examples of spatterware sugar bowls. Spatterware sugar bowl with the "raft" pattern decoration, b. A complete spatter/raft sugar bowl after Greaser and Greaser.

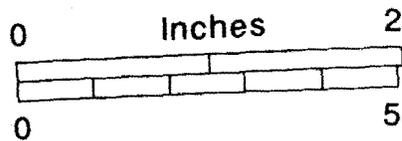


Figure 7. Examples of porcelain mugs. a. Large porcelain mug, b. Small porcelain mug.

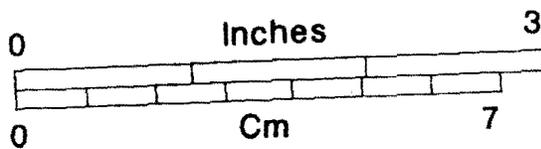
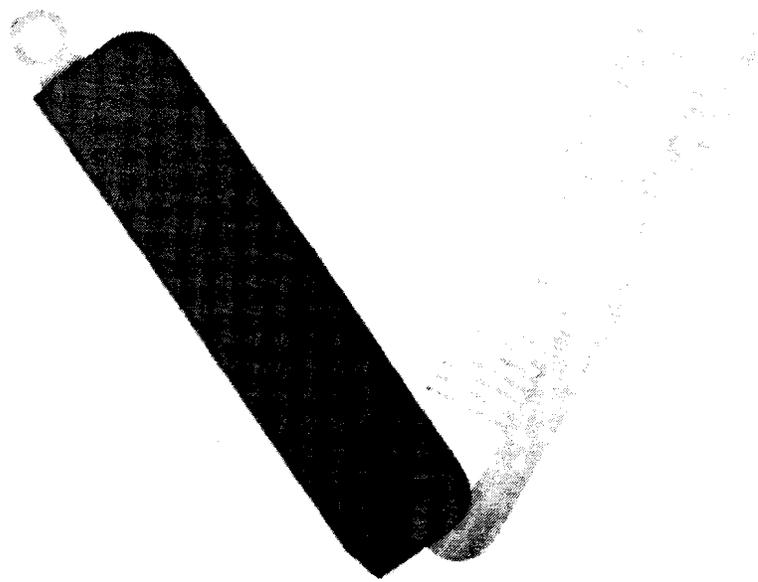


Figure 8. Folding comb.

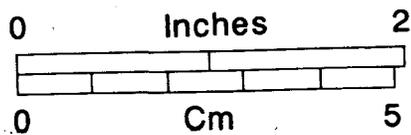
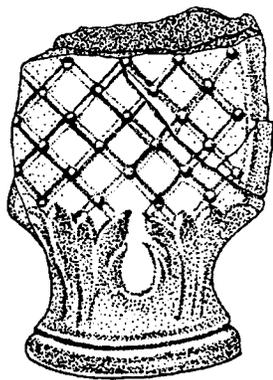


Figure 9. Perfume bottle.



Figure 10. Aluminum trade token.

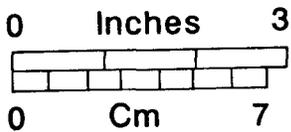
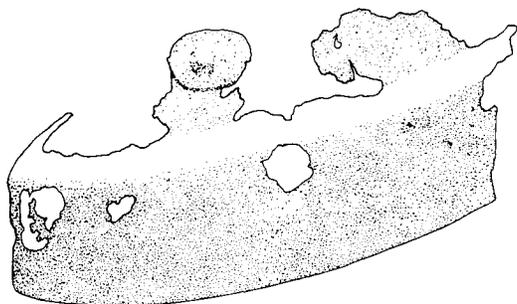
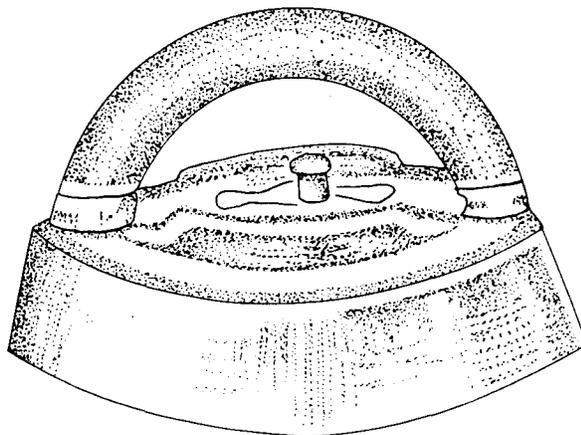


Figure 11. Toy sad iron fragment.



Not To Scale

Figure 12. "Mrs. Potts"-style Sad Iron.

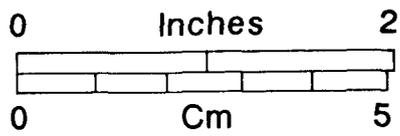
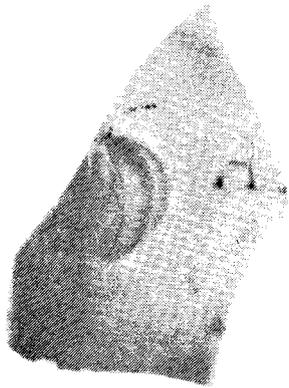


Figure 13. Bisque doll head fragment.

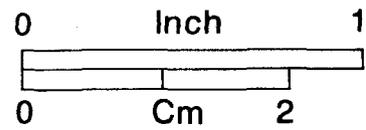


Figure 14. "Boat"-shaped solid glass doll eye.

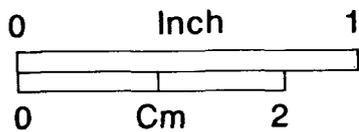
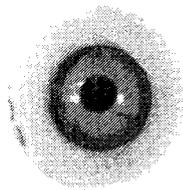


Figure 15. Blown-glass doll eye.

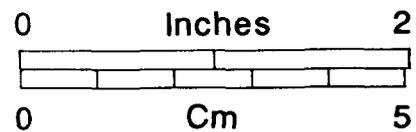
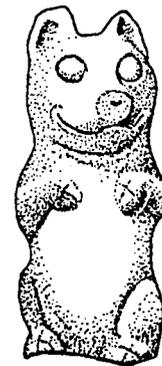


Figure 16. Bisque pig.