

ARCHAEOLOGY OF THE DAM-KEEPER'S HOUSE

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David B. Daly
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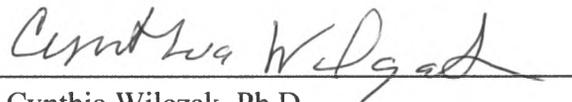
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CERTIFICATION OF APPROVAL

I certify that I have read Archaeology of the Dam-Keeper's House by David B. Daly, and that in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of the requirement for the degree Master of Arts in Anthropology at San Francisco State University.



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ARCHAEOLOGY OF THE DAM-KEEPER'S HOUSE

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2016

This thesis will address the research question: “What can the archaeological and historical record for the Searsville (CA) dam-keeper house site tell us about the historically hidden lives of San Francisco Bay area working class families during the Gilded Age?” My research offers insight into the often-invisible subaltern lives of the working class, including analysis of the similarities and differences between generations of dam-keepers and their families, their relationship with the corporation that employed them (the Spring Valley Water Company), and the way in which their lives were structured and transformed by trends of corporatization and the changing landscape of resource – both natural and human – exploitation.

I certify that the Abstract is a correct representation of the content of this thesis


Chair, Thesis Committee

12/16/16
Date

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Introduction: Ordinary Lives in a Gilded Age

On the peninsula that stretches west of the San Francisco Bay, there is a sun-beaten bluff above a lake, where dry grasses gently susurrate in the wind across long, hot summers. At first glance, it looks like a landscape little touched by time. A dirt road and a distant biological field station—relatively modern developments—sit nearby, but there are few other signs of human presence, and the oak trees surrounding the grassland look old and nearly as well-established as the large stones on the hillside across the water.

Yet the landscape witnesses more than the passing of birds, insects, and small animals: it is testament to nature's ability to erase the temporary acts and lives of humankind. Over a hundred years prior, in the waning years of the nineteenth century, the grasses were trampled under the feet of horses and cows, and of children at play. A plain, white, one-story house stood behind them, surrounded by a white picket fence. Next to the house, a woman tended a small garden. Her husband crossed from the house to the top of the bluff overlooking the lake, and began to work his way down to the water along a steep path cut into the hillside. As he descended, his destination came into view: the top of a dam, whose concrete mass was responsible for keeping the waters of the lake in check. The lake, which from a distance might appear to be a timeless feature of the landscape, was in fact a recent product of human industry. From the top of the dam, the man's gaze swept down its sixty-foot concrete block face to the bottom, where the water cascading over the top plummeted into a pool below, then moved away to the north in an energetic

streambed. It was the 1890s, and he was the dam-keeper. His place of work was his place of living: the white house on the bluff was his family's home.

He lost his life on the stark face of the dam. Six years after his arrival, while taking a shower in its spray, he slipped and fell; his broken body landed in the pool below. His family buried him in Union Cemetery in Redwood City, ten kilometers distant. Today, his wooden grave marker sits at the very back of the cemetery near a worn chain link fence, weathered and decaying. A quarter of it is missing entirely. The words on its face have become nearly illegible (see Figure 1). The story of his life is nearly lost, as well. The only stories we have today are two short newspaper accounts of his death, and a brief, unsourced anecdote from a local historian (*San Francisco Call* 1897a; *San Francisco Call* 1897b; Regnery 1991). He, his family, and their lives on the bluff over the dam and lake are nearly lost to time. It is a loss representative of larger lacunae in our understanding of ordinary lives in a Gilded Age.

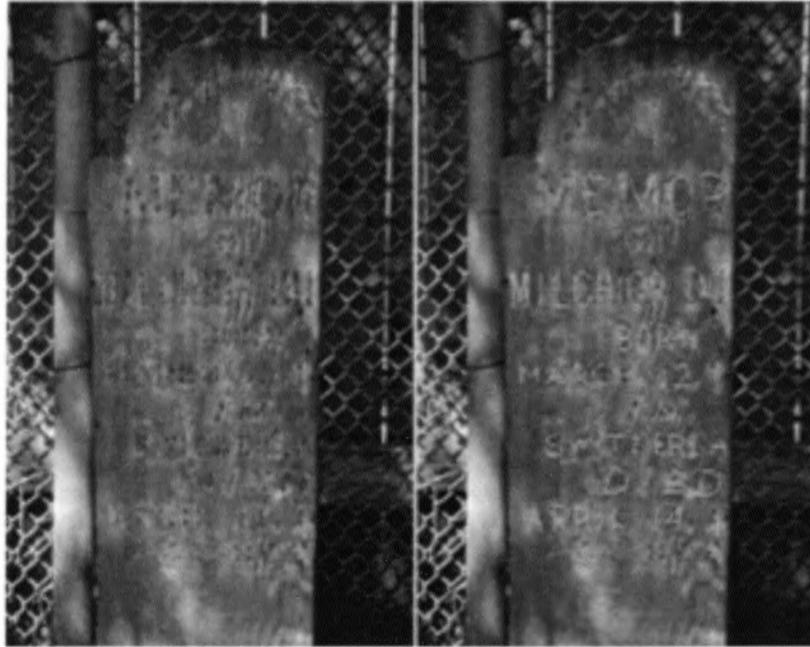


Figure 1. The weathered and nearly illegible wood memorial marker for Melchior Duerst (1858-1897). Image courtesy of Historic Union Cemetery, Redwood City, CA.

Taking a step toward addressing these lacunae is the central purpose of this thesis. Its corresponding theoretical challenge is how best to go about recovering lives that have left virtually no historical trace. The fundamental premise of the arguments that follow is that the archaeological imagination can help us reconstruct the lost everyday lives of common people during the American Gilded Age. Archaeology reveals essential information about the ways in which they worked, played, ate, smoked, learned, cared for the body, and even, most speculatively, how they may have thought and felt about these activities.

I focus on the lives of two families who lived on the bluff above the dam: that of the first keeper of the Searsville Dam, a Swiss immigrant named Melchior Duerst, his wife Frieda (also a Swiss immigrant), and their little girls Hannah and Elsie, who were in

residence at the dam from 1891 to 1897; and that of the native-born second dam-keeper, Edgar Batchelder, his wife Emeline, and their children Edgar Jr., Albert, and Lucy, in residence from 1897 to 1906. The moment in which they lived, at the end of the nineteenth century, was a period of great inequality—economic, political, and social—in the United States. It was the era of so-called Great Man history, in which contemporaries viewed historical change and historical significance as wrought largely by individual white men of power, vision, and genius—“the History of the world is but the Biography of great men,” the Scottish writer Thomas Carlyle infamously declared (Last 2013, 156; Carlyle 1840, 34).

The people categorized as great were male and white, usually socially and economically privileged, and always endowed with cultural values of hard work, moral probity, and exceptional genius (Ball 2014, 3–5). Well into the latter half of the twentieth century writers’ pens tended to focus on recording the lives of such men, and photographers’ lenses on capturing their achievements and glamorous or otherwise memorable lifestyles (Ball 2014, 3–5). The emerging field of audio recording (first pioneered by Thomas Edison’s phonograph in 1877) focused not on recording the stories of individual people, but on mass-producing widely popular music for bulk consumption. In such a framework, in which so much effort went into chronicling the details of a few individuals’ output and idealized life stories, “common lives” could be taken to encompass a broad swath of human society, from the poorest members of the working class, living cramped lives in small rural houses or city tenements, to more comfortable

middle class members of society (Shrock 2004, 66–67). The dam-keepers and their families fell somewhere in the middle; a position I establish in the thesis following by examining the archaeological and historical record of their lives in the context of previous research examining similar, contemporaneous Bay Area residential sites: the Cypress Archaeology Project in Oakland (1994-1996), and the West Approach Project in San Francisco (2001-2003) (M. Praetzellis and Praetzellis 2004b; M. Praetzellis and Praetzellis 2009).

The archaeological vestiges of the dam-keeper families present challenges and opportunities. One of the greatest challenges is the nature of my data set, which consists almost entirely of artifacts recovered from the families' trash pit by the Stanford University dig team, including myself, in the summer of 2012. The Stanford dig team excavated 34 additional units outside the pit. The latter units, however, produced little trace of the dam-keeper families' lives. Other than nails and window glass we found no artifacts or other traces of the house itself. This is not a surprising result when taken in its historical context: working-class homes in this period were usually constructed on low earthen berms rather than brick or concrete foundations. When they were no longer of use in one location, they were sold, and either dragged wholesale to a new location, or carefully dismantled in order to salvage every piece of wood and re-usable nail or hardware for new building projects (Faulkner 2004). Both approaches left very few vestiges of the home's existence; nails and broken glass were typical remnants of the removal and dismantling processes. Erasure was built into the social and economic fabric

of working-class society. We have no record of what ultimately became of the dam-keeper's home.

The erasure, forgetting, and often outright disregard for working class lives that I have outlined above all point to the difficult and exciting theoretical question at the heart of this thesis: how can one reconstruct and re-evoked lives that left so little trace? I combine a set of theoretical concepts and methodological approaches from the past four decades of work in historical archaeology to offer an approach that uses imagination—guided by close analysis of individual archaeological artifacts, available historical records, and exploration of the cultural constructs in which those artifacts were entangled—to reconstitute the lives of the dam-keepers and their families as something more than a dry field report.

Speculation and imagination are every bit as essential to archaeology as they are to any other historical science or historical social science. The very act of contemplating, much less drawing conclusions about, an unobserved (and unobservable) past requires a faculty of virtual witnessing, guided by those remnants of the past that do remain with us today. For historical archaeologists, these tend to be physical artifacts, site features, and historical records. But imagination does something more than simply facilitate contemplation of the past. As the archaeologist Janet Spector pointed out in *What This Axl Means* (1993), a path-breaking work of feminist archaeology, imagination also engenders empathy for, and connection to, our archaeological subjects. Another useful way of saying this is that imagination and empathy point archaeology toward the study of

human lives in their entirety, and in their individuality. This reminds us of the existence of human subjects of archaeological study as feeling individuals with rich, multi-layered stories, as opposed to data points reducible to data tables and academic jargon. As Spector persuasively argued, any archaeology based on reducing people to simple categories based on the typologies of baskets, spear tips, or building materials was a profoundly impoverished way of looking at the past (Spector 1993, 1–10).

What kind of archaeological imagination should we then develop? The possibilities are wide-ranging, extending from more traditional accounts in which the imagination often invisibly undergirds ostensibly non-fictional archaeological descriptions, to fictional accounts of archaeological subjects, to artistic interpretations in audio, video, and artistic media (Van Dyke and Bernbeck 2015). In this thesis I develop a blended model, in which I combine some conventional archaeological methods of description, categorization, and analysis with a moderately speculative, imaginative approach to the meaning and use of physical artifacts vis-à-vis the cultural and physical space in which people lived. My exploration of the Searsville dam-keeper house site invokes imagination at different levels of analysis. For example, to infer the past existence of complete, intact artifacts from only small, partial, or even singular fragments recovered at the excavation requires imagination to reconstitute the whole: those complete artifacts are no longer extant. In this, the imagination is guided by historical sources (such as a patent associated with numbers on the surviving shard) or existing archaeological knowledge of contemporary object types. A close analysis of the artifacts—their material composition, decoration,

maker's marks, residues, and other features—shapes speculations regarding their use. I generally begin my analyses of individual artifacts here with close analysis of the physical object, using facts, figures, diagrams, and details as a foundation from which to expand and develop the archaeological story into more than a clinical field report.

My archaeological approach expands into the realm of imaginative narrative possibilities through the guidance of other archaeological studies and their results, particularly studies of sites geographically and temporally similar. Non-contemporaneous archaeological studies, meanwhile, sometimes offer methodological and analytical insights, especially when they faced similar essential challenges of analysis and interpretation. Janet Spector's *What This Awl Means*, for example, explores one possible approach to creating an archaeological account of people whose individual lives have been lost to time. In my theoretical framework, I frequently guide the imagination by integrating discussion and analysis of available historical primary and secondary sources, which provide essential context and point toward speculative possibilities. These sources reveal features of the cultural lens through which members of the Searsville families interpreted and interacted with the world. These include historical features of the families' immediate geographic area—such as the demographics of European settlement in the Searsville area, or the presence of, and suspicions toward, racial minority groups on the San Francisco Bay Peninsula—as well as larger transformations of cultural currents with powerful consequences for the individual or family, including patterns of American consumption, advertising, industry, medicine, and sociability, among others.

I approach the cultural embeddedness of the artifacts—and the lives associated with them—through the analytic categories of race, gender, and socio-economic class. This triad has rightfully played a vital role in late twentieth- and early twenty-first-century humanities fields. While some scholars have argued for the importance of one of these categories over the others (Roediger 1999, 13; Harrison 1998; Smedley 1999), or even that the categories themselves are no longer useful (Pakulski and Waters 1996; Gilroy 2000), I believe the most interesting and promising possibilities for the speculative component of this project lie at their intersection and in their totality. As several archaeologists have observed, considering these categories together is essential to understanding their interplay and the way in which their individual dynamics relate to the wider world (Leonardo 1998; Franklin 2001). Others have shown how archaeology can provide a unique perspective on these categories of analysis (Deetz 2010; S. Jones 1997, 27; McGuire 1982; Orser 2001). Together, they evoke the wider and more complex world of mind in the lost lives of the dam-keeper families, and they allow us as archaeologists to delve more profitably into close analyses of individual artifact objects.

These categories of analysis are newer to the field of archaeology than one might hope. It was only in the past four decades that feminist archaeologists revealed the profound bias of the predominantly male field of archaeology, which had up until that point focused almost exclusively on men as the center of their analyses (Spector 1993, 7–8). As recently as the turn of the new century, race and class were still relegated to the status of “ghost concepts” in historical archaeology (Wurst 1999, 7). In part, twentieth-

century archaeologists were disinclined to pursue these lines of inquiry because they require an associated set of approaches that veered away from the heroic pursuit of artifacts and their numerical, taxonomic categorization. Yet casting a net outside material traditionally viewed as archaeological can help archaeologists overcome the sense that the past is too distant to know very well, moving us closer to our archaeological subjects as people rather than abstracted, typologized data points (Spector 1991, 3; M. Hall and Silliman 2006). The field of historical archaeology has recognized and embraced this idea over the past few decades, and offers a rich and varied interpretive structure vis-à-vis historical sources (Deetz 2010; Andrén 1998; M. Hall and Silliman 2006).

This is an unavoidably subjective interpretive process, of course: both primary and secondary historical sources must be read in light of each author's identity, context, and intent, with awareness that we all have our own subjectivities and biases. The San Francisco Bay area primary sources on which I draw—including newspaper articles, advertisements, humor pieces, store ledgers, maps, population censuses, books, university records, and water company business accounts—were each created by individual people with their own social, religious, political, racial, scientific, and other assumptions and biases. They had specific audiences, and personal intentions (Galloway 2006). Nor, of course, am I myself immune to the same subjectivity. One of most fundamental concepts in anthropological and historical method is Pierre Bourdieu's well-known observation that anyone who wishes to know something or someone, some time or some place, must first understand their own assumptions, biases, and relationship to that which they wish to

understand (Bourdieu, Chamboredon, and Passeron 1991, 13–14). Although our own subjectivity is ultimately impossible to perfectly escape, I do acknowledge myself in the story that follows to explore the speculative possibilities of their inner lives, while maintaining awareness of my own biases and worldview.

This thesis consists of eight chapters, logically sequenced to take the reader from the foundational context of Searsville’s history as a place of constant transition and the interdigitation of rural and industrial, to an immersive tour of the archaeological site, to a series of close encounters with individual artifacts and their complex meanings to the members of the dam-keeper families. In Chapter 1 (“History”), the gross inequalities and potent transformations of the late nineteenth and early twentieth centuries—including immigration, urbanization, and resource exploitation—are examined, and their effects on the San Francisco Bay area in general and the Searsville area in particular are analyzed. I present late-nineteenth-century Searsville as a place in transition, its rural landscape powerfully shaped by the presence of a single industrial object: the dam. Industrial power and corporate operations structured the daily rhythms of life for the dam-keepers, their wives, and their children. Nonetheless, the site was not covered in smokestacks and industrial machinery: it otherwise maintained its rural character, and this rural character profoundly shaped the families’ experience of home life, work, food, leisure, illness and the body, and childhood.

I consider what more we might learn about the dig location in Chapter 2 (“Site”) by connecting the traditional present-tense description typical of a field report to an

imaginative recreation of the physical and temporal perspective of Melchior Duerst, the first Searsville dam-keeper. On first blush, many of the elements of the site would appear unchanged between the summer of 1892 and the summer of the excavation, 120 years later. However, through the counterposing stories of the intervening land uses (which hid the house site under new layers of dirt) and archaeological excavation (which removed those layers), the story of 120 years gives way to the presentation of the artifacts of the dam-keeper house trash pit. The combination of present- and past-tense description reveals the natural and man-made processes of erasure that have helped to render these families lost to time.

In Chapter 3 (“Stove Door”), I use the remains of a stove door damaged in an unexpected and violent household explosion to access the world of homemaking, taste, and diet. This is the most traditional of the chapters, with a detailed categorization and analysis of the food habits of the Duerst and Batchelder families through artifacts in the trash pit (including faunal bones) and historical primary source material from the purchase ledgers that survive from the local Woodside Store. Yet, because the stove was used to heat the house and to boil water for cleaning, in addition to its culinary applications, the stove door also allows entry into the very hub of Gilded Age domestic life—and the so-called “Cult of Domesticity” or “Cult of True Womanhood” that flourished during the Gilded Age (Welter 1966, 152). The choice and preparation of food offers a window into the daily lives of Frieda Duerst and Emeline Batchelder: a gendered role that structured their lives in relation to the structures imposed on their husbands’

hours by the water company. The stove door offers our only direct story from the lives of the Duerst family: a local historian recorded that it exploded after Melchior Duerst filled hollowed-out wood in the woodpile with gunpowder, hoping to give a wood thief a nasty surprise. Instead, the surprise was for his unwitting wife, who placed the gun-powdered wood in the stove to cook. The ensuing explosion destroyed the stove and blew a hole in the roof of the house.

In Chapter 4 (“Pipe”), I examine another gendered object: the tobacco pipe, an artifact overwhelmingly associated with men. Further, the pipe material—white clay—had a distinct relationship with socioeconomic class. I examine the personal activity of smoking tobacco and what its various embodied experiences reveal about the lives of the dam-keepers in comparison to those of other social classes. The clay pipe pieces are also a testament to the emerging corporate power and consumerism of the Gilded Age: with the expansion of industrial production capacity and shipping networks (including the Transcontinental Railroad, completed in 1869), it was possible for corporations to manufacture an enormous quantity of inexpensive goods, to advertise them widely, and to ship those goods across the country or around the world. For consumers like the Duerst and Batchelder families, these twin developments in production and shipping brought with them the concept of disposable goods: the low cost of mass-produced pipes went hand-in-hand with the need to purchase replacements each time one of them almost inevitably broke.

Chapter 5 (“Bottle”) considers an unassuming medicine bottle. The bottle’s simple shape and uniform material and color belie the fact that the medicine bottle was far more than a receptacle for liquid: it was also a receptacle for the hidden assumptions, hopes, and fears of the dam-keeper families about the well-being of the body. I use concepts of health, illness, and cure to address a fascinating question: what was their outlook on, and experience of, their bodily existence? I analyze the way in which contemporary advertisements played on, and helped to create, the lens through which individuals viewed their body and the conditions that could afflict it. That lens was also influenced by gendered conceptions of health. Women, for example, were portrayed as delicate, and recommended bed rest and appropriately light or delicate medicinals. The purview of female medicinals, I show, overlapped with the demands of personal beauty. Men, by contrast, were often prescribed a stout and hardy remedy and a rush of manly activity, in order to properly reconstitute the masculine body (Gosling 1987). I speculate that both male and female members of the dam-keeper families probably viewed the health of each part of the body as interconnected with other bodily regions, such that cures for an ailment in one part of the physical body could be plausibly addressed by the same medication used for other parts and complaints—a view suggested by the presence of numerous cure-all patent medicine bottles throughout the families’ trash pit. The booming patent medicine industry of the late nineteenth and early twentieth centuries produced a few remedies that may have actually worked, some that had no effect, and many others that did more harm than good (Starr 1982, 128–29). I analyze the

identifiable medicine bottles in the trash pit to reveal which types of complaints most frequently bothered the Duersts and Batchelders, and why.

In Chapter 6 (“Domino”) I explore the essential ambiguity inherent to the interpretation of physical artifacts—in this case, three dominoes. The categorization of artifacts tends to place each in a simple, exclusive category, in this case, simple gameplay. Yet many objects in our own lives have multiple purposes, or are put to unexpected or socially radical uses by each of us as individuals, and the same was true in the past. The dominoes we pulled from the ground, like other artifacts, were embedded in the cultural mores of the late-nineteenth-century American west. The domino had multivalent cultural and especially moral meanings for contemporaries—in this case, moral valences both positive (a benign game for families and children) and negative (a gambling game, one particularly associated with a racial other, the Chinese). I examine the way in which dominoes’ generally benign public reputation was often co-opted as a cover for gambling. In the Bay Area in the Gilded Age, domino gambling was strongly associated with Chinese immigrants, a racial minority regularly blamed for job loss and social ills. At the same time, however, gambling with dominoes among the white population was largely ignored by both law enforcement and the local press. This cultural context adds a complex layer to our interpretation of what domino play meant to the Batchelder family, and the way in which the family used them.

In Chapter 7 (“Doll”), I consider how dolls—common to both the Duerst and the Batchelder households—yield insight into the lives of children. Children’s lives are an oft

overlooked demographic in the archaeological literature, where they are treated either as insignificant or as minor agents in the deposition of archaeological remains. Their internal lives are even less frequently considered. I use the remains of the children's dolls to defamiliarize the familiar, cutting through stereotyped associations between dolls and idealized nursery play to reveal a late-nineteenth-century world of children's imagination in which considerations of illness, injury, and mortality were as embedded in doll-play as those of nurturing new life. I examine the way in which such play was structured by adults, and by the doll stories written by adults, who used such stories as a medium through which to instill social virtues, and through which racial, gendered, and socio-economic divisions were reinforced. At the same time, however, I reveal the ways in which children subverted adult purposes and the expectations associated with gender, age, power relationships, and other norms.

Sound, one of the most transitory aspects of human existence, is re-evoked from silence in Chapter 8 ("Harmonica"). I explore the way in which we might imagine the particular sounds and meanings of the harmonica in particular, but also its relationship to the wider Searsville soundscape (Schafer 1993). Contrary to pervasive modern stereotypes that frame the harmonica in terms of both a romanticized rural idyll and rugged, individual American manhood (Titon 2002; Fawell 2005; Proulx 2005; Tsika 2007; Bandy and Stoehr 2012; Kalinak 2012), I argue that the harmonica in the late-nineteenth-century Bay Area was associated with a much less inward-looking frame of mind, with advertisements, books, and contemporary newspaper accounts framing it as a

worldly and flexible instrument. Depending on its context, the instrument was at once a possible path to “correct” sociability (as advanced in self-teaching manuals, or in blandly approving newspaper accounts of performances at church socials, school events, and community celebrations), or an indication of racial, ethnic, or gender otherness. These included racial representations that used the harmonica as a symbol for the alleged laziness of black Americans, its appearance in complaints about (or other observations of) the Native American poor, and its association with exotic or humorously deranged women. I also explore the evolution of the Searsville soundscape in tandem with the evolution of the physical landscape. The transformation of the shady redwood forests that had stood on the site less than a century prior into hot, grassy scrub oak lands was attended by dramatic changes in sound. But sound also provides a medium through which to acknowledge and explore the finer-grained transformations of the families’ daily lives; that is, to consider their lives on the “scale of lived action” (Bailey and Simpkin 2015).

The title of this thesis is “Archaeology of the Dam-Keeper’s House.” The “dam-keeper’s house” was the way in which the Spring Valley Water Company (the Searsville dam owner and operator) referred to the home on the bluff. Yet the title exposes another way in which the process of erasure takes place: the home’s designation was generic rather than specific to those who lived there; it defined residence in male rather than female or familial terms; and it abstracted even the individual male into his job title. Part of the purpose of this thesis is to challenge the implicit emphases of “the dam-keeper’s house” by turning our eyes, ears, and other senses toward all the members of both

households, and toward life beyond the framework of male labor. Then, not only the dam-keepers (Melchior Duerst and Edgar Batchelder), but also the women and children—Frieda Duerst and her little girls, Hannah and Elsie, and Emeline Batchelder and her children, Albert, Edgar Jr., and Lucy—will once again emerge as living, breathing people, who viewed and interacted with the world around them at the pace of ordinary life in complex, vibrant, and both familiar and unfamiliar ways.

Chapter 1: History

Part I. California in the late nineteenth century: the Gold Rush and boom towns

The time period between roughly 1870 and the turn of the twentieth century in the United States is referred to as the Gilded Age, a memorable name coined by Mark Twain in his satirical novel *The Gilded Age: A Tale of Today* (1873). The apparent opulence and economic success of the time was, in Twain's view, nothing more than a thin layer of gilding that masked serious underlying social problems and poverty, particularly among the working classes.

The working classes felt the tidal changes effected by three of the most powerful forces of the age: immigration, urbanization, and resource exploitation—each of which transformed society, and each of which influenced and was influenced by the others. Although the country experienced rapid economic growth during the period, the fruits of this expansion were concentrated in the hands of a few industrialists and financiers, making the Gilded Age a period of enormous inequality and poverty. Immigrants from Europe poured into cities on the East Coast (particularly New York and Boston), the Midwest (particularly Chicago), and California—the latter joined by immigrants from China, who arrived to work in large construction projects, particularly the railroad (Martin 2010, 88, 93). The other great immigration story of the period was that of the flow of families from east to west. Unskilled individuals among the new arrivals became laborers in the new and growing American cities, and to build and serve the growing infrastructure and industry that supported dynamically growing cities like San Francisco

(Martin 2010, 112). Immigrants to cities often arrived from rural America, as well, as factory-built farm machinery replaced manual labor in the fields (Trachtenberg 2007, 53).

At the center of the social and economic changes were the railroads. Not only was their construction and operation a lucrative business, but their operation also facilitated the growth of other industries, such as meat-packing in Chicago and citrus groves in Southern California (Cronon 1992, 234–35, 248; Henderson 2003, 64–66). The ability to move large quantities of goods cross-country in a matter of days ushered in an era of mass-production and mass-distribution. It also connected rural areas to the metropolis.

Historical scholarship has tended to study the Gilded Age from the standpoint of eastern American metropolises (particularly Chicago, New York City, Philadelphia, and Baltimore) By contrast, western population centers, particularly the San Francisco Bay area, remain relatively little examined. Additionally, much has been written about the wealthy and influential—the industrialists and politicians—in contrast to the working-class, especially in California. One notable exception to this trend is the historical archaeological projects on Gilded Age San Francisco and Oakland led by Mary and Adrian Praetzellis at Sonoma State University.

Overview of Gilded Age California Archaeology

The Anthropological Studies Center at Sonoma State University (Rohnert Park, California) has published two reports by the Praetzellis that are particularly germane to the study of common lives in Gilded Age California (A. Praetzellis and Praetzellis 2004; M. Praetzellis and Praetzellis 2009). Their findings shed light on the differences in

material culture among different socioeconomic levels, from the poorest members of the working class, living in cramped and decrepit shared shacks, to the lives of the upper-middle class, whose lives unfolded in spacious and well-maintained Victorian-style homes. Their study site was an unprecedented archaeological excavation comprising 22 city blocks in Oakland, California, and eight city blocks in San Francisco, a vast project made possible by the rebuilding of Interstate 880 in Oakland after the 1989 Loma Prieta earthquake and the seismic upgrade of sections of Interstate 80 in San Francisco (A. Praetzellis and Praetzellis 2004, 1; M. Praetzellis and Praetzellis 2009, iii).

The Cypress Archaeology Project, as the West Oakland project was called, offers points of reference against which findings from the Searsville dam-keeper house site excavation can be compared, as well as an analytical framework in which to do so. In particular, their clear description and categorization of the most common types of home sites provides a framework in which to consider the dam-keeper's house, whose features—one-story, wood frame construction with hierarchical organization of at least five rooms, with separate rooms for entertaining and a purpose-made kitchen—correlates well with what the Cypress Archaeology Project categorizes as the “Almost-Polite [Victorian] House” (A. Praetzellis and Praetzellis 2004, 24). While not the Polite Victorian House of a wealthy professional—with multiple stories and a dedicated dining room—it was also a cut above a two- or three-room Informal Workers’ Cottage (A. Praetzellis and Praetzellis 2004, 20, 25). The geographic proximity—and the shared time period—facilitate other useful cross-comparisons, including what they ate and drank (and

how they obtained it), what health concerns they had (and how they treated them), and how they adorned their living areas. From these factual points of departure, we can consider more abstract aspects of the world view and daily lives of Bay Area working-class individuals and families, including the ways in which the lens through which they understood and interacted with the world was colored by layers of social, religious, economic, gendered, and racial belief.

What was the larger context in which workers like the dam-keepers, or their brethren across the Bay, lived and died? It is worthwhile to examine the context of the San Francisco Bay area in the Gilded Age, particularly developments related to urbanization, immigration, and resource exploitation in the Bay Area.

Part II. Resource Exploitation in the Bay Area in the Gilded Age

Both increasing urbanization and growing industrialization required natural resources. Resource exploitation was not a new feature of human habitation in the Bay Area; archaeological evidence shows that the San Francisco Peninsula has been inhabited for more than 7,000 years (Winsborough et al. 2015). Native American groups such as the Ohlone managed numerous types of nuts and seeds, as well as game, fish, and shellfish (Bocek and Reese 1992, 7). The 1770s saw Spanish colonizers establish Catholic missions at San Francisco (1776) and Santa Clara (1777), a presidio at San Francisco (1776), and a pueblo at San José (1777) (Milliken 1995). In 1831, Mexico gained independence from Spain, with the new Mexican land-holdings extending up the California coast. In 1833, the Mexican government secularized the missions, turning their

land holdings into large private ranchos, which, in turn, led to new patterns of resource exploitation marked by more intensive use of the land for cattle and farming. In little more than a decade, California changed hands again, as the United States took control in 1848, following the Mexican-American War. In the waning days of the war, gold was discovered near Sacramento, sparking a mass migration, which in turn increased the exploitation of natural resources in the San Francisco Bay area—particularly gold, timber, and water.

The drive for resources, and the transformations of land use that it wrought, were kicked into high gear following the discovery of gold at Sutter's Mill in January 1848. San Francisco, which had been a sleepy town of only 2,000 people at the beginning of 1849, was a bustling city of 25,000 to 30,000 by the close of 1850 (Holliday 2002). Even though Sutter's Mill (as well as the later Comstock Lode) lay well inland, most of the wealth produced (in the form of gold) was shipped out through San Francisco (Fehrenbacher 1964, 39). Immigrants flooded to the area, hoping to achieve their dreams either through gold or by providing goods and services to miners. San Francisco, a new destination for immigration and a new hub for shipping and industry, developed a voracious appetite for key resources like timber and water practically overnight.

Timber

While the native inhabitants of the Peninsula had used redwood burls and sprouts in basket-making, and redwood bark for medicinal purposes, they had not exploited the redwood forests for timber (Bocek and Reese 1992). To a certain extent the Spanish town

of San Jose, the mission of Santa Clara, and the Presidio in San Francisco all harvested redwoods from the area around San Francisquito Creek. This resource exploitation remained relatively limited, however, because the population remained small, and without sawmills or sawpits to reduce the felled trees to manageable planks and boards, the Spanish loggers were forced to use teams of oxen to laboriously and slowly haul hewn beams to their destinations (A. K. Brown 1966).

The large-scale exploitation of redwoods on the Peninsula began with the Gold Rush, as explosive population growth in San Francisco and nearby towns like Oakland created an enormous demand for timber with which to build houses, businesses, wharves, and other structures. The creation of water systems also required the felling of more redwood forests: most pipes of the era were made of hollowed redwood trunks from smaller trees. Demand for wood called for more efficient means of lumbering: mechanical saw mills and gang mills (in which multiple parallel saw blades cut boards of equal thickness from logs) replaced lumbering by hand (Bocek and Reese 1992, 34–35). Over the following two decades, between a quarter and a half of the redwood forests west of San Francisquito Creek (the area around and near the Searsville dam-keeper's site) were logged (Bocek and Reese 1992, 42–43). Compounding the environmental effects of the logging, the lumbermen often set fires to clear debris and undergrowth and make for easier hauling of the logs. Although the high heat did no significant damage to the redwood logs, it killed off all manner of plants still in the ground—including stumps from which a new generation of redwoods would have sprouted—resulting in permanent

deforestation (Peirce 1901, 85–86). This was the natural landscape in which the Searsville dam-keepers would live and work.

Water

Between November 1849 and November 1850, four separate major fires destroyed parts of San Francisco's business district (Holliday 2002). In addition to rebuilding the burned swaths (which required still more timber), city leaders recognized the need for reliable sources of water for fire-fighting and approved the construction of a dozen underground cisterns (Dilling 2016). By the late 1860s, San Francisco had underground plumbing and fire hydrants; however, it needed a reliable provider of plenty of water for drinking and daily use, as well as for emergency purposes (Dilling 2016). By 1870, the population had swelled to nearly 150,000—all of whom needed a reliable source of water—and a burgeoning number of farms and orchards, which fed the city, created an explosively growing demand for water, controlled, managed, and directed. If the exploitation of wood transformed the dam-keepers' physical environment, it was the exploitation of water that ultimately placed them there, structuring the activities and rhythms of their daily lives (United States Census Bureau 1870).

Part III. Profiles of entities and individuals

Spring Valley Water Company: a monopoly's inexorable southward march

Early schemes to supply the booming city of San Francisco with water included shipping it across the Golden Gate from Marin in tanks on steam ships and pumping it from Mountain Lake at the Presidio (*San Francisco Water and Power: A History of the Municipal Water Department and Hetch Hetchy System* 2005, 3). As the former approach was cumbersome, and the latter repeatedly fell behind schedule, the city granted a franchise to the San Francisco City Water Works (also referred to as the Bensley Company) in 1856 (*San Francisco Water and Power: A History of the Municipal Water Department and Hetch Hetchy System* 2005, 3). Two years later, financier George Ensign (1822–1871), recognizing the profit in purveying water to a growing populace, sought and obtained a franchise from the state legislature. This franchise allowed Ensign's company, the Spring Valley Water Works (later called the Spring Valley Water Company) to condemn land and associated water rights for the purpose of creating a municipal water system (Brechin 2006, 76). In the early 1860s, Spring Valley built the Francisco Reservoir near Russian Hill, as well as the Pilarcitos Dam in San Mateo County and an associated water transport tunnel on the creek of the same name. By 1865, Spring Valley bought out its rival, the San Francisco City Water Works (*San Francisco Water and Power: A History of the Municipal Water Department and Hetch Hetchy System* 2005, 49). The company now held a water resource monopoly.

Over the next 25 years, the Spring Valley Water Company embarked on a relentless southward campaign of land acquisition and dam construction. New projects included a larger dam construction at Pilarcitos (1864), as well as new dams at San Andrés (now San Andreas, 1870), Stone (1871), Upper Crystal Springs (1876), and Lower Crystal Springs (1890) (*San Francisco Water and Power: A History of the Municipal Water Department and Hetch Hetchy System* 2005, 8–10, 49). In the 1870s, the water company looked to add one more watershed dam to their portfolio of resources, creating a chain of reservoirs and pipelines stretching more than 30 miles along the San Francisco Peninsula. The water company identified the site for their new dam: a narrow choke point in a small canyon, just downstream from the timber town of Searsville in San Mateo County.

Searsville: a resource town, from timber to water

The town of Searsville grew in the 1850s out of the logging camps in the area known as the Red Woods—so named because of the towering redwood forests that covered the area (Regnery 1991, 36). Two hotels opened in quick succession: one in 1852, run by Augustus Eikerenkotter (1817–1887), and the other in 1853, run by John Sears (1823–1907) (Regnery 1991, 40). The first post office for the area was likely housed in the Sears House hotel, inspiring the hamlet’s new name of Searsville early in 1858 (Regnery 1991, 41).

Searsville played host to numerous colorful characters. Town Justice of the Peace Horace Templeton (1824–1873), for instance, earned quite a reputation for winning at poker, particularly the high-stakes games held at the Sears House (Regnery 1991, 44).

When the hotel burned down in 1866, a system of wires was found in the ashes. The wires were the remnants of a card-cheating mechanism—at one end the wires would connect to the chair of a card player; the other end, meanwhile, was controlled by a confederate in the room above, who would observe players' hands through holes in the floorboards and transmit findings and strategies to the chair and player below (*Sacramento Daily Union* 1866; Regnery 1991, 42).

A map of platted lots filed with San Mateo County by Horace Templeton in 1866 showed eight extant structures covering roughly a quarter-mile square (the Searsville schoolhouse, which opened in 1854, was located beyond the limits of the map) (Regnery 1991, 52). The population of Searsville was never very large: in the 1875 *Paulson's Directory*, 120 individuals in San Mateo County were listed with a Searsville address (Paulson 1875, 329–87).

Searsville had come into existence as a consequence of the resource exploitation of the timber industry, and its fate was tied to that same industry. By the 1870s, many of the redwoods in the area around Searsville and Woodside had been cleared, and loggers consequently moved out of Searsville and surrounds, to the western side of the Santa Cruz mountains (Moore and De Pue 1974, 17–18; Bocek and Reese 1992, 38). The town was already in decline in 1878 when the Spring Valley Water Company announced its plans to construct a 60-foot dam to create a new source of water for San Francisco; over the next decade, the company purchased land that would be flooded to create the reservoir (Regnery 1991, 129 n33). In the midst of this round of land acquisitions, the

Spring Valley Water Company encountered the first of two major challenges to its plans for a drinking water reservoir at Searsville: that challenge was named Senator Leland Stanford.

Leland Stanford: industrial and political titan

The Senator, born Amasa Leland Stanford (1824–1893), was raised in upstate New York, the middle of seven brothers.¹ After practicing law for two years (1850–1852) in Wisconsin, he went west to join several of his brothers in California, selling provisions to gold seekers. In the early 1850s, the number of Stanford brothers in the Sacramento Valley fluctuated as some arrived and others, flush with cash, returned to the East. Leland Stanford's own financial and political successes fed one another. Within two years of his arrival in California, he was managing a supply shop and saloon in Michigan City and was Justice of the Peace for Placer County, just north of Sacramento (Norman E. Tutorow and Tutorow 2004, 48–53). In 1861, he was one of the “Big Four” (along with Charles Crocker, Mark Hopkins, and Collis Huntington) who founded the Central Pacific Railroad to construct the western segment of the Transcontinental Railroad; he drove the ceremonial last spike to complete the undertaking eight years later. The railway facilitated the movement of resources, including immigrants, and supported coastal industry. His political power grew in step with his industrial might. In 1861, Stanford was elected governor of California; in 1885, he was elected to the United States Senate.

By the 1880s, Leland and Jane Lathrop Stanford (1828–1905) owned three substantial residences in California: a mansion at N Street and 8th Street in Sacramento, another on

San Francisco's Nob Hill, and a third country estate on San Francisquito Creek, which Leland used to pursue his interests in breeding race horses and making wine (Norman E. Tutorow and Tutorow 2004, 436–530).² To secure water for the stock farm—which covered more than 5,500 acres in 1883—two of Jane Stanford's brothers (acting as agents of their brother-in-law) incorporated a water resource corporation known as the Manzanita Water Company (Norman E. Tutorow and Tutorow 2004, 404–14).

When Leland and Jane Stanford's only child—Leland Stanford, Junior (1869–1884)—died of typhoid, they decided to devote their substantial wealth and the land of the Palo Alto country estate to founding a university in his memory. The stock farm lay roughly six kilometers directly downstream from the declining town of Searsville and the new reservoir proposed by the Spring Valley Water Company. Leland Stanford, by then a sitting United States Senator, secured the water rights necessary to build a dam downstream from Searsville on stock farm land; this move meant that upstream entities—specifically the Spring Valley Water Company and the proposed dam—could not legally interfere with the university's water supply (Bocek and Reese 1992, 73). To prevent a costly and unsuccessful legal dispute, Spring Valley Water Company agreed in 1889 that if allowed to build and maintain their own planned dam at Searsville, they would allow the university first use of any water held in the first 60 vertical feet behind the dam (Contract Between Spring Valley Water Works, Party of the First Part, Leland Stanford and Jane Lathrop Stanford, (Acting Trustees of the Leland Stanford, Jr., University), Parties of the Second Part, and Manzanita Water Company, Party of the Third Part 1889).

It was no coincidence that the height named in the agreement was the planned height of the dam: the Stanfords also owned land *upstream* from the water company's purchases. Without purchasing the Stanfords' land or otherwise reaching an agreement to flood it, the water company could not increase the height of the dam and were thus blocked from selling any Searsville water to San Francisco (Bocek and Reese 1992, 73). Things were not developing quite as the company had hoped.

The Searsville/Portola/Portola-Crespi Dam and Reservoir

Having acquired the lands that were to be inundated and resolved the questions of the university's water rights, the water company set about constructing the dam. Some abandoned buildings from the town—moved to higher ground above the dam, near the future dam-keeper's home—were used to house construction workers (Bocek and Reese 1992, 72). A newspaper reporter for the *San Mateo County Times and Gazette* who visited the site noted numerous buildings for the laborers—stables, bunkhouses, a dining hall and kitchen (quoted in Regnery 1991, 113). Preparation of the site—clearing trees, digging trenches and terraces, and building scaffolding—started in 1888, and transformed the physical site still further (Regnery 1991, 110–12). Once the framing was in place, the process of pouring the concrete was completed in ten weeks (between August 3 and October 17, 1891) (Regnery 1991, 114). During that fall and winter, as the new lakebed began to fill, any remaining residents of Searsville disposed of their properties. Augustus Eikerenkotter's sons, for example, who had bought his hotel and store from him in 1880 now sold the buildings and moved to Redwood City in 1891 (Regnery 1991, 115–16).

The best-laid plans of the Spring Valley Water Company had up to this point been stymied by Leland Stanford. When the lake filled, they encountered a second major setback: the water itself. Large amounts of silt and organic matter not only made the water unfit for drinking, they also began to accumulate behind the dam, decreasing the depth of the lake, and thus its carrying capacity. Stanford doctoral student Flora Scott (Ph.D. 1925) wrote in her dissertation: “Every year during late summer and early fall the characteristic smell of Searsville water pervades both lawn and garden in the irrigated district; a smell reminiscent of fish or pigpen, or perhaps of both” (Scott 1927, 5). Stanford student Edith Mirrielees (Class of 1907) later recalled that the malodorous Searsville water was “good only for cleaning or the sprinkling of yet non-existent lawns. It carried silt and an odor identifiable a block away” (Mirrielees 1959, 55).

It should be noted that the Spring Valley Water Company dubbed the dam in question “Portola Dam” or “Portola-Crespi Dam” after Gaspar de Portolá (1716–1786) and Juan Crespi (1721–1782), Spaniards who explored the coast of present-day California, including the San Francisco Peninsula. Although official company documents referred to the dam, lake, and reservoir by one of these two names, members of the general public favored the name of Searsville, after the town it had supplanted (*San Francisco Call* 1897a). (Even water company employees sometimes referred to it as “Searsville Lake” in internal communications (Roeding 1911).)

Even though Searsville ultimately failed to fulfill its role as a link in the chain of reservoirs providing water to San Francisco, and even though the water it provided was

not potable, the Spring Valley Water Company was still under legal obligations to maintain the facility for Stanford University, which used it for watering the campus landscape. To meet this obligation, the water company hired a dam-keeper, providing him with a monthly salary and allowing him and his family to live in one of the houses remaining from the construction process, situated on the bluff above the dam. In the twenty years after the dam's completion, a succession of three men filled the position—Melchior Duerst, Edgar Batchelder, and Lanson Tuttle. They were joined by their families, whose common lives spanned a Gilded Age in quiet succession, lost to history. Until now.

The dam-keepers and their families

Immigration was one of the great social upheavals of the Gilded Age, and many of the water company employees, including the Searsville dam-keepers' immediate and extended families, were part of that immigrant story. Melchior Duerst (1858–1897) was born in Switzerland and came to California by way of Michigan (United States Federal Census 1880). He moved into the house in 1891 with his wife, Frieda (*née* Schenk, 1870–1955), a fellow Swiss immigrant; two daughters (Hannah, born 1892, and Elsie, born 1894) arrived not long after (United States Federal Census 1910). His tenure as dam-keeper lasted six years. In 1897, while taking his customary shower in spray off the dam's face, Duerst slipped and fell to his death (*San Francisco Call* 1897a).

To replace Duerst, the water company transferred Edgar Batchelder (1865–1936), a San Mateo native, who was then dam-keeper at the Stone Dam on Pilarcitos Creek in San

Mateo (Regnery 1991, 118). Batchelder was born in California in 1865 to parents from New Hampshire. His wife Emeline (*née* Horabin, 1871–1903) was also born in California, the child of English immigrants (United States Federal Census 1900). When Edgar and Emeline arrived at Searsville in 1897, they brought with them two young sons, Albert (born 1894) and Edgar (born 1895). Their third child, Lucy, was born while the family was in residence at Searsville, in 1897. A fourth child was stillborn in 1903, and Emeline Batchelder died soon after from complications of the pregnancy (McReynolds and Trindle 2000, 5).

The San Francisco earthquake struck in April 1906. Although bookshelves toppled, the dam-keeper house itself escaped serious damage; the dam suffered only a minor crack on its surface, with no resulting loss of water (Regnery 1991, 120–21). Other parts of the water system suffered major damage, and the water company temporarily reassigned Batchelder to its pumping station in Millbrae (Spring Valley Water Company (San Francisco, Calif.) 1906; Spring Valley Water Company (San Francisco, Calif.) 1913a, 11). After two months, Batchelder's move was made permanent. To take over the dam at Searsville, the water company hired Lanson Tuttle (1860–1942), a Canadian immigrant who had farmed in the area for a number of years (Regnery 1991, 118; *San Jose Evening News* 1942). He moved into the house with his American wife, Josephine, and daughter, Grace (1891–1987) (“Grace L. Pearson” California Death Index, 1940-1997 2013). Tuttle's tenure at Searsville lasted until 1911; his successor was Rhoda Hillebrand (*née* Ralston, 1850–1930), who looked after the dam for an undetermined length of time.

In 1919, after years of talks and negotiations, Stanford University agreed to buy Searsville Dam and Lake from the Spring Valley Water Company (Deed, Spring Valley Water Works to Board of Trustees of the Leland Stanford University 1919; Board of Trustees Approval of Proposed Deed 1920; Deed, Spring Valley Water Works to Board of Trustees of the Leland Stanford University 1920). The university did not employ a dam-keeper, as the water company had; the husband-and-wife swimming and diving coaches Ernst and Greta Brandsten leased land from the university and operated Searsville Lake as a venue for recreation and training (Regnery 1991, 135).

The Duerst and Batchelder families lived in the house provided by the company—both historical and archaeological evidence confirm as much, and the traces of their time at the site is the subject of the coming chapters. The living situations of subsequent dam-keepers is less clear, although the historical record suggests that Tuttle may have lived briefly in the house, as well. No archaeological artifacts definitively linked to either the Tuttle or the Hillebrands were found at the site.

Part IV. Historical primary sources

Spring Valley Water Company Records

Three repositories hold significant collections of documents related to the Spring Valley Water Company: the Bancroft Library at the University of California, Berkeley; the San Francisco Public Utilities Commission; and University Archives at Stanford

University. Many of the extant records date from the 1910s and later. An unknown but quite significant number of earlier documents and records were destroyed in the 1906 San Francisco earthquake and fire (Morganti 2013).

At the Bancroft Library

Most of the surviving archival resources related to the Spring Valley Water Company are held at the Bancroft Library at the University of California, Berkeley. Consisting of some 150 linear feet of documents and ledgers, the Spring Valley Water Company Records collection includes not only legal documents and correspondence, but also two items that offer insight into the lives of the company's employees. Log books from the mid-1880s reveal daily compilations of dam- and water-related measurements taken by workers across the water system, including the depth of water present in each reservoir, the amount of water used, the amount of coal required to run various pumps, and the amount of rainfall and other meteorological measurements (Spring Valley Water Company (San Francisco, Calif.) 1885). Although these books predate the construction of Searsville Dam by several years, they provide an overview of the typical responsibilities of dam-keepers, namely measuring and reporting water on hand and responding to changes in environmental conditions or consumer demand.

The collection at the Bancroft also contains the ledger of labor and pay for April 1906—the month of the San Francisco Earthquake. This book provides a number of interesting pieces of information. Specifically, the ledger illuminates the differences

between types of jobs, the number of employees at many of the company's facilities, and the effects of the 1906 earthquake on the company and its employees.

Pay records reveal a distinction between employees. Laborers—such as handymen, flume walkers and screenmen (who cleared water channels and pipe filters)—were paid a daily rate; engineers and dam-keepers like Duerst and Batchelder at Searsville, meanwhile, were paid monthly salaries. The work conditions of the last major job category, watchmen, varied. Some watchmen were salaried, while others were paid by the day (San Francisco Board of Supervisors 1897, Appendix 45-46).³ Like Duerst and Batchelder, some salaried employees also received housing for free as part of their compensation. The records for the Portola (Searsville) Reservoir for that year, for example, show that Edgar Batchelder was paid \$75 per month and received use of the house as additional compensation (Spring Valley Water Company (San Francisco, Calif.) 1906, 28). Other dam-keepers in the system were in a similar situation. C. D. Hyland, keeper at the Lake Merced Pump, received free housing in addition to his monthly salary of \$125.85, and R. H. Dorland, keeper at the University Mound Reservoir, received \$80 per month as well as housing and feed for a horse (Spring Valley Water Company (San Francisco, Calif.) 1906, 6, 8). At Crystal Springs Reservoir, keeper R. Boerner and watchman A. H. Mosher both received housing considerations; Boerner was paid \$85 per month, while Mosher received \$75 and feed for a horse (Spring Valley Water Company (San Francisco, Calif.) 1906, 28).

Second, the 1906 ledger shows the distribution of personnel throughout the system, which shows that Searsville, while well maintained, was not a priority. Lake Honda Reservoir (now known as Laguna Honda, at the intersection of Laguna Honda Boulevard and Clarendon Avenue in San Francisco) employed eight men—five screenmen, one flume walker, and one handyman, all at a daily rate of \$2.50, and a keeper, with a monthly salary of \$80 (Spring Valley Water Company (San Francisco, Calif.) 1906, 9).

Third, the ledger reflects the impact of the earthquake on the employees of the water company. Wages and salaries were originally recorded in ink in neat columns. After the catastrophic earthquake, another individual (in pencil and a different handwriting) revised the pay and staffing figures downward. At Lake Honda, the pencil-wielding belt-tightener drew a brace spanning the five screenmen and wrote “1 out”—four screenmen would have to suffice (Spring Valley Water Company (San Francisco, Calif.) 1906, 9). Dorland at University Mound had his salary cut from \$80 to \$60 per month, and the allowance for feed removed (Spring Valley Water Company (San Francisco, Calif.) 1906, 8).

Batchelder’s \$75 monthly salary was cut to \$65 (Spring Valley Water Company (San Francisco, Calif.) 1906, 28). At the same time the president of the water company, Charles W. Howard, also took a sizeable pay cut—from \$833.33 per month (or \$10,000 per year) to \$175 per month (\$2,100 per year) (Spring Valley Water Company (San Francisco, Calif.) 1906, 1).

At Stanford University

In addition to deeds and purchase documents, Stanford University Special Collections holds the dam-keeper's daybook for 1905–1913, in which the dam-keepers recorded the depth of the lake, the amount of rainfall, and actions taken. Although the period covered by the book corresponds to only one-and-a-half years of Batchelder's more than nine-year tenure at Searsville—and none of Duerst's—the records portray both the dam-keeper's daily responsibilities and the involvement of university personnel in managing the dam. On a handful of occasions, for example, Tuttle recorded visits from employees of the university's business manager, but nothing of conversations or actions (Spring Valley Water Company (San Francisco, Calif.) 1913b). In addition, the daybook is so far the only record of the fourth dam-keeper, Hillebrand.

At the San Francisco Water Department Archives

Water company records held by the company's successor, the San Francisco Water Department (part of the San Francisco Public Utilities Commission) at a downtown San Francisco office, provide information about the cottage at Searsville, conditions at other employee housing, Searsville's place in the water company pecking order, and other responsibilities of the Searsville dam-keeper. The Water Department archives contain the only known record of the interior of the Searsville cottage. In an undated letter to his superiors in the water company, Lanson Tuttle listed the rooms of the house and the dimensions of each for the purpose of repainting (Tuttle n.d.).

These archives also contain documents relating to worker residences at other facilities; although all of these records post-date the occupation of the house at Searsville by at least a decade, the cottages they depict (specifically San Andreas and Pilarcitos) serve as useful comparisons to the Searsville cottage. A 1928 inventory of the San Andreas cottage, for example, included full place settings (silverware, wine and water glasses, and lunch, dinner, soup, and bread plates) for more than 20 people—a large number were needed to entertain company worthies who came on lunch visits (Spring Valley Water Company (San Francisco, Calif.) 1928). San Andreas cottage frequently hosted visitors, as well: hand-written notes recorded visits by Superintendent of the Water Division W. B. Lawrence to both San Andreas and Pilarcitos cottages. Lawrence—sometimes unaccompanied, sometimes with a party of six or eight—spent several nights in the cottages' guest rooms in 1923 (Bee 1923a; San Andreas Cottage, August 25, 1923 1923; Bee 1923b). No records indicate the degree to which the Searsville dam-keepers were or were not expected to entertain and accommodate company representatives. The Searsville home did not have a guest room (Tuttle n.d.). Records of operating expenses between 1897 and 1908 show that Searsville was consistently the least costly of the company's reservoirs—often costing less than \$900 per year, while most reservoirs had annual operating expenses of several thousand dollars (Spring Valley Water Company (San Francisco, Calif.) 1908).

Additionally, documents at the Water Department archives reflect concerns not directly related to the provision of water. For example, the water company allowed local

residents to dig up and haul away wagonloads of gravel (often used to improve unpaved roads or in plant nurseries)—for a fee (Serveau 1907; Tuttle 1908a; Tuttle 1908b; Lawrence 1909b; Lawrence 1909a). Other transactions included offers to buy lumber and to purchase and haul away dilapidated buildings left over from construction (Tuttle 1911).

Vital records online

Biographical information about the dam-keepers and their families is scant. The most accessible information are vital statistics (such as dates and places of birth and death) derived from the United States federal censuses taken every ten years, as well as county birth and death records and cemetery registers. These sources provide basic information about family relations, ages, and (sometimes) places of residence.

Woodside Store records at San Mateo County Historical Society

Analyzed together, historical and archaeological sources can provide useful insight. It is possible to identify ownership of a subset of the Searsville home site artifacts based on correlations between stratigraphy and the historical record. One of the few surviving historical documents directly related to the daily lives of these families are the records from Tripp's Woodside Store. Robert Tripp studied dentistry in Massachusetts before coming to California in the Gold Rush of 1849. With fellow Forty-Niner Mathias Parkhurst, he established a store to supply lumbermen and local residents. The store also served as a stagecoach stop, safe deposit box, and post office. The building Tripp and Parkhurst constructed in 1854 is now part of a county park operated by the San Mateo

County Historical Association (Woodside Store History 2015). The Woodside Store is roughly four-and-a-half kilometers from the site of the Searsville dam-keeper's house. The Duerst family made purchases at the Woodside Store; for some of these purchases, a corresponding item was excavated in the trash-pit. This useful concordance is discussed in the next chapter (see "Deposition and Associated Occupation Periods," in Chapter 2).

Limitations

For all the useful information derived from surviving records, there are some notable limitations. The Woodside Store records reveal particularly valuable information about the Duerst family's purchases. Their limitations in the context of this study, however, are three-fold. First, the surviving store ledgers do not include Batchelder family purchases, leaving a tantalizing void and preventing a direct comparison between the two households' shopping patterns. Second, as I discuss in Chapter 3, patterns of purchases (particularly of flour and sugar) strongly suggest that the Woodside Store was not the Duersts' only source of provisions. Third, the store records for the Duersts cover only the period between May 1894 and November 1896—less than half of the Duerst family's time at Searsville.

Part V. Historical secondary sources

Barbara Bocek and Elena Reese

Barbara Bocek and Elena Reese are authors of the research report *Land Use History of Jasper Ridge Biological Preserve* (1992). Additionally, Bocek published two papers about the effects that burrowing rodents have on archaeological sites, based on excavations of a prehistoric site within Jasper Ridge Biological Preserve (Bocek 1986; Bocek 1992). Reese, in her role with the cultural resource management firm Pacific Legacy, Incorporated (Berkeley), worked on archaeological projects related to the Sand Hill Corridor Project (1998-2005), including the excavations at the Stanford Mansion (CA-SCL-623/H) (Reese, Holson, and Bartoy 2006). Their monograph on the land use history of Jasper Ridge Biological Preserve was part of a University of Kansas-based project concerned with the historical ecology and the effects of historical human activity on current biological research (Bocek and Reese 1992, 1).

Dorothy Regnery

Dorothy Regnery (1918-1990) was an amateur local historian of the Mid-Peninsula region and a founding member of the Stanford Historical Society. She obtained historic recognition for 57 sites, including declaration of the Stanford Family mansion in Sacramento as a National Historic Landmark (Regnery Devoted Herself to History 1990). Her final book *The History of Jasper Ridge: From Searsville Pioneers to Stanford Scientists* (1991) was published posthumously by the Stanford Historical Society (Regnery 1991).

The stories that Regnery recorded—often from oral interviews with late-nineteenth-century residents of the area—have tended to be confirmed by archaeological evidence, including the stove explosion story told in Chapter 3. Similarly, her placement of a historical marker demarcating the alleged site of the Searsville schoolhouse was confirmed through landscape archaeology and two test units during the summer of 2012. However, Regnery often failed to cite her sources. For many of the items cited here, it is clear that the Regnery got her information from an interview she conducted with Edgar H. Batchelder, son of dam-keeper Edgar B. Batchelder, because she listed the younger Batchelder among her sources.

Stanford University Heritage Services Report

The report on the excavations completed by Stanford University archaeologist Laura Jones and her team—which included the author of this thesis—during the summer of 2012 is in draft format. In addition to excavations at the dam-keeper house site, it will report on excavations carried out to find traces of the town of Searsville and the Searsville schoolhouse (L. Jones et al. in progress).

Conclusion

How does historical context matter to our understanding of the dam-keepers and their families, and the interpretation of archaeological data? The landscape in which the dam-keepers and their families lived was profoundly shaped by these historical processes. By the time Melchior Duerst stepped outside the door of his home above the dam, the area around his Searsville home—formerly covered by great stands of ancient redwood trees

providing deep shade to the damp earth below—was now clear-cut, dry, and open to the air and sun. The redwoods were gone, and the valley below formed an artificial lake where only creeks had meandered before: his entire lived environment had been molded by the demand for resources. Immigration and urbanization drove resource exploitation, which cleared the land of trees and created a demand for water, transforming the valley below into a lake. The very presence of the house—not to mention the nearby community—was a consequence of immigration to the area, first to exploit the trees, then to run ranches and orchards that provided food for the metropolis and its surrounds. The town of Searsville affected the lived environment, both through roads and infrastructure and through the development of local land use. Finally, the dam-keeper's job was a product of the great demand for water resources. His days were regimented by the demands of his employer.

The Spring Valley Water Company provided not only a job and paycheck, but also the physical structure of the home, whose construction was so like that of the “almost polite” homes—homes characterized by at least five rooms, hierarchical organization, with separate rooms for entertaining and a purpose-made kitchen—studied in nearby Oakland by Praetzellis and Praetzellis. This physical environment accorded with a set of mentalities embedded in the archaeological remains of material culture, which facilitates our ability to recreate aspects of their lives. Other local historical relationships mattered, as well. The relationship between the water company and Stanford University shaped the dam-keepers' daily lives and work routines. The relationship added a second master to

serve—whereas other dam-keepers dealt with the company hierarchy, the dam-keepers at Searsville interacted with laborers and administrators from the university.

In sum, the lived environment and patterns of working and living experienced by the dam-keepers and their families were all deeply immersed in historical currents and transformations. The great forces of the Gilded Age—immigration, urbanization, and industrialization—created patterns of resource exploitation that dramatically changed and structured their physical, economic, and social environments. And yet, those broad historical strokes leave many large lacunae in our understanding of their daily lives. The chapters that follow seek to recover elements of those lost lives from the vault of the earth, as archaeological remains—analyzed in light of surviving historical threads—allow us to once more imagine how they ate, drank, worked, and played.

Chapter 2: Site

Part I. Searsville, Summer 1892

As Melchior Duerst walked out of the door of the Searsville dam-keeper's house in the summer of 1892, he saw a landscape transformed. The native redwood forest had given way to a site altered by human settlement, logging, and cultivation—now transformed once more by the creation of the Searsville dam, reservoir, and associated structures, including Duerst's home. Where ancient redwood trees had once provided dappled shade and cool air, now the hot sun baked the soil, and the moving air kicked up dry dust in areas where wagon wheels and other activity had stamped out the vegetation.

Between the settlement of the town of Searsville in the 1850s and the construction of the dam in 1891, the bluffs on which his house stood had been cleared of most tree cover of any kind. The trees that now grew near the home were typical of California chaparral, predominately oaks and madrones, skirted by underbrush (Bocek and Reese 1992, 28). Looking toward the reservoir, Duerst's eyes would have fallen upon a line of coast live oaks, which clung to the ridge overlooking the dam. For the most part, however, the bluff overlooking the reservoir was covered in grasses, by this time of year turning dry and golden.

Photographs reveal that Duerst's own yard represented yet another transformation of the land. In one image, what appears to be a majestic coast live oak presided over the

dam-keeper's house and yard. It loomed over a white picket fence, which surrounded the house and delineated the domestic sphere from the work space beyond. To Duerst's right, outside the boundary of the white picket fence, just visible in the photographs, was a barn for horses and a wagon. Behind the home, the ground sloped away to the west, down to a low spot, before rising in another ridge, beyond which the Mayfield-Searsville Road ran to the northeast toward the young Stanford University. The town of Palo Alto was two years away from being established, but there were two other small, nearby towns. Just over four kilometers to the northwest was the town of Woodside, where at least one dam-keeper family did their shopping, and a town by the name of Mayfield lay just over nine kilometers north and east, close to the university campus.

As Duerst headed toward the dam from the front door of his home, he walked a few meters (not knowing the precise location of the house means that we cannot say for sure, but likely no more than 15) to the edge of the bluff and started down a path that had been excavated into the rock walls of the canyon during the construction of the dam. The walk was one that he might make more than once a day—particularly in the wet winter months, when he would need to keep close tabs on the amount of water spilling over the dam. The water that flowed over the dam formed San Francisquito Creek below. The creek marked the boundary between the counties of San Mateo and Santa Clara as it flowed northeast toward the bay; the dam-keeper's home lay in San Mateo, on the north side of the creek and reservoir.

The lake stretched to the south behind the dam, holding approximately 344,000,000 gallons of water (Bocek and Reese 1992, 73; Navis 1946). The canyon walls near the dam were steep and rocky; further south, away from the dam, the slopes became less severe. To obtain water for the home, family members would walk with a bucket from the house, down the slope, and across the top of the dam to the other side, where in the canyon's east wall was a small but reliable natural spring that produced clear water (Regnery 1991, 120). Stanford student Edith Mirrielees later wrote of the rank Searsville water that it was "good only for cleaning or the sprinkling of yet non-existent lawns. It carried silt and an odor identifiable a block away" (Mirrielees 1959, 55).

Beyond the dam-keeper's immediate landscape, hills stretched in all directions before giving way to flatter expanses of plains to the north and east. The plains gave way to marshes as San Francisquito and other creeks made their ways to San Francisco Bay. Although the dam-keeper's house and barn stood alone and was by modern standards isolated, its occupants were not cut off from human contact. Residents of neighboring parcels of lands variously engaged in farming, ranching, and mining (Bocek and Reese 1992).

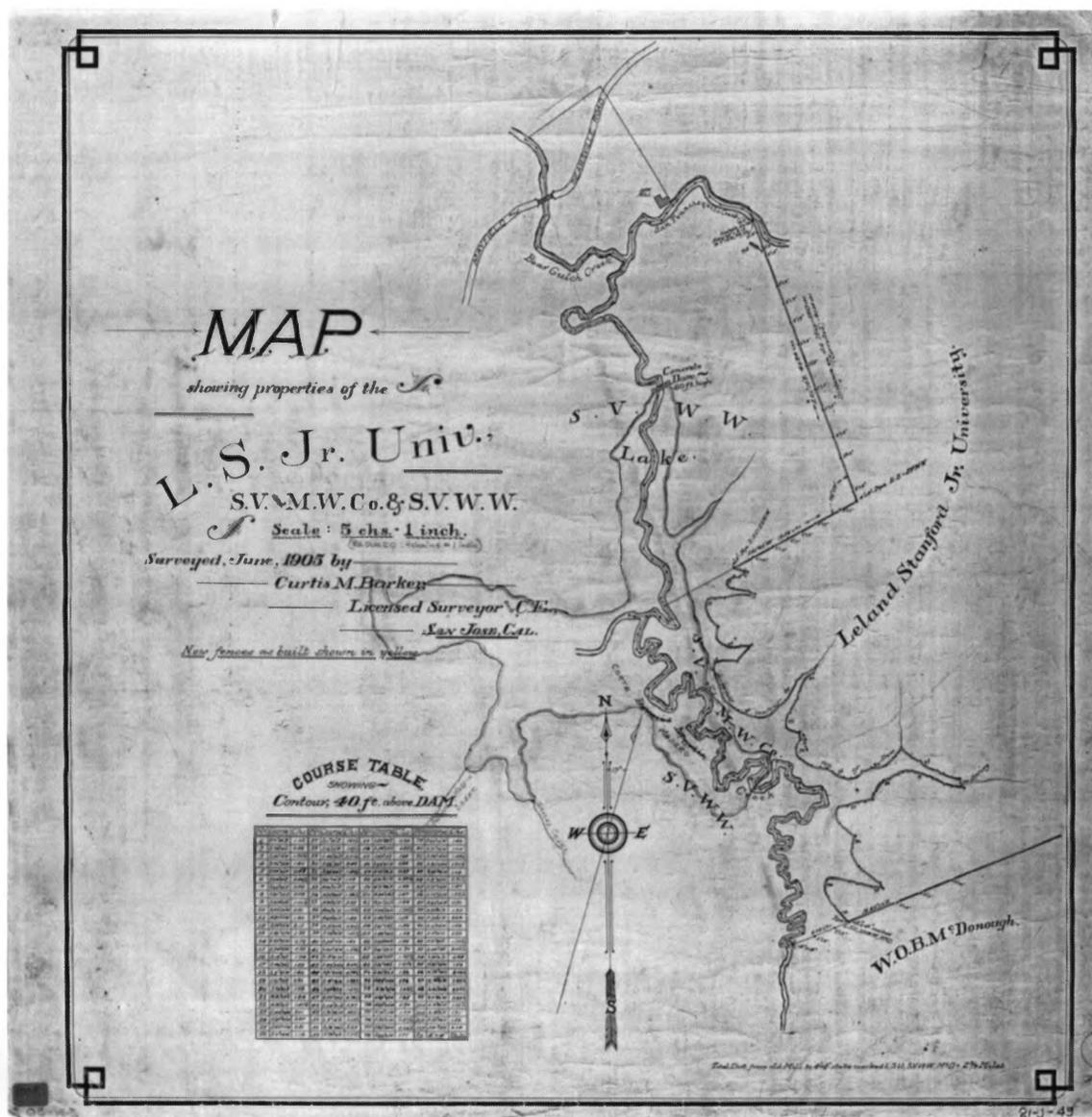


Figure 2. The dam-keeper's house was located in the neighborhood of the "L" in "Lake" (Barker 1905). To the north and the south, the bluff on which his residence was situated continued.

Of course, Duerst's experience of, and impact upon, his living environment was structured by more than just his work. As I discussed in Chapter 1, each dam-keeper's family occupied the house, as well, a fact with consequences for the nature of the site

during both the dam-keepers' occupation and modern archaeological investigations. In 1892, the household consisted of Melchior and his wife Frieda, but expanded that year with the birth of daughter Hannah, and again two years later with the birth of daughter Elsie (United States Federal Census 1910). The family engaged in domestic activities: maintaining the home, procuring and preparing food, tending to personal health, engaging in recreational activities, and traveling on foot, by horseback, or by wagon to the local store. All this activity produced trash, and all this trash needed someplace to go. It became part of the site.

Duerst and his family transformed the deposition of the earth in the form of a trash pit, which they almost certainly dug themselves. Although the exact location of the house is still unknown, the pit would have been close enough to be convenient, while being far enough away to mitigate the smell from the trash and the potential presence of flies and other pests. The dam-keeper families that followed the Duersts continued to dispose of the unwanted material detritus of their lives in the pit. This trash, the bits and pieces of their lives that meant the least to its depositors, would eventually become one of the only means of knowing them. The most prominent features of the site for these men and their families—the welcoming sight of home, the familiar barn—were soon to be lost to the passage of time.

Part II. Site Transformation: the Erasure of the Fabric of Lives

In the second half of the 1910s, around the time that Stanford University purchased the dam, land, and reservoir from the Spring Valley Water Company, the process of erasure

began. At some point, the house that had sheltered the dam-keepers and their families vanished. Archival research has not revealed its fate. We do not know whether it was demolished, sold, moved, or disassembled and carted off. Remarkably, it is not even clear whether this disappearance occurred before or after the university purchased the dam and reservoir from the water company in 1919.

What is certain is that the land on which the house had stood was transformed once again, changing and obscuring the landscape of these families' lives in steps both slow and quick. Although the lake had long been a destination for seekers of leisure activities, its acquisition by Stanford University resulted in a significant expansion of recreational activities and use. Starting in 1922, Stanford swimming and diving coaches Ernst and Greta Brandsten leased land along the north shore of the lake from the university and constructed a diving platform on the dam (Bocek and Reese 1992, 81). Within five years, their lease agreement with Stanford University had grown to 240 acres. In response to increasing demand for recreational access from local residents, they built several hiking trails and installed an admission gate. The Brandstens also purchased ten acres from the Spring Valley Water Company near the southern end of the lake, where they set up a family home.

University groups—particularly athletic teams—held events at the lake, and local Girl Scout and Boy Scout troops visited for a day or a week or two (L. Jones et al. in progress). People swam, dove, fished, hiked, sun bathed, and rode horses, changing the site and its plant life through the trampling of feet, the building of campfires, and the

addition of new recreational infrastructure: docks, boat entries, baseball diamonds, playing fields, and even a faux beach made from 800 tons of trucked-in sand (L. Jones et al. in progress). New layers of soil covered the old, just as silt continued to accumulate in the lakebed. Tens of thousands of visitors spent time at Searsville Lake. They played, laughed, and made memories, their lives and activities obscuring those that had come before.

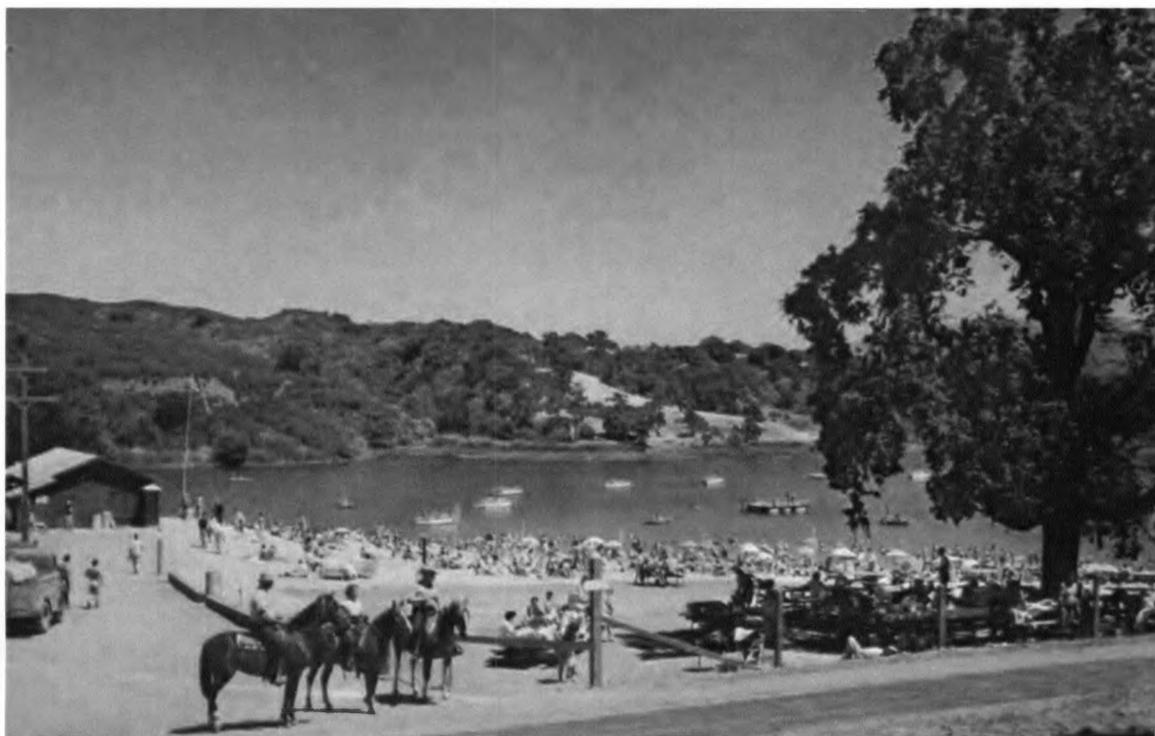


Figure 3. Postcard from the 1950s of “Searsville Lake and Park. Woodside, Calif.,” published by Mike Roberts, Berkeley, CA and distributed by the Peninsula News Co. Collection of the author.

Part III: The Site 120 Years Later - Summer, 2012

Archaeological Excavation: Goals and Approach

Very little of the day-to-day existence of the dam-keeper families was ever recorded on paper, but their lives nonetheless left traces in the dirt. With this in mind, Stanford University Archaeologist Laura Jones assembled a team to search for the site where their home once stood for the purpose of conducting archaeological excavations. The team's approach to the site was developed in service of the dig's overarching goals. These goals were to locate and identify historical resources associated with the town of Searsville and the construction and operation of the dam; to determine the significance, integrity, and research potential of such sites; and to recover and document artifacts and features as appropriate.

The team pursued these aims by approaching the site in five overlapping steps: historical research, surface survey, GPR and electromagnetic survey, an initial set of test units based on survey data, and a second set of units based on the results of the first. Pursuit of these goals was also informed by other considerations, including available resources and associated limiting factors such as time and manpower. The Stanford academic year stretches into mid-June, so the excavation season began in July. Because many of the participants were enrolled in other universities, which returned to school in mid-August, the supply of manpower began to diminish after six weeks in the field. The dig crew, at its height, was comprised of 20 excavators, including six unit leaders, four of

whom were regular staff of the University Archaeologist's Office (including the author); the other unit leaders were experienced California archaeologists.

Upon discovery of an artifact either in the soil or the sifter, excavators placed them in either paper bags or appropriately sized clear plastic bags, labeled with the dig site, unit, level, date, and the initials of the excavators. They were then delivered to the Jasper Ridge field station, which served as a field processing facility. Artifacts were cleaned when appropriate (that is, washed with clean water and air-dried), then counted, measured, weighed, and recorded on artifact data sheets. They were then placed in archival, climate-controlled storage at the Field Conservation Facility at Stanford University.

First Impressions

When our archaeological team first visited the site in the summer of 2012, one hundred and twenty years after Melchior Duerst's first summer of waking and walking to the dam, we saw some of the same sights as the forgotten dam-keeper. Chaparral vegetation still dominated the bluff overlooking the reservoir; anchored by coast live oaks and scrub oaks, with grasses otherwise predominating. The summer sun still baked the soil in grassy areas, and warm breezes kicked up clouds of dust from the paths that crossed the bluff. A great deal was changed, however. To the south of the site, a bench had been installed looking south over Searsville Lake. Further to the southwest, the ten-year-old Jasper Ridge Field Station stood nestled in a handful of oak trees. The building provided a base of operations and administration for researchers working at the biological

preserve. Some of their ecological experiments were delineated by fencing, flags, and monitoring equipment, although none of these overlapped with the dig site. A dirt road furrowed by automobile tracks, however, ran from the field station through what was to become the dig site survey area.

The path to the dam hewn into the cliff wall had more vegetation in our time than it did in Duerst's, whose hillscape had been more recently and obviously scarred by the massive construction project and the earth-moving required to make wide pathways for horses bearing men and hauling heavy carts. The vista from the top of the dam was different, as well. Looking northwards, the area downstream and below the dam was populated with trees and underbrush that were not there 120 years prior. The view to south, upstream of the dam, had changed even more. Where there had been a large lake that stretched from one steep valley wall to the other, now there was a much smaller lake, situated in the middle of marsh and meadow.⁴ Silting had caused the depth of the lake to decrease from sixty feet in Duerst's time, to only ten feet in the present. The smell on the hot, still summer days of 2012 was one of sulfur and decomposition—an odor that would have elicited complaints from any university students in any time period, were it to come from the water in their showers.

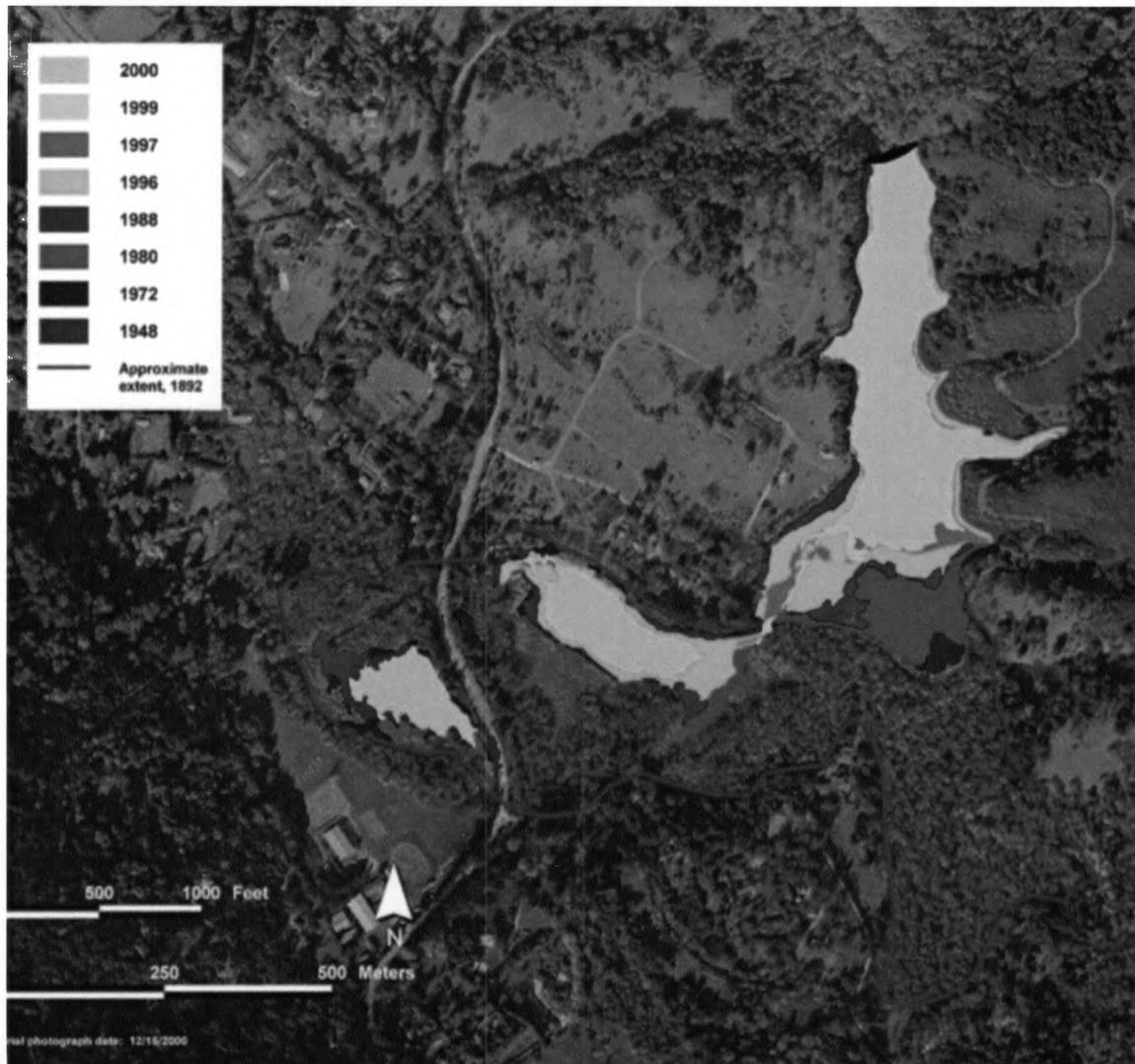


Figure 4. Map showing the decrease in surface area of Searsville Lake during the second half of the twentieth century, based on aerial photography. Courtesy of the Stanford University News Service.

Visual Survey

What we the archaeological team did *not* see was any remnant or hint of the dam-keeper's house. No scatter of artifacts on the surface pointed to any prior use; no concrete foundations broke the ground to testify to walls they once supported, nor posts the fences

they had anchored. No depressions in the ground told of previous excavations, natural settling, or earthmoving. Historic maps tended to depict either the town of Searsville or the topography and hydrology of the area; none of the maps explicitly depicted the dam-keeper's house. Landscape archaeology—which uses historical descriptions or photographs of trees and other semi-permanent or permanent landscape features to match them to surviving trees, stumps, logs, rocks, landscape formations, and other features—allowed the team to locate the approximate site of the house on the bluff overlooking the dam by comparing modern topography to major topological features in the historical record. Landscape archaeology was ineffective, however, in more precisely pinpointing the home's location on the bluff, because the historical photos did not provide enough landmarks or perspectives to match to the modern site. In short, there were no visible clues to suggest where *exactly* we should begin to dig.



Figure 5. The dam-keeper archaeological site, viewed from the west (from the area that would have been roughly to the back of the house). The dig crew discusses logistics. The excavations would take place on the bluff beyond them. The dam and lake lie beyond the bluff in this photograph. Photo courtesy of Heritage Services, Stanford University.



Figure 6. The area of the dam-keeper archaeological site, viewed from the north. The site is to the left of the photo. The Jasper Ridge Field Station is visible in the distance, right of center. The author (left) discusses the excavation with colleague Koji Ozawa. Photo courtesy of Heritage Services, Stanford University.

Geophysical Survey

Thanks to developments in radar and remote sensing technology, however, it was possible to take a peek under the earth's surface without ever breaking ground. In an effort to more precisely pinpoint the location of the house, a geophysical firm was brought in to survey the 32,000 square foot hilltop site on the first day of the excavation season using terrain conductivity (TC), electromagnetic metal detection (MD), and ground penetrating radar (GPR). In the case of terrain conductivity, a surveyor carried a Geophysical Survey Systems Multi-Frequency Profiler EMP 400 terrain conductivity

meter and walked straight-line transects over the hilltop site. The device emitted radio waves, which induced localized current flow in any nearby pieces of metal. The device measured the response—that is, the apparent electrical conductivity of the underlying soil—and logged the data for processing.

Electromagnetic metal detection was conducted using a hand-held Fisher TW-6 metal detector. This technique identified the presence of metallic objects near the surface, while terrain conductivity provided information from feet below the surface. The third method, GPR, used a Geophysical Survey Systems SIR-3000 Subsurface Interface Radar System. The device emitted an electromagnetic radar pulse into the ground and received the resulting reflected waves; using the information from these reflections, the device produced a high-resolution cross-sectional representation of the subsurface soil. At the end of the day, the surveyor pushed the radar machine over the hilltop a final time, marking the anomalies he encountered with the metal detector or read on the screen of the GPR device using temporary surveying spray paint. As if by magic, the geophysical survey translated literal echoes from the buried past into a temporary map that guided us as we decided where to dig.

The results of the electromagnetic and ground penetrating radar survey sweeps discovered approximately eight anomalies caused by disturbances to the soil and buried objects. These are depicted in Figure 8. Both methods provided powerful assistance as we decided where to locate our initial units. They could not in and of themselves, however, positively identify object types.



Figure 7. Photo of ground-penetrating radar in use at the dam-keeper house site, summer 2012. Photo courtesy of Heritage Services, Stanford University.



Figure 9. Map of units excavated during the summer of 2012. Map courtesy of Heritage Services, Stanford University.

Unit Selection

The team's approach to dig units was closely related to the goals and steps outlined above. Unit selection was based on several criteria. The first units were sited to test some predictions of the geophysical surveyors. These units proved the surveyors' intuition correct—at locations where they predicted buried metal pipes, excavators encountered metal pipes (these pipes will be addressed in Chapter 3). Subsequent units served numerous purposes. Some sought to establish artifact densities across the hilltop and downhill to the west. Others sought to determine whether artifacts were present near the rocky outcropping to the north or under the compact dirt path that connects the dam and the modern-day field station (the answer in both cases was no). Other units followed up on isolated anomalies in the TC and MD surveys, namely those that were not explainable as buried pipes based on the combination of GPR and TC/MD data. Two of these anomalies turned out to be metal boiler tubes, six-tenths of a meter in diameter, buried vertically in the ground; a historic map identified the tubes as later survey markers (Albigholm 1918).

Unit Excavation

Unit excavation was carried out by teams of two to three excavators, working in turns from approximately 8:00 in the morning to 3:00 in the afternoon. First, units were delineated with meter squares, aligned with a project-north, namely the survey laths that marked the transects for the geophysical survey. A datum point was marked in the northwest corner using a small wood stake marked with a horizontal line at the level from

which the depth was to be measured (generally five centimeters above the surface). Units were given sequential identifiers, starting with DK1. Some units were expanded to explore features.

All 35 units were hand excavated, all dirt was sifted dry through ¼-inch screen, and all artifacts were collected for cataloging and analysis. Units were excavated to a depth of at least 30 centimeters; units were deemed no longer productive if two consecutive ten-centimeter levels were sterile (that is, produced no artifacts). At the end of each ten-centimeter level, the excavators filled out a unit level record, noting the texture and Munsell color of the soil, and sketching and photographing the completed level. If excavators observed a marked change in soil texture or color over the course of their levels, they were to document the change by sketching and photographing the soil profile; most units did not exhibit such a change.

Site Results: House Location

None of the units encountered any sort of house foundation. This result did not surprise us because the GPR sweeps would have identified foundation walls had they been present. The apparent lack of permanent foundation walls is consistent with a working-class house of the time period, which tended to be constructed on earthen berms. It contrasts with houses of wealthier individuals in the area at the time (such as Job J. Felt and Henry P. Coon), whose dwellings had substantial brick underpinnings (see Figure 10). Fittingly, perhaps, the dam-keeper's house, like the lives of its occupants, lacked a foundation tying it to just one place.

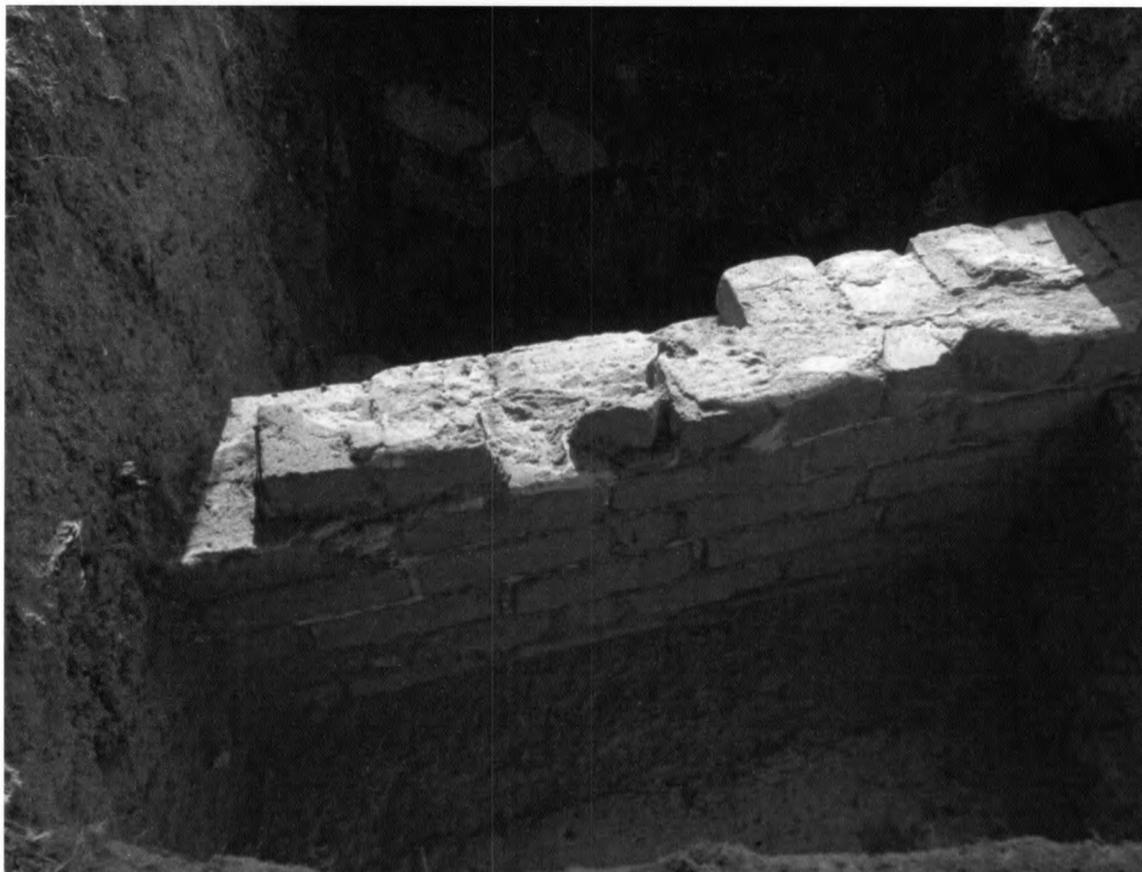


Figure 10. Photograph of brick foundation wall uncovered in the summer of 2013 during excavation at Job Felt House Site (Stanford, CA). Photo courtesy of Heritage Services, Stanford University.

Site Results: Artifact Overview

Over the course of the summer, 19,882 artifacts were recovered from the dam-keeper house site. Nearly 60 percent of these artifacts (11,797) were metal; of these, there were 5,203 nails (some nails were older, square-cut nails, prevalent up to the turn of the twentieth century, while others were later wire-wire cut nails, indicating a variety of sources). The remaining 6,594 pieces of metal included cans, straps, cutlery, and other

items. Glass pieces accounted for 4,056 of the artifacts, and faunal bones for 1,122 more. Ten coins were recovered—nine U.S. pennies and one U.S. quarter—with dates ranging from 1885 to 1974.

DK8: The Trash Pit Unit

A single unit—DK8—produced nearly 40 percent (7,838) of the artifacts recovered. While digging a unit at one of the TC/MD anomalies that was not explained with GPR data, the team initially encountered a pair of fire activity areas, characterized by soot and ash, just 20 centimeters below the surface. The fire activity areas were each designated and documented as separate features. In retrospect, this intermediary burn layer—corresponding to later, twentieth-century recreational use of the site—would reveal that our survey team had not been the only group of people who had stood unknowingly above the dam-keepers' house trash pit.

Around 20 centimeters below this feature, the excavators began to encounter thin sheets of rusted metal, apparently horizontal in the unit, preserving uncompacted soil beneath them. The excavators also uncovered an intact glass bottle with the words “DR. S PITCHER’S CASTORIA” embossed on the sides. Based on the clear association of artifacts in place, the deposit was deemed a feature (DKF8). It turned out to be a historical trash pit, more than two meters in length, and nearly a meter wide (see Figure 11 for profile). The artifacts from the pit represented a broad spectrum of daily life, including building materials and items related to food preparation and consumption, personal adornment, and recreation.

In the midst of the square-cut nails, metal pails, pieces of tableware ceramic, the excavators also uncovered an oven door, fragments of Mason jars and tobacco pipes, and bottles for J.H Cutter Old Bourbon, Bromo-Seltzer, and Paine's Celery Compound. Between roughly 70 and 90 centimeters beneath the surface, the team found another layer of soot and ash covering everything. Fabric and wood items were charred, a wine glass was melted, and the metal frame of an umbrella had survived while its fabric covering had not.

Below this second (internal) burn layer, the artifacts included clothing buttons, pieces of a harmonica, table flatware, and a Vaseline jar. As the depth approached one meter below the surface, several identifiable (indeed familiar) bottles were recovered, including two for Castoria, two for Bromo-Seltzer, and one for Vaseline. After this point, the density of artifacts decreased through the remainder of the feature. In a fitting conclusion for the archaeological excavation, fragments of a shovel blade (possibly broken in the original digging of the trash pit) were among the final artifacts recovered as the dig crew reached undisturbed soil, nearly one-and-a-half meters below the surface.

Deposition and Associated Occupation Periods

We are able to definitively attribute artifacts to the Duerst and Batchelder families thanks to the burn layer between approximately 70 and 90 centimeters below the surface, corresponding to Levels 7 and 8. This layer, therefore, demarcates the occupation periods. Levels 9 through 12 (90–130 centimeters below surface) were therefore associated with the Duerst family occupation (1891–1897) while Levels 5 through 7 (40–

80 centimeters below surface) were associated with the Batchelder family period (1897–1906). Several artifacts were critical to establishing the significance of the burn layer in making this delineation:

- The Duersts purchased a harmonica at the Woodside Store on December 10, 1895 (Tripp 1907). A pair of harmonica reed plates were found in Level 8, establishing that the Duersts used the trash pit. (I analyze the fascinating multi-layered cultural meanings of the harmonica in Chapter 8.)
- A stove door further corroborates the Duersts' use of the trash pit (this artifact, the gendered work associated with it, and the evocative story that survives of its explosive finale, are discussed in Chapter 3).
- A Lindsay hose support clasp found in Level 7 was stamped with the date of its patent—1898 (Lindsay 1898). Melchior Duerst's death in April, 1897, and his family's departure from the house site shortly thereafter rules out the Duersts as the source of the clasp and establishes that both the Duersts and Batchelders made use of the trash pit.

Level 4 contained some Batchelder family period artifacts, although the upper parts of Level 4 and levels above are associated with later periods and not considered part of the trash pit feature. It is also crucial to note that the distinction between Levels 7 and 8 serves as a useful guideline, and not as a hard-and-fast rule. The upper surface of the trash deposit was not flat when the burning occurred (one would hardly expect the occupants to organize the pit with an eye to future excavation before burning it). Similarly, some small items deposited in the upper levels by the Batchelders found their way through interstices into lower levels. Generally speaking, however, the stated associations between levels and occupants hold, and, where necessary, artifacts in Levels 7 and 8 were attributed to one household or the other based on location relative to the burn layer or association with nearby or similar artifacts.

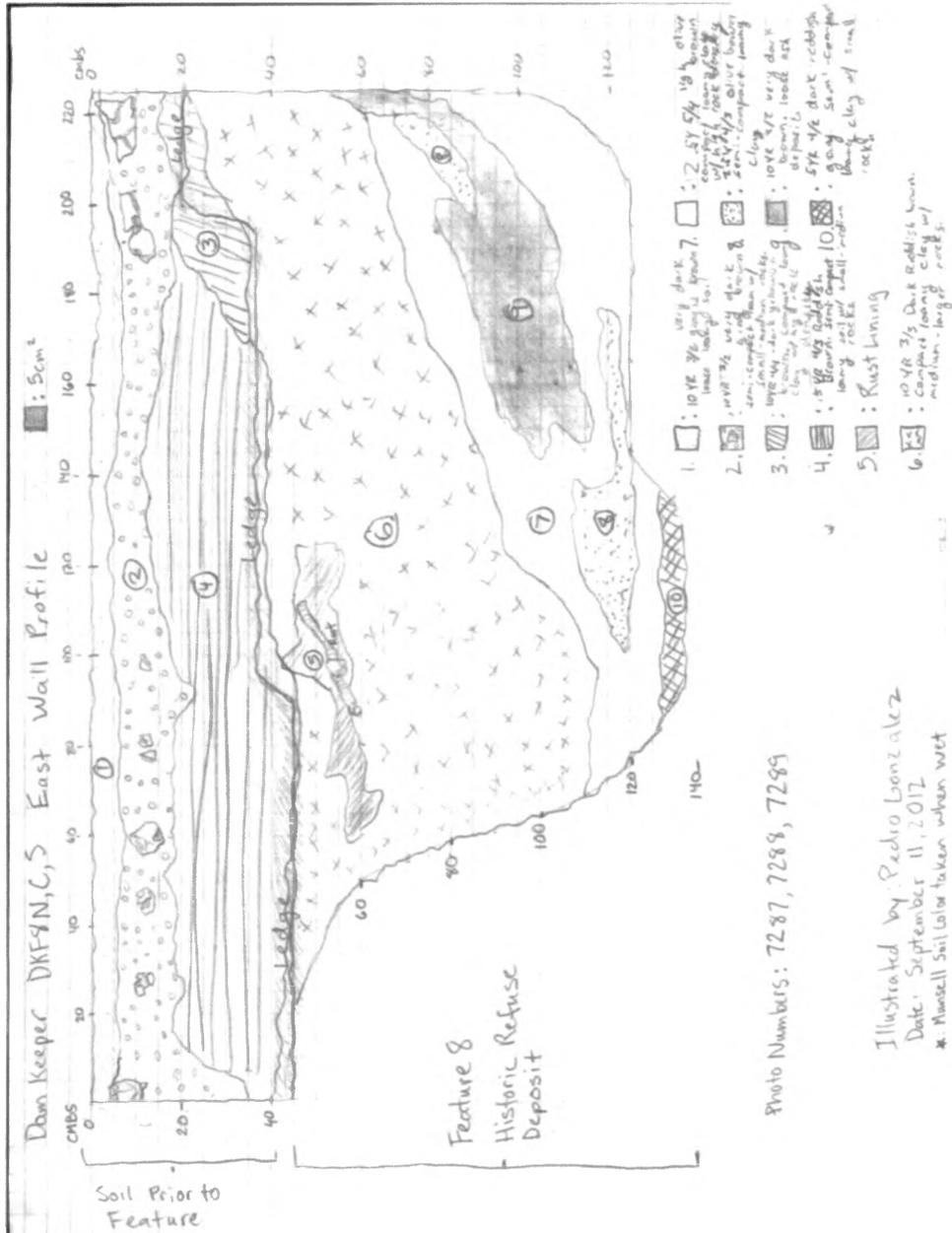


Figure 11. Profile sketch of eastern wall of the Searsville dam-keeper's trash pit after excavation. Image courtesy of Heritage Services, Stanford University.

Conclusion

Remarkably, besides the dam itself, the trash pit is the most intact remnant of the site of the lives of the dam-keepers and their families. Photographs and historical records made clear the degree of transformation that took place on the anonymous bluff overlooking the dam. The house that had stood on the bluff had vanished, leaving no obvious trace on the landscape. No maps or blueprints showed its footprint. No brick or concrete foundation existed or had existed: the house had served a more utilitarian function when compared to the grandiose and impressive mansions of the wealthy California elite. Even the dates of the house's appearance on and disappearance from the hilltop were uncertain. For years after the disappearance of the house and the sale of the property on which it had once stood, the surrounding area served as a destination for recreational visits—afternoons and weekends of leisure. As time passed, just as sediment accumulated in the ill-fated reservoir, so too did soil gather over the scant remaining traces of the time spent at this site by the dam-keepers and their families. In the chapters following, I explore and analyze the archaeological vestiges of their lives on the site, until now buried from view.

Chapter 3: The Stove Door



Figure 12. Stove door recovered from the Searsville dam-keeper house site trash pit, photographed in the field. Photo courtesy of Heritage Services, Stanford University.

In the fall of 1896, a violent explosion rocked the Searsville dam-keeper's house. Some time after Frieda Duerst placed wood in the kitchen stove—just as she had every other day—the wood-burning fire box inside the stove exploded upward and outward with terrifying force, tearing a hole in the roof of the house, and sending the stove access door tearing across the kitchen. The door's decorative ceramic center cracked from the impact (Regnery 1991, 131–32). Over a century later, our archaeological team pulled the door from the family trash pit. As we brushed dirt from its front, the breakage pattern on the door's ceramic face (a consequence of the explosion) re-emerged. The door's broken and bent hinges spoke to the powerful blast that had detached it from the large cast-iron stove.

What had caused an explosion forceful enough to punch a hole through the dam-keeper house roof? The answer comes to us from a short oral history interview with one of the Batchelder children recorded by a local historian. Melchior Duerst, hoping to give a local wood thief a nasty surprise, had filled hollowed-out wood in the woodpile with gunpowder. Instead, the surprise was for his unwitting wife, who placed the gunpowdered wood inside the stove and lit it on fire in preparation for cooking (Regnery 1991, 131–32). In addition to the wreckage of the stove door and the historical report, the story is further corroborated by the Duerst family's purchase of a batch of new roofing shingles at the Woodside Store on October 9, 1896 (Tripp 1907). Melchior Duerst's effort to stave off wood thieves by stuffing cut wood with gunpowder—only to have his plan go badly awry—was surprisingly common; local newspapers reported similar

incidents around northern California, some with fatalities (*San Francisco Call* 1906a; *Red Bluff Daily News* 1892; also *Santa Cruz Sentinel* 1897).

The stove door opens a window into household economy and the food culture of the dam-keeper families: from housekeeping practices, to food choice, preparation, and consumption, to the wider cultural context in which these practices were situated. In Part I of this chapter, I first consider the stove door itself, examining what it can tell us about the physical stove as a whole. I then consider the ways in which Frieda Duerst and Emeline Batchelder likely employed a stove for house-keeping tasks and food preparation, guided by secondary source literature analyzing the roles of women in Gilded Age American households and in American society more generally. I examine the way in which this context may have imparted particular meanings to the way in which Frieda Duerst and Emeline Batchelder viewed and approached their housework and indeed their own role in the home.

In Part II, I analyze additional food-related archaeological data from the dig to create a more detailed picture of the Duerst and Batchelder families' consumption of food, revealing that what we know of their diet was consonant with the dietary practices of both contemporary working-class families in the Bay Area and larger trends among the working-class nationally. This was especially true of the types and cuts of meat that the dam-keeper families consumed. Our data concerning their consumption of fruits and vegetables is far less documented (the remains of vegetable material, unlike animal bones, decomposes rapidly in the ground), but what we are able to glean from surviving

store ledger records for the Duerst family suggests that the vegetarian portion of their diet—particularly their consumption of potatoes—was also roughly consistent with larger trends among working class families.

The families' diet differed from those of their working-class contemporaries in San Francisco and Oakland, however, insofar as the dam-keeper families' rural location meant that their food was obtained not only from stores, but also most likely from hunting, growing their own food, and bartering with neighbors who owned farms, orchards, and animals. The dam-keeper families also differed from working-class contemporaries in that the dam-keeper families consumed fewer species of fish, and less fish overall, than their urban Bay Area counterparts. I hypothesize that this was due to the fact that both Oakland and San Francisco markets had direct waterfront access to fresh fishing catches, whereas the dam-keeper families' greater distance from the ocean, the bay, and major fish markets made the acquisition of fresh fish far more difficult.

Ultimately, the stove door recovers for the imagination the day-to-day household tasks of Frieda Duerst, Emeline Batchelder, and their families. It evokes both the commonplace stove-centered activities that they shared with women around the country—including heating the household, warming water for cleaning, caring for the stove and its fires, and preparing and cooking food—as well as the way in which any given archaeological artifact's history is unique and idiosyncratic. (Most stove doors did not end their careers blown across the room by gunpowder.) Most days, as the sun dipped toward the western horizon, the smells of cooking filled the air. In the dam-keeper's home, one of the

predominant smells was beef, probably accompanied by a mixture of vegetables. As the family filed into the kitchen to eat, wood crackled and popped inside the stove, and warmth radiated off its surface.

* * *

Part I: The Stove and Housekeeping

The stove door measures 39 centimeters high by 30.5 centimeters wide, not including the hinges, which add another 4.5 centimeters to the width. At 5.2 kilograms, the door is the heaviest single artifact recovered from the dam-keeper site excavation. The door, like the rest of the main stove body, was made from cast iron, because the metal served as an excellent reservoir and conductor of heat. The front of the door was decorated with a swirling metal design in relief (14.5 centimeters high by almost 11 centimeters wide), as well as a light green, ceramic decorative medallion (7.5 centimeters in diameter) bearing a young women's face, her neck adorned with a string of pearls (see Figure 13), which sat in the center of the larger cast metal decoration. The presence of this motif suggests that the dam-keeper stove, like most other stoves of its time, reflected popular preferences for complex surface ornamentation of everyday items (S. Williams 2006, 57; Kreidberg 1975, 158, 162).

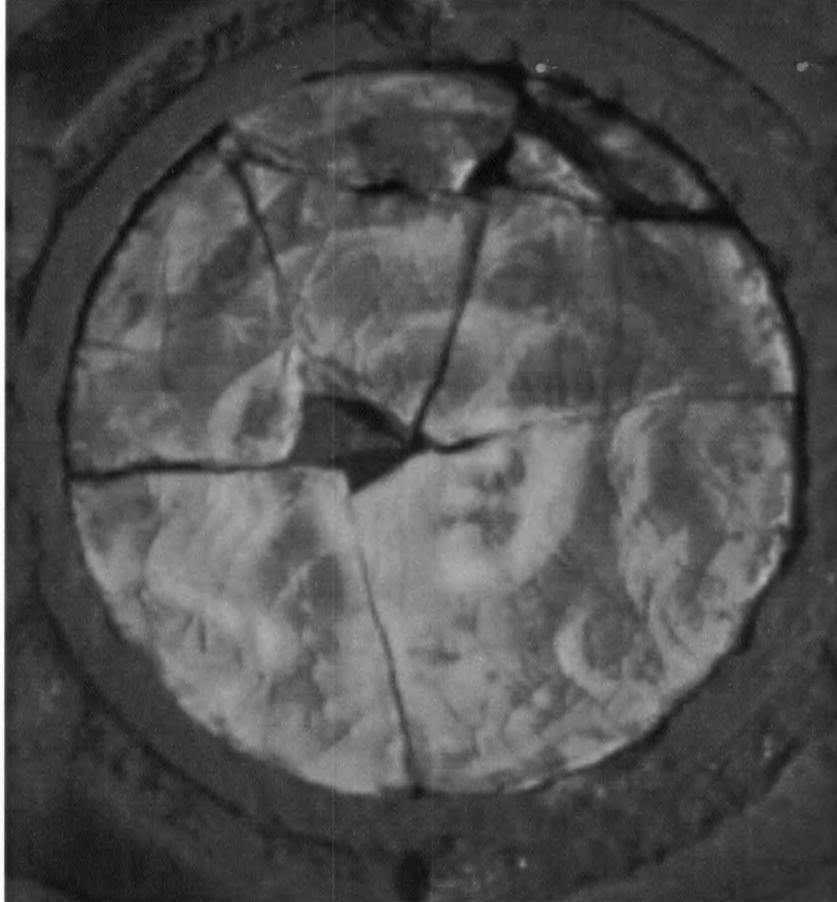


Figure 13. Detail of the ceramic medallion on the stove door recovered from the dam-keeper house trash pit. The medallion featured the image of a young woman with wavy ringlets of hair, a pearl necklace, and possibly decoration on her head. Photo courtesy of Heritage Services, Stanford University.

Although we have no known record of the particular type of stove associated with the door, we do know what stoves of this era generally looked like, and how they functioned. In their basic design, stoves tended to be rectangular boxes with heavy decorative feet. Doors in the main body provided access to a wood box—where wood was burned to heat the stove—as well as internal cooking and heating areas. A stovepipe, made of iron, pulled smoke out of the stove and up through the roof of the house, where it was released

into the outdoor air. Most stoves were heated by either wood or coal. The stovetop typically had between four and eight holes into which pots and pans were inserted after removing the holes' heavy surface covers with heavy tongs known as stove lifters (Carlisle 2014, 46; Kreidberg 1975, 153).

Two pots were recovered from Level 8 of the trash pit, corresponding to the later part of the Duerst occupation period. Measuring 40 centimeters long, just over 5 centimeters deep, and 17.75 centimeters in diameter, the steel pots were found nested one inside the other, apparently discarded together (see Figure 14). The upper pot was deformed, in a manner consistent either deposition in the trash pit or possibly with damage from the stove explosion. It is possible that the pots associated with the exploded stove were discarded because they either did not fit—or were not needed with—the replacement stove. There is no known surviving record regarding the acquisition of a replacement unit, nor of the disposal of the original stove. There was some rusted scrap metal recovered in Levels 8, 9, and 10 of the trash pit, but the metal was nondescript and could not be positively connected to the exploded stove.



Figure 14. Pair of nested pots recovered from Level 8 of the dam-keeper house trash pit, photographed in the field. Photo courtesy of Heritage Services, Stanford University.

Stoves from both the Montgomery Ward catalog and from local distributors like M. Friedman and Company during this period typically cost around \$20–30, or approximately one-third to one-half of Melchior Duerst’s monthly salary (Montgomery Ward and Company 1895, 419–22; *San Francisco Call* 1903f; San Francisco Board of Supervisors 1897, Appendix 45–46). Smaller stoves were available for \$12–15 (*Sacramento Daily Record-Union* 1899). The stoves offered by Friedman and Company and John Breuner, five of which are pictured below (see Figure 15 and Figure 16), are typical of the time period. We have no record of whether the family owned or purchased

either the original stove or its replacement, or whether the house stove was considered water company property associated with the house.

M. Friedman & Co.

"THE CREDIT HOUSE," 233-235-237 POST STREET

With Monday morning's business we introduce our new Stove Department, by far the biggest and best in San Francisco. We have secured for this department the "QUICK-MEAL STEEL RANGES," the most thorough, up-to-date stoves manufactured in the United States,

Regular Price, \$29.



Regular Price, \$51.



The Quick Meal Steel Range
Not a painted stove. Comes either polished or enamel steel, the enamel baked on with 300 degrees of heat. The furnace fire of a laundry would not warp it.

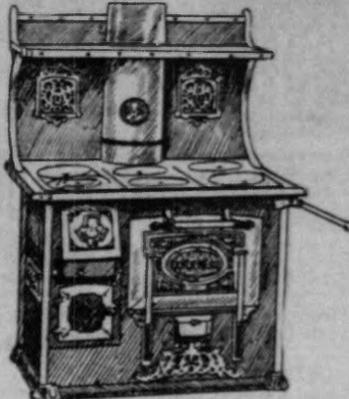
and we propose now to popularize them by offering them at prices lower than cast iron stoves

You would not wear the dress you wore ten years ago.
You would not read by the lamp you had ten years ago.
Then why should you use the stove you used ten years ago, when a stove meant so much iron to hold a fire?

The Quick Meal Steel Range
A compact, scientific mechanism for the best preparation of food and the greatest concentration of heat.

The Quick Meal Steel Range
A board of asbestos between two layers of steel. The heat is thrown in, not out. You do not have to stand in the middle of the room to keep it from scorching the walls.

Special for the Week, \$26.75



We offer this Range to you, special for this week, to induce you to see our new line. A hundred of the most perfect ranges made is a sight well worth seeing, and one of them regularly priced at \$30.00, now special for this week only at \$26.75, is a chance that should not be missed.

Regular Price, \$34.



Regular Price, \$37.



The Quick Meal Steel Range
A hundred of them displayed on the Department's 3000 square feet of floor room. They take up less room than a cast iron range, so do not get the idea that they are big and cumbersome.

The Biggest Furniture House on the Pacific Coast and the Biggest Stove Department of Cast and Steel Ranges in the West.

Figure 15. M. Friedman and Company stove advertisement. From the November 29, 1903, edition of the *San Francisco Call* newspaper. Image in public domain, accessed via California Digital Newspaper Collection, Center for Bibliographic Studies and Research, University of California, Riverside, <<http://cdnc.ucr.edu>>, accessed November 24, 2016.

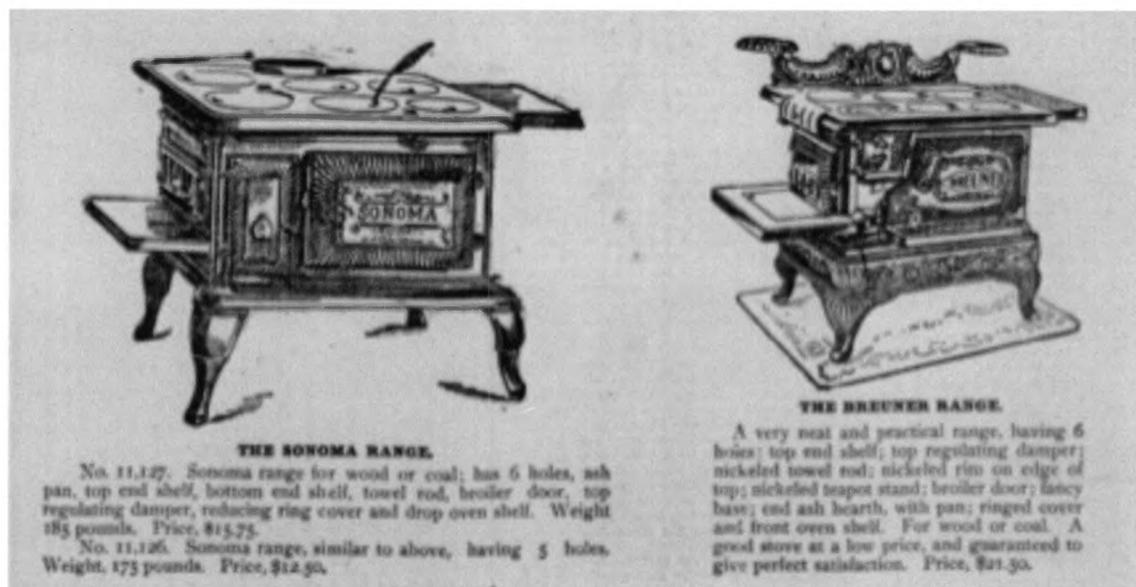


Figure 16. John Breuner stove advertisement. From the October 15, 1899, edition of the *Sacramento Daily Record-Union* newspaper. Image in public domain, accessed via California Digital Newspaper Collection, Center for Bibliographic Studies and Research, University of California, Riverside, <<http://cdnc.ucr.edu>>, accessed November 24, 2016.

What we do know is that the explosion was terribly disruptive to the rhythms and responsibilities of Frieda Duerst's day-to-day life. Most stoves had a boiler for heating water for cooking, bathing, washing clothes, and cleaning (Carlisle 2014, 46–47). Frieda would have depended on the stove, therefore, for almost all of her essential housekeeping tasks. She probably rose with the sun, or somewhat before, for numerous reasons. Some were practical: she could check that the stove had not gone out in the night, for example, and she could begin preparing breakfast, so that both she and her husband could make the most effective use of daylight hours (Beecher and Stowe 1869, 191–96).

Frieda's culinary responsibilities almost certainly included breakfast, and one or two other cooked meals during the day—possibly an afternoon meal of bread, cold meat, and

leftovers, and certainly supper, a hearty working-class meal that often included a soup or stew (S. Williams 2006, 162). The supper of the working-class diverged during the Gilded Age from the dinner of the middle class, which had transformed from a midday meal into an evening meal of two or three courses (S. Williams 2006, 162). In between cooking meals, Frieda Duerst would have cleaned the dirty utensils—pots and pans, tableware, plates, and cups—using water heated in the stove’s boiler or in a vessel on the stove. She would have washed the household’s dirty clothing using water heated the same way. To iron clothes also required setting a heavy metal iron on the stove to heat (Beecher and Stowe 1869, 427–29).

Frieda Duerst’s day-to-day use of the stove was associated not only with a set of tasks, but with sounds and smells, as well. The day would have begun with the metallic sound of a brush on metal as she cleaned the stove and removed the ashes, separating them from the coals from the previous night’s fire, which would form the basis of the new day’s fire. She would have cleaned the stove while it was relatively cool, to prevent burns or fires that could occur from applying stove polish to a hot stove (*Los Angeles Herald* 1906a). She would have added wood, to expand the fire for preparing breakfast. The wood would have crackled as it caught fire. Breakfast preparation would have filled the house with the sound of sizzling bacon, of the oven shutting with a clang on baking bread, and of pots and pans set into place on the stovetop. Washing up would have brought the clatter of dishes and the smell of hot, soapy water. Doing laundry would have required heating more water, and it would have brought out the smells of the laundry soap and the dirt and

grime that were being removed—perhaps the smell of smoke from working around the stove fire or of livestock from tending to the horse and cow in the barn. Frieda would have boiled water for coffee or tea to accompany a mid-afternoon meal (S. Williams 2006, 162). She might have started preparing the evening meal immediately afterwards, or she might have already set supper in motion, by putting a pot of stew on the stove to cook slowly through the course of the afternoon and evening.

The stove also gave the household air a particular feel and smell. The influential nineteenth-century domestic writer Catharine Beecher (1800–1878) observed in her *Treatise on Domestic Economy* that stoves, when heated, gave off a characteristic (and unpleasant) iron smell and made the household air very dry (Beecher 1854, 281; S. A. Leavitt 2003, 11). In *The American Woman's Home*, which Catharine Beecher co-authored with her sister Harriet Beecher Stowe, the sisters noted that stoves even threatened health if the kitchen was inadequately ventilated. They cautioned that “for want of proper instruction, most American housekeepers [i.e. housewives]... poison their families with carbonic acid [i.e. carbon dioxide] and starve them of oxygen” (Beecher and Stowe 1869, 81). The “carbonic acid” was not only dangerous per se, argued an unnamed but “learned physician” who had written to the sisters, but it also contributed to an unhealthy atmosphere: “No wonder there is so much scrofula, tubercles, catarrhs [references to tuberculosis and respiratory ailments], dyspepsia [indigestion], and typhoid diseases” (Beecher and Stowe 1869, 62). The unique smell and dryness of the air around the stove, in short, may also have brought to mind other bodily concerns.

The keeping of the household stove was probably present in the minds of both Frieda Duerst and Emeline Batchelder throughout their day. Beecher and Stowe followed contemporary consensus in asserting that a stove that was properly managed would burn continuously day and night (Willey 1890; Schuyler 1890). This continuity not only provided heat on cold nights, but it also meant avoiding the hassle, time, and expense of starting a new fire with kindling (Beecher and Stowe 1869, 73). As the historian Marjorie Kreidberg notes, properly using and maintaining a stove was hard work that required a great deal of experience. “The joy felt by a housewife as she gazed upon her newly acquired cookstove was usually abruptly terminated by her first attempts to use it,” Kreidberg dryly observed (Kreidberg 1975, 154).

Frieda Duerst and Emeline Batchelder faced a complicated process of operating an intricate set of ventilators and dampers that controlled their respective stoves’ overall heat, as well as the way in which air moved and heat was modulated in particular parts of the stove (Kreidberg 1975, 154). Keeping the stove burning through the night entailed setting these dampers to allow enough air to enter to maintain combustion, but not so much air that the fire consumed the fuel before morning (Beecher and Stowe 1869, 74). Each woman’s skill in controlling temperature would have improved over time. Because stoves, even of the same model, varied in the production and movement of heat and air, achieving and maintaining any given temperature required intimate familiarity with the particular stove in question (S. Williams 2006, 58).

Maintaining the stove in working order was also a laborious process expected of the working-class housewife. Every morning, as I have previously mentioned, Frieda Duerst and Emeline Batchelder would have swept out and gathered the ashes from the base of the stove (Carlisle 2014, 23). The stove also produced large quantities of soot and dust, which sometimes made their way to other surfaces in the household; these, too, regularly needed to be cleaned off (S. Williams 2006, 59). Frequent polishing of all of the stove's cast-iron surfaces was necessary to keep it rust-free; steel and brass surfaces, meanwhile, required polishing with emery paper and either oil or chamois skin (Kreidberg 1975, 157). The Woodside Store records show that the Duerst family purchased stove polish in April 1895 (Tripp 1907). The type of polish is not recorded, but it may have been something like the popular Rising Sun Stove Polish, which promised to avoid giving off the "poisonous and sickening odor" associated with competitors' polishes when the stove was heated (quoted in Kreidberg 1975, 158).

We can recreate other basic aspects of the families' kitchen environment. Water company records indicate that the kitchen in the dam-keeper house measured 10 feet by 18 feet; it was exceeded in size only by the sitting room (13 feet by 15 feet), and equaled by the largest of the bedrooms (12 feet by 15 feet) (Tuttle n.d.). The kitchen would have included a table, which would have served as both a place to prepare food and a place to eat it. The families' experience of meals would have taken place against the background noise of whining mosquitoes in the summer and of water thundering over the dam in the winter rainy season. The smell of the horse barn, the vegetable garden, and the lake

would have been constants, as well. The plates and mugs used by both families were utilitarian, but bore modest decoration (L. Jones et al. in progress). There is no evidence that either family owned or used service sets of fine porcelain.

As the household responsibilities associated with the stove illustrate, the tasks of housewives and mothers during the Gilded Age were numerous, laborious, and (as Frieda Duerst certainly knew well) sometimes even dangerous. Stove-related injuries and deaths were a regular feature in local and California newspapers (*Sacramento Daily Record-Union* 1880b; *San Francisco Call* 1891a; *San Francisco Call* 1893e; *San Francisco Call* 1894c; *San Francisco Call* 1898a; *Press Democrat* 1900a; *Press Democrat* 1900b; *San Francisco Call* 1903d; *San Francisco Call* 1903a; *San Francisco Call* 1903e; *Press Democrat* 1903; *Press Democrat* 1904; *San Francisco Call* 1905c; *San Francisco Call* 1905a; *Press Democrat* 1906; *Los Angeles Herald* 1906a; *Los Angeles Herald* 1906b; *Los Angeles Herald* 1907b; *San Francisco Call* 1908c; *Mill Valley Record* 1908; *San Francisco Call* 1908b; *San Francisco Call* 1908a; *San Francisco Call* 1909c; *San Francisco Call* 1910a; *San Francisco Call* 1910b; *Los Angeles Herald* 1910). In a storm, the stove chimney could be struck by lightning, sending a life-threatening amount of electricity coursing down into the stove body (*Red Bluff Daily News* 1893; *Sacramento Union* 1907; *Red Bluff News* 1907). Children were often injured or killed when they touched a hot stove surface or scorching hot food, or placed inappropriate objects in or on top of a lit stove (*San Francisco Call* 1893e; *San Francisco Call* 1904d; *Los Angeles Herald* 1905a; *Los Angeles Herald* 1907b; *San Francisco Call* 1908a). Both Frieda

Duerst and Emeline Batchelder, therefore, almost certainly took care to warn their children to be respectful of the stove, and their own movements around the lit stove in the kitchen would always have been tempered by a respect for the space immediately around its often burning-hot surface. Family members, especially Frieda and Emeline, were likely to have received burns from working around the stove; these they probably treated with Vaseline. Two Vaseline bottles were found in trash pit levels associated with the Duerst family (see Chapter 5).

It is important to recognize that the nature of gendered roles changed over the course of the Gilded Age, influenced by what anthropologist Suzanne M. Spencer-Wood calls “domestic reformers,” who sought to increase the status of both women and housework (Spencer-Wood 2013, 170–73). One of the most prominent and influential of these was Catharine Beecher, a popular author and promoter of the concept of a rational home (McHugh 1999, 35; Strasser 2000, 202–3; S. A. Leavitt 2003, 11, 15). She was joined by numerous others, including Lydia Marie Child, Sarah Josepha Hale, and Eliza Farrar (Welter 1966, 154–55; McHugh 1999, 16–18). Some, like Beecher, steadfastly maintained the idea that women’s and men’s proper roles constituted separate, well-defined spheres (Strasser 2000, 201). Others, like Elizabeth Cady Stanton, advocated for radical equality between the sexes, including the admission of women into the highest halls of government and commerce (Davis 2010, 66).

We do not know which books and local papers, if any, Frieda and Emeline read. (Indeed, we do not know for certain the degree to which either was literate.) But we do

know that during the Duerst and Batchelder families' time at Searsville (1891-1906), more than 10,000 articles appeared in California newspapers discussing women's suffrage and women's rights; the *San Francisco Call* itself published several thousand articles during this time that mentioned women's efforts to gain the vote (Center for Bibliographic Studies and Research, University of California, Riverside 2016). Bay Area editorials were generally supportive of the movement. "[I]t may be of interest to know that in nearly all the countries on the globe women have had some form of suffrage for years," the *Call* observed. "We of the United States are somewhat slow in extending to them this privilege" (*San Francisco Call* 1895e). San Franciscans, male and female alike, formed organizations like the West End Political Equality and Mission Suffrage clubs to agitate for female rights and suffrage (*San Francisco Call* 1900a).

Pleas on Two Continents for Woman Suffrage	
LADY COOK PLEADS WITH ROOSEVELT	WOMEN CLAMORING FOR SUFFRAGE
Woman Suffrage Advocate Points Out the Need of Ballot for Weaker Sex	Great Demonstration Made in the Streets of London by a Petticoat Throng
TELLS OF HIS VIEWS	ALL CLASSES MINGLE
<p>WASHINGTON, Feb. 2.—Lady Cook of England, formerly Miss Tennessee Claflin, had an audience today with President Roosevelt. She made a plea to the President for his support of the movement to give suffrage to women.</p> <p>"My interview with the President was a most charming one. I can understand now his wonderful popularity with the people. I feel that I have been amply repaid for my trip to America," declared Lady Cook after the conference.</p> <p>Lady Cook and Olive Logan called on the President on a two-fold mission, their principal object being to discuss with him the question of suffrage for women and also to thank the President for his efforts to secure a position in the Congressional Library for the latter. The President expressed his regret that he could do nothing for Olive Logan in this regard, because of a defect in her hearing. Lady Cook, however, has come to the relief of...</p>	<p>LONDON, Feb. 2.—Titled women clad in silk and velvet, women with university degrees, girl graduates in caps and gowns, women artists, members of the lyceum and other women's clubs, temperance advocates and women textile workers, gathered from all parts of the country this afternoon and marched in procession through the rain and muddy streets of London in support of a movement in favor of woman suffrage. The participants were marshaled at Hyde Park, and, with flags and banners, marched through Piccadilly, Regent street and Pall Mall to Trafalgar Square, where a public meeting was held.</p> <p>The speakers demanded the early attention of Parliament to the bill providing for the enfranchisement of women. The demonstrators included such well known persons as Lady Frances Balfour, Lady Maud Perry and other titled women; Mrs. Fawcett,</p>

Figure 17. The trials and tribulations of female reformers and suffragettes were headline news in San Francisco papers at the turn of the twentieth century. From the February 10, 1907, edition of the *San Francisco Call* newspaper. Image in public domain, accessed via California Digital Newspaper Collection, Center for Bibliographic Studies and Research, University of California, Riverside, <<http://cdnc.ucr.edu>>, accessed November 24, 2016.

Frieda Duerst and Emeline Batchelder's housework was not simply neutral labor, rather it was embedded in a web of cultural understandings and values (Griswold 1982; Ogden 1986; Strasser 2000). One of the most well-known elements of this cultural context is the so-called "Cult of Domesticity" or "Cult of True Womanhood," which emphasized the four virtues of "piety, purity, submissiveness and domesticity" (Welter 1966, 152; see also Griswold 1982, 63; Lindley 1996, 56; Tierney 1999, 324). Closely related discourses framed the American woman's personal identity and role in the household in terms of patriotism, religious duty, professionalism, and science (Clark and Wilkie 2004; Spencer-Wood 2013). A housewife's patriotism, both women and men of the period opined, was manifest in her work ethic. Frugality, hard work, and early rising were part of female duty not only to family, but to God and country (Strasser 2000, 186–90). Rising early was also seen as a habit both "American and democratic" (in contrast to the "indolence" of "aristocratic" European societies), which mothers were expected both to practice and to instill in their children (Beecher and Stowe 1869, 191, 295; Strasser 2000, 186).

Similarly, child-bearing and child-rearing was an act of supreme patriotic service and accomplishment. "You are training young minds whose plastic texture will receive and retain every impression you make, who will imitate your feelings, tastes, habits, and opinions," Beecher reminded American women, "and who will transmit what they receive from you to their children, to pass again to the next generation, and then to the next, until a *whole nation* will have received its character and destiny from your hands!"

(Beecher 1848, 279). Child-rearing placed the democratic woman in a position akin or even superior to an “imperial queen” (Beecher 1848, 279–80).

Many female reformers like the Beecher sisters were also particularly keen to frame housework in scientific and professional terms, in no small part due to their desire to increase women’s status and promote other reform goals, like female suffrage (Strasser 2000, 186). Reformers like Lillian Gilbreth and Christine Frederick expanded the use of the language of professionalization to argue explicitly that households should be run like businesses (Strasser 2000, 188–89). Thus, the language of capitalism and corporate America was both adopted and upheld in service of promoting the housewife’s status while nonetheless defining her in terms of her household role. This also burnished the status of capitalism, by suggesting that it was the best and most natural system through which to structure even the most personal aspects of human existence.



Figure 18. Lilly M. Spencer, "Shake Hands?" (1854). As the feminist historian Susan Strasser observes, Spencer's lithograph illustrates precisely the kind of disorganized, irrational kitchen that reformers like Catharine Beecher were so keen to improve (see, by comparison, Figure 19). Image courtesy of the Ohio History Connection (H 24655).

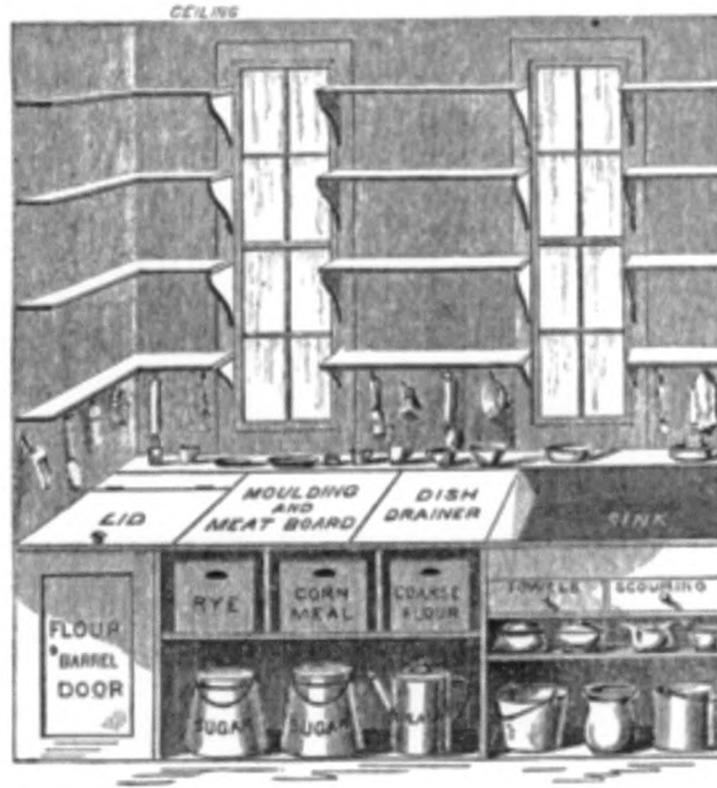


Figure 19. Image from page 34 of Catharine Beecher's *New Housekeeper's Manual* (1873), showing the "rational," efficient kitchen. The powerful juxtaposition of images (see Figure 18) is from Strasser (2000).

Nonetheless, the rational household was extremely constraining: relentlessly organized, packed with well-regulated children, and adhering strictly to prescribed patriotic, religious, and moral ideals (Strasser 2000, 192). Not all female reformers agreed with this kind of regimentation—the Declaration of Sentiments and Resolutions made at Seneca Falls, New York, in 1848 had explicitly called for women to move freely beyond household roles and into commerce and wider professional life (Stanton, Anthony, and Gordon 1997, 75–82).

Many women felt bored and limited, and fell into what we would today call depression. At the time such symptoms were diagnosed as “neurasthenia” or “hysteria,” which I discuss in greater depth in Chapter 5 (Ogden 1986, 94–95). A layer of the trash pit associated with the Batchelder occupation contained one medication associated with the self-treatment of depressive symptoms: Paine’s Celery Compound, which was advertised as a general treatment for nervous complaints. At over 20 percent alcohol it is no wonder that people felt its effects. It is possible that Emeline Batchelder used the compound to treat bouts of sadness, though the broad profile of nervous ailments treated by Paine’s—as well as the presence of other household members—makes it impossible to know for certain precisely who used the compound, and toward what end.

To what extent did the larger gendered discourse shape the lives of Frieda Duerst and Emeline Batchelder? We have no surviving record of their thoughts, feelings, or beliefs about their own role—or that of women more generally—in the household sphere or that of the wider world. We do not know whether they found joy and fulfillment in their daily tasks, felt sadness at its limitations, or a mix of both positive and negative emotions. None of the artifacts recovered from the trash pit clearly indicate the way in which they viewed their own role at home and in society. Nonetheless, this broader discourse adds dimension and depth to our understanding of their daily lives on the bluff above the Searsville dam, by exploring the regional and national discourses surrounding their household and societal roles, and by suggesting the many ways in which they might have viewed their own purpose and position.

We can speculate, based on the cultural context explored above, that Frieda and Emeline may have viewed their work in the household in terms of contemporary American ideals of capitalist organization and efficiency, conceiving of the home as a microcosm of society and commercial production, wherein efficiency was a synonym for good (Strasser 2000, 213). Frieda's perspective was probably different from that of Emeline, however, as Frieda was a Swiss immigrant (she came to America at age 19), whereas Emeline was native-born. American domestic values, while a powerful current among native-born Protestant whites, were often less pervasive among immigrants (Lindley 1996, 56).

At the same time, we can complicate our understanding of the household roles played by Frieda Duerst and Emeline Batchelder by recognizing that individuals often subverted stereotype and expectation, and that each had a unique and particular life experience and perspective on contemporary norms and expectations. The ways in which Frieda and Emeline spent their time may have played against type: they may have helped with the dam-keeper's official work duties, completed typically male tasks in the barn or elsewhere outside the home, and may have partook in masculine activities like smoking and gambling (see Chapters 4 and 6).

We can also complicate our understanding of artifacts like the stove by recognizing that individuals often used artifacts in idiosyncratic ways. Members of the Duerst and Batchelder households might have used the stove for purposes other than those most commonly outlined by stove makers or contemporary housekeeping manuals: for

example, as a depository for small garbage, an unexpected place for hiding valuable goods, a place to melt furniture wax, or a site of experimentation with liquids (in the case cited here, turpentine) used around the home (*Daily Alta California* 1874; *Pacific Appeal* 1878; *San Francisco Call* 1905c; *San Francisco Call* 1908d; *Sacramento Union* 1909).

A majority of the housework probably did fall on the shoulders of Frieda and Emeline, but it is important to also recognize the contributions of other family members in the home sphere. For example, certain household tasks were considered children's work, such as basic cleaning tasks, scrubbing vegetables, fetching water, and caring for small farm animals, like chickens and rabbits (Clark and Wilkie 2004, 355, 357). Although we have no evidence that the dam-keeper families did or did not keep small domestic animals like chickens or rabbits, the families did carry drinking water from a sheltered, fresh spring located in the hillside on the opposite side of the dam (Regnery 1991, 120). Based on an oral history interview with one of the Batchelder children, Dorothy Regnery attributed the task of carrying water in the Batchelder household to Edgar Batchelder—perhaps he carried the water himself instead of exposing his children to the risk of falling from the dam, precisely the type of accident that had cost the previous dam-keeper his life (Regnery 1991, 120). This is a small example of one of the many ways in which an individual or families' particular history could lead to patterns of behavior that were circumstantial and did not play to contemporary generalities.

Part II: Food

Delicious smells wafted through the dam-keeper kitchen at mealtimes. Many of the foods consumed by the Duerst and Batchelder families were prepared on the stove or inside its oven. Our knowledge of these foods comes from archaeological remains and historical records. These data sources are limited in specific respects. We can expect that most fruit and vegetable refuse has decomposed into soil in the intervening century (or may have been used to feed livestock), while other types of cast-offs—particularly meat—leave more permanent traces, mostly in the form of bones or containers. The archaeological team did not conduct flotation analysis for macro-botanicals (L. Jones et al. in progress). Furthermore, while metal cans and Mason jars survived, their labels did not.

While we do have a record of the foods purchased by the Duerst family at the Woodside Store, this data must be approached with caution for several reasons. First, we have primary source evidence that the family acquired vegetables and fruits from their own gardening as well as the cultivated fields and orchards of their neighbors (Regnery 1991, 120). Second, the Woodside Store was also not the only store available to the Duersts; there were other stores accessible to them in nearby towns, such as G. W. La Pierre and Son, with stores in both Palo Alto and Mayfield (*Daily Palo Alto* 1897a; see also *Daily Palo Alto* 1895; *Daily Palo Alto* 1897b; *Daily Palo Alto* 1901). Therefore the Woodside Store ledger cannot be taken to be a comprehensive account of their store purchases. Third, for the Batchelder family, meanwhile, we have only archaeological

data, because no purchases were recorded for the Batchelders in the Woodside Store ledger, and no records are known to exist from the store or stores that they visited in Redwood City (Regnery 1991, 118). In sum, the archaeological data pertaining to food at the dam-keeper site consists primarily of faunal remains, while the historical record of store purchases is limited to the Duerst family and is not comprehensive.

The presence of ample faunal remains in the dam-keeper family's trash pit nonetheless provides us with valuable information—especially in light of the fact that meat was the foundation of the American working-class diet in this period (Cronon 1992, 212).

Archaeological analysis of the faunal remains associated with both the Duersts and the Batchelders—considered in light of their Bay Area and national context—suggests that their level of meat consumption was commensurate with that of contemporaries and shared key features in common with other working-class families, rural and urban alike, particularly a heavy reliance on beef. In contrast to their working-class counterparts in cities, however, the dam-keeper families enjoyed immediate access to small-to-medium-sized wild game (including deer, rabbits, and duck), as well as the space and means through which to raise a limited number of their own livestock, and the ability to purchase cuts of meat from animals raised by neighbors, either directly or from the nearest store at Woodside.

Faunal Analysis Methods

The faunal remains found in the families' trash pit tell us about both the kinds and the quantities of the animals that they ate. Cut marks on the bones tell us if the meat was

butchered, which can in turn indicate whether the meat was commercially acquired. Burn marks tell us how the meat was prepared. The particular bones present—and missing—can tell us about the particular cuts of meat preferred or purchased. Just over five percent of the total artifacts recovered from the dam-keeper house site—1,122 of 19,882 artifacts total—were faunal (i.e. non-human animal) bones and bone fragments. No human bones were discovered. Bone pieces collected in the field were washed and dried. They were then measured, weighed, and examined by osteologist Katie Turner to identify signs of modification and determine which bone pieces were diagnostic and which were non-diagnostic. A diagnostic bone piece was defined as a piece that could be used to positively identify or characterize the larger element from which it came. The animal species was determined and recorded for diagnostic bones whenever possible. Non-diagnostic bone pieces—those for which the larger element could not be characterized—were recorded as such. Groups of associated bone pieces (e.g. articulated joints) were analyzed together.

Several criteria, including depositional context, signs of modification, and size category were used to distinguish bone pieces associated with the dam-keeper occupation period activity from both earlier and later depositions, as well as contemporary wildlife death unrelated to human hunting activity. Depositional context refers to the particular surroundings of each piece of bone. Bones found at the same depth as artifacts from the time period, surrounded by said artifacts, and/or within the trash pit feature were likely to have been deposited at approximately the same time. Signs of modification point to the

intentional preparation of meat for consumption and consist of particular types of cut marks and burn evidence.

Cut bones, for example, exhibit straight edges, often with linear striations along the cut surface (caused by the motion of a saw or knife blade). Burned bones are brittle and discolored (white, gray, blue, or black) compared to unburned bone. Bones were also categorized by size of animal, inferred from the size of the particular skeletal element in question. Small animals included rodents; medium animals included rabbits, foxes, and bobcats; large animals included deer, sheep, and pigs; and very large animals consisted of cows.

Table 1. The distribution of modified and unmodified bone pieces, by unit, recovered from the Searsville dam-keeper house site (data from L. Jones et al. in progress).

Unit	Burned	Unburned	Cut	Uncut	Total
DK1	0	8	0	8	8
DK4	0	84	61	23	84
DK6	17	11	14	14	28
DK7	1	1	1	1	2
DK8	1	30	6	27	31
DK8 fire activity area	40	7	1	46	47
DK8 trash pit	256	642	171	727	898
DK9	3	0	0	3	3
DK12	0	1	0	1	1
DK13	0	1	1	0	1
DK16	1	3	1	3	4
DK17	1	2	2	1	3
DK19	0	1	0	1	1
DK20	1	2	1	2	3
DK24	0	3	0	3	3
DK32	0	4	0	4	4
DK34	0	1	0	1	1
Total	321	801	259	863	1,122

Faunal bone unrelated to occupation or indicative of limited activity

Aside from Units 4 and 8, the bone pieces from the other units that yielded faunal remains do not advance our understanding of life at the dam-keeper house site—their depositional context and lack of modification indicates that they were most likely the remains of animals that died naturally, rather than as a result of human hunting.

Furthermore, many of the bone pieces were found in upper levels that represent depositions that took place after the dam-keeper family occupation period.

Six units (Units 1, 12, 19, 24, 32, and 34) produced a total of 18 unmodified bone pieces. In five of these six units, the bone pieces were encountered within the top two levels of the unit, indicating that they were deposited in the more recent past, long after the dam-keeper occupation period. The four bones in Unit 32 were encountered in Level 9. The unit itself was an anomaly. Whereas many units turned sterile after three or four levels, Unit 32 produced artifacts in Level 10, six units deeper than the others. This can probably be explained by the fact that there were very few artifacts in upper vertical layers of the unit, suggesting that the soil filled in from a nearby surface (as opposed to being deliberately dumped or even relocated). In any given level of unit 32, there were seldom more than four items, but the trickle of artifacts continued steadily until a meter of depth. The number, size, and condition of bones in Units 1, 12, 19, 24, and 34 suggest natural processes of deposition and bioturbation.

Many of the bone pieces in the remaining seven units (Units 6, 7, 9, 13, 16, 17, and 20) were non-diagnostic; many of the diagnostic pieces belonged to small animals. Many of the burned bone pieces were associated with later fire activity, likely from the recreational use period of the mid-twentieth century. With the exception of four bones in Unit 6, all bone pieces were found within three levels of the surface, indicating a relatively recent deposition. None of these units produced substantial quantities of bone—a total of 39 pieces were recovered across the seven units. Unit 6 produced 28 of

these pieces of bone; half of these pieces were identified as rodent bones that were burned and not cut. Thus, the bones were likely not the result of dietary consumption by a dam-keeper family, but rather of a large campfire or cooking fire that burned bones already in the ground (Bennett 1999).

Units 4 and 8: large quantities of modified bone indicative of human occupation

In only two of the units were the densities of bones recovered greater than 50 pieces per cubic meter of soil or 200 grams per cubic meter. One of the units was Unit 8, containing the trash pit; the other was Unit 4, which also yielded a high concentration of bone pieces. Level 2 of Unit 4 produced five bone pieces, and Level 3 produced 25 pieces. In Level 4, underneath an iron pipe, the excavators encountered a grouping of 54 pieces of bone clustered together, which they collected as a feature. Although nearly three-quarters (61 of 84) of the bone pieces found in Unit 4 exhibited evidence of cutting, none showed signs of having been burned. The pipe was likely installed by Batchelder while his family lived in the house to carry water for garden plants and work animals (Regnery 1991, 120). Thus, it is likely that these bones were deposited either by one of the dam-keeper's families or by laborers during the construction of the dam.

The bones found in Unit 4 encompass all size categories of animal (from small to very large), as well as numerous anatomical elements. Once again, bone pieces associated with small animals show no signs of modification and are likely the result of natural deposition processes. The cut bone pieces of animals from larger size categories indicate meat butchered for consumption. The lack of burn marks suggests that preparation

occurred under relatively controlled conditions, in which neither temperature nor cooking time was excessive.

The remaining 976 pieces of bone came from Unit 8—898 of them associated with the trash pit and thus with the dam-keeper occupation period, 47 with the higher and later fire activity feature (associated with the later recreation period), and 31 with neither feature (and thus unassociated with the dam-keeper occupation). Of the bones that were not associated with the features, seven exhibited cut marks, and one fragment was burned. Many of these pieces were non-diagnostic; the few that were diagnostic were identified as pieces of ribs from large animals. Of the 47 bone pieces from the fire activity feature, 38 were burned and highly fragmented and thus non-diagnostic. Although it was not possible to derive information about the animals from which they came, the burned condition of the pieces attests to their being exposed to high heat for an extended period of time in the fire activity area.

Of the 898 bone pieces found in the trash pit, 256 of them (more than one quarter) were found in the top level. The remaining bone pieces were distributed relatively evenly among the remaining seven levels of the trash pit. Each level contained an area in which bone pieces were concentrated, suggesting that larger numbers of bones were sometimes discarded in a group. Bones were also found scattered throughout the trash pit, suggesting that the occupants of the site disposed of bones as they consumed the meat associated with them and that the group disposal events were associated with the preparation of large quantities of meat (which would have contained numerous bones). However, the

bone pieces in many of these areas of concentration tend to be non-diagnostic because of fragmentation and burning.

Animal Types

As mentioned previously, analysis of the bone pieces included categorizing the size of the animal and identifying the anatomical element included, where possible. Animals in the “small” category include rodents, particularly squirrels, rats, mice, gophers, and moles. “Medium” animals include foxes, bobcats, chickens, and rabbits. The “large” category includes deer, pigs, and sheep, and the “very large” category includes cows. Bones in the small size category represent mostly burrowing rodents that were likely not part of the diet of the dam-keeper families and may have been introduced to the archaeological record in the intervening years (Schmitt and Zeier 1993). Small, non-dietary animals accounted for 93 bone pieces. Bird bones were classified into either the small or the medium size categories. They were clearly distinguished from any other bones in those categories (such as rodent bones) by the density and morphology of the bones. Seven dietary bird bone pieces (six chicken pieces and one duck piece) were identified.

Most identifiable bone pieces recovered from the trash pit were attributed to large and very large animals. Further analysis of these bone pieces progressed in two similar veins. As mentioned previously, the category of very large animals included only cows (at least two adult cows, based on differences in vertebrae). The fact that all of the modified bones pertain to a single species means that we can use the particular skeletal elements

recovered to determine the minimum number of each cut of meat represented in the trash pit (Lyman 1987). From this minimum number of cuts, it is possible to arrive at an economic analysis of household beef consumption.

Meanwhile, in the case of the other large animals—which includes sheep, pigs, and deer—it was not possible to firmly establish species for each bone piece. Thus, attempts to determine minimum number of meat cuts for each species would be subject to uncertainty. Instead, I have chosen to group the bones in the “large” category into three general regions of the body: (1) loin and hind legs; (2) shoulder, front legs, and ribs; and (3) neck and feet.

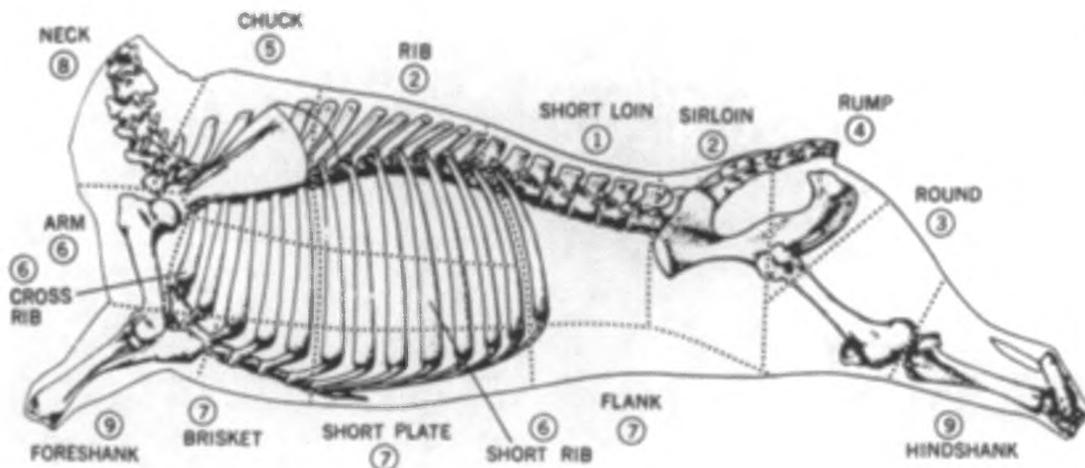


Figure 20. Major secondary cuts of beef, ranked by retail value in the late 19th century (Schulz and Gust 1983).

Table 2. The distribution cuts of beef indicated by faunal remains in the Searsville dam-keeper trash pit, with corresponding price rank (after Schulz and Gust 1983), from 1 (most expensive) to 9 (least expensive) (data from L. Jones et al. in progress).

Beef Cut	Count	Price Rank
Short Loin	8	1
Sirloin	1	2
Rib or Chuck	7	2 or 5
Round	3	3
Rump	1	4
Chuck	3	5
Cross and Short Ribs	0	6
Arm	0	6
Plate and Brisket	0	7
Neck	12	8
Shank	5	9

Occupants of the dam-keeper house site consumed meat from a variety of different cuts. The price rank of the cuts favors the ends of the cost spectrum—the most expensive short loin and the least expensive neck and shank. It bears mentioning that, while the rib cut is the second-most expensive cut and the chuck is moderately priced, the two cuts border each other and share some similar anatomical features. It is possible that bones at the border between the cuts might have been included with one cut or the other, depending on the skill and consistency of the butcher. It is also worth noting that the more expensive the cut of beef, the smaller the quantity generally provided (Lyman 1987).

The most cost-effective, lowest cost cuts of meat were near the head and the hooves of the animal (specifically, the neck and shank cuts). The muscles that comprised these meat cuts produced less tender meat, which required longer cooking times (such as soups or stews) to produce palatable food (Shackelford, Wheeler, and Koohmaraie 1995). Thus, it is highly likely that the dam-keeper families prepared and consumed soups made from such cuts, which represent the most common cut category (see Table 2).

It is noteworthy that bones of the head and feet were largely absent from the bone pieces recovered. One would expect to find these skeletal elements either if the animals were butchered on-site, or if the animals were butchered elsewhere but the occupants purchased these cuts for consumption (e.g. pig's feet). The fact that they were not present among the bones excavated suggests that butchery occurred elsewhere, likely at the ranch whence the meat came.

Eggs and Dairy

It is worthwhile to note at this point that the Duersts likely kept a cow for milking, but not for meat. Dairy and eggs represent similarly transient food types. Here again the historical record can fill in a few archaeological blanks. The Duersts regularly purchased butter, which was sold in rolls, and eggs, which were sold by the dozen. The Duersts bought one or two dozen eggs at a time (see Table 3). One commodity the Duersts did *not* buy at the Woodside Store was milk. They did purchase milk pans, however, as well as a strainer pail and milk skimmers at various times, suggesting that they made their own butter with milk from their cow, in addition to purchasing butter from the store (Tripp

1907). One further dairy product was available from the Woodside Store: cheese.

Although cheese was available for purchase at earlier dates, the Duersts bought none until 1896. Over the course of four shopping trips that spring, they purchased 18 pounds of cheese, followed by at least two more pounds in November of that year (Tripp 1907). It is possible that prior to this time, they made their own cheese or purchased it from a neighbor. It is also possible that they simply discovered the joy of cheese in 1896.

Neither the West Approach nor the Cypress Project analyzes the consumption of eggs or dairy products, as neither left behind sufficient archaeological remains, so it is not possible to make a comparison.

Table 3. Purchases of eggs and butter made by the Duerst family at the Woodside Store (data from Tripp 1907).

Date	Item	Quantity	Cost
August 8, 1894	Butter	1 roll	\$0.45
December 1, 1894	Butter		\$0.40
December 6, 1894	Eggs	24	\$0.60
	Butter	1 roll	\$0.40
December 22, 1894	Eggs	12	\$0.30
	Butter	1 roll	\$0.40
January 22, 1895	Butter	1 roll	\$0.40
February 21, 1895	Butter	1 roll	\$0.30
March 6, 1895	Butter	2 rolls	\$0.60
March 30, 1895	Eggs	24	\$0.25
	Butter	1 roll	\$0.25
April 15, 1895	Eggs		\$0.15
August 1, 1895	Eggs	24	\$0.40
September 28, 1895	Eggs	24	\$0.50
February 6, 1896	Butter		\$0.35
April 6, 1896	Butter	1 roll	\$0.30
May 5, 1896	Butter		\$0.30
May 13, 1896	Eggs	2 dozen	\$0.30
	Butter	2 rolls	\$0.70
May 27, 1896	Butter	1 roll	\$0.30
June 17, 1896	Butter	1 roll	\$0.40
July 16, 1896	Butter	2 rolls	\$0.60
August 15, 1896	Eggs	24	\$0.40
	Butter	1 roll	\$0.50
August 15, 1896	Eggs	24	\$0.40

Other Animal Remains

The dam-keeper house was located 16 kilometers from the Pacific Ocean, which lay to the west over the Coast Range, and 12 kilometers from San Francisco Bay to the northeast. The excavation recovered 27 shell fragments across occupation periods, of which nine were found in the trash pit. Four species were identifiable from the remains: Pismo clam, common Pacific thracia, common Washington clam, and giant Pacific oyster; other remains were too fragmentary for species identification. These species are native to the Pacific coast, including the San Francisco Bay area, suggesting that the dam-keeper families consumed local shellfish.

Limited historical evidence—but no archaeological evidence—suggests that the dam-keeper families also ate fresh fish. Local historian Dorothy Regnery recorded, based on an interview with Edgar H. Batchelder, that the dam-keepers fished for salmon in the basin at the foot of the dam using only a pitchfork (Regnery 1991, 120). No fish bones or scales were found in any of the archaeological units, however, including the trash pit. Any fish were probably gutted at the point of capture, to avoid the smells associated with doing so at home.

Summary of Faunal Data

The younger Batchelder made no recorded mention of animal husbandry at the house in his oral history interview with local historian Dorothy Regnery, except to say that there was enough literal horsepower to transport the family, a wagon, and a month's-worth of groceries between Redwood City and the house (Regnery 1991, 118). Nevertheless,

several considerations suggest that the dam-keeper families probably did not raise animals for their own meat consumption. First, the faunal remains do not appear to contain even a majority of skeletal elements from a single individual, as one might expect to find if an animal had been consumed by a single household. Second, the lack of head and foot bones indicates that butchery was not taking place at the dam-keeper house site. Third, photographs of the site show a picket fence quite close to the house but offer no indication of any further fence to contain a herd of grazing animals (see Figure 21).

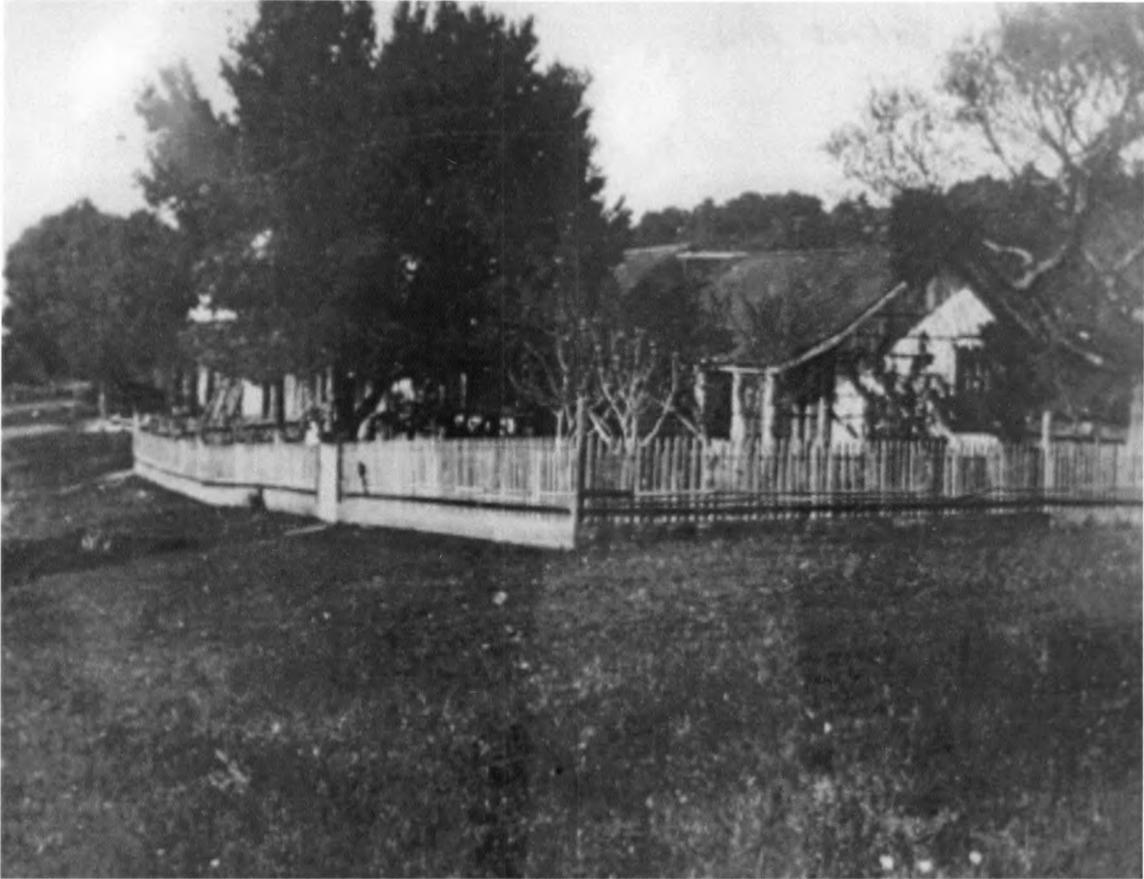


Figure 21. The only known photograph of the dam-keeper's house and immediate surroundings, circa 1900. The barn outbuilding is largely obscured by the oak tree in front of the house. Photo courtesy of the Portola Valley Historic Resources Committee Archives.

It is important to note that the families may have acquired some of their meat by hunting, and that they may also have sold or traded meat to or from neighbors (Douglass Bailey, personal communication). The Woodside Store ledgers do not indicate that the family sold any meat to the Woodside Store (Tripp 1907). Between 1894 and 1896, the Duersts purchased five boxes of cartridges from the store, as well as a steel trap and a quantity of shot, and bullet casings were found in trash pit layers associated with both

families (Tripp 1907). It is not certain whether these items were acquired to control a household pest problem (rodents or rabbits in a garden, for instance), to eliminate fauna that were considered “undesireable [*sic*]” by the water company (Bee 1923c), to hunt (game birds, rabbits, or deer, for example), or some combination of these. A successful hunt at some distance from the home, followed by field dressing (butchery of the animal in the field) could account for the lack of head and foot bones in the trash pit, even with bones from the body of deer. In the case of rabbit and duck, many of the bones would be small and delicate enough to disintegrate over time.

Whatever meat they did not produce themselves, the dam-keeper families must have acquired directly from a local producer or through an intermediary such as the Woodside Store (which itself purchased food from local producers to sell through the store-front). The historical record does not indicate whether the dam-keeper families purchased meat directly from a rancher, but the Woodside Store records do show three purchases of butchered meat by the Duersts (see Table 6).⁵

Both families had a horse and buggy that they used for errands like grocery shopping. For the Duersts, grocery shopping at the Woodside Store entailed a round-trip of several kilometers; for the Batchelders, who shopped almost exclusively in Redwood City, the trip to Redwood City consumed an entire day and was only undertaken once per month (Regnery 1991, 118). The Batchelder children thought the road to Redwood City was the “longest... in the world” and staved off boredom by trailing switches in the dust behind the wagon (Edgar H. Batchelder, quoted in Regnery 1991, 118).

Table 4. Purchases of meat, fish, and shellfish made by the Duerst family at the Woodside Store (data from Tripp 1907). Beef made up the vast majority of their meat, followed by lobsters. What fish they purchased from the store was canned.

Date	Item	Quantity	Cost
May 2, 1894	Corned beef	2 cans	\$0.50
May 16, 1894	Corned beef	2 cans	\$0.50
June 4, 1894	Beef	2 cans	\$0.25
August 8, 1894	Beef	2 cans / 2 lbs	\$0.50
September 1, 1894	Lobsters		\$0.30
	Oysters		\$0.25
September 20, 1894	R Shoulder	8 1/2 lbs	\$1.10
October 13, 1894	Corned beef		\$0.50
November 22, 1894	Codfish		\$0.40
	Salmon	3 cans	\$0.50
January 22, 1895	Salmon	3 cans	\$0.50
March 6, 1895	Ham	9 1/2 lbs	\$1.40
	Salmon	3 cans	\$0.50
	Tongue	2 cans	\$0.30
March 30, 1895	Tongue	[2 cans]	\$0.30
April 15, 1895	Tongue	2 [cans]	\$0.30
August 1, 1895	Salmon bellies	10 lbs [canned]	\$0.80
August 28, 1895	Lunch tongue	2 cans	\$0.60
October 13, 1895	Tongue	2 cans	\$0.60
November 2, 1895	Lunch tongue	2 cans	\$0.60
	Corned beef	6 cans	\$1.25
January 8, 1896	Lobsters	3 cans	\$0.50
February 6, 1896	Lobsters	3 cans	\$0.50
March 3, 1896	Lobsters		\$0.75
May 27, 1896	Beef	4 cans	\$0.90
June 23, 1896	Beef	4 cans	\$0.90
	Salmon		\$0.50
	Lobsters		\$0.50
August 7, 1896	Lobsters	2 cans	\$0.50
	Salmon	2 cans	\$0.50
November 29, 1896	Bacon	5 lbs	\$0.60

Canned fish, however, was accessible to the dam-keeper families and their neighbors through local stores like the Woodside Store. The Duersts purchased ten pounds of salmon bellies in August 1895 (Tripp 1907). Salmon bellies were the most succulent and fatty part of the fish; because of their high fat content, they spoiled quickly and required preservation (Nims, Nims, and McKean 1996, 52). The great twentieth-century American gourmand James Beard, who came of age in the decade following the Batchelders' departure from Searsville, noted that in his childhood salmon bellies were a delightful winter breakfast treat, served with "toasted homemade bread and fine tea and marmalade" (Beard 2002, 148). Because of their tendency to go rapidly rancid, they were normally immediately separated from the rest of the salmon after capture, then immediately soaked in a highly salty solution in a can or jar. The rich salmon bellies were so popular during this period that some canneries harvested only the bellies and left mountainous quantities of the rest of the fish to rot in piles (Lichatowich 2001, 94). The salmon frenzy led to incredible waste and a backlog of fish to process; sitting on the docks for days, many fish were processed after becoming infested with maggots (Lichatowich 2001, 94).

This fact underscores an essential difference between the modern American experience of food and that of the Duersts, the Batchelders, and their contemporaries. Whereas we purchase our food confident that it does not contain maggots, mice, and other adulterations, the Duersts and Batchelders had no such assurance and would have taken care to inspect their food—ideally prior to purchase, or immediately upon opening the

container in which it was packaged. Frieda Duerst and Emeline Batchelder, as food preparers for the house, would have served as gatekeepers to prevent foul-tasting and dangerous food from reaching their families' plates.

Greed and dishonesty were not limited to the salmon-fishing industry, of course. Similar practices in the meat-packing industry in Chicago—which shipped meats all over the country on the railroad—formed the subject of Upton Sinclair's muckraking book *The Jungle* (1906). Sinclair's exposure of unsanitary practices in the packing-houses—from selling meat that workers had stepped on to throwing dead (poisoned) rats into the grinders alongside meat to stuff into sausages—sparked outrage (Sinclair 1906, 166; Elias 2009, 62). Shortly after publication of *The Jungle*, Congress passed the first strong and effective laws to regulate the food industry in 1906 (*Federal Food and Drugs Act of 1906* 1906; Cronon 1992, 253; Lichatowich 2001, 94).

Canning (when done properly) helped to address some of the causes of food rot and infestation by destroying harmful microbes. The Duersts purchased canned meat, canned fish, and canned lobsters with some regularity: on nearly half of their visits to the store, they purchased one or more of canned beef, corned beef, tongue, lobster, or salmon (see Table 4). The entries in the Woodside Store ledger do not always specify that the meats were in cans, but the lack of a price per unit, the unchanging cost across purchases, as well as the perishable nature of many of the items, mean that they were almost certainly canned. Similarly, entries for oysters and codfish (purchased in September and November, 1894, respectively) give no weight or price per unit, suggesting that these

items were also canned (Tripp 1907). Analogous records for the Batchelders, who shopped at a store in Redwood City, are not known to survive (Regnery 1991, 118). Pieces belonging to at least 62 cans were recovered across all levels of the trash pit, many of which likely contained food at one time.

Faunal Remains in the Bay Area Context

How does what we know of the Duerst and Batchelder families' diets compare to those of their working-class Bay Area contemporaries? Both the West Approach Project in San Francisco and the Cypress Project in Oakland—which examined dozens of home sites belonging to late nineteenth-century urban residents of all socioeconomic classes—found differences in meat consumption linked to socioeconomic class. These archaeological projects found that households of higher status avoided low-cost cuts of meat; high-class San Francisco households strongly preferred high-cost cuts of meat to mid-range cuts, as well (M. Praetzellis, Praetzellis, and Owen 2009, 414). The presence of numerous bones from low-cost cuts of meat (see Table 2) at the dam-keeper house site is consistent with a working-class household of the time period.

Indeed, working-class households during the Gilded Age tended to derive a large portion of their daily calorie intake from animal sources (both meat and dairy). Whereas animal sources provided only 40 percent of the calories of the diets of higher classes, they accounted for half of the calories of working-class households (Dirks 2016, 38).

Anthropologist Robert Dirks characterizes the rise in meat-derived calories as typical of a shift from undernutrition to overnutrition (Dirks 2016, 38). As food becomes more

plentiful, and as consumers are able to afford to purchase more thanks to economic development, the consumers tend to expand their diets into more diverse types of animal products (Dirks 2016, 38–41).

The results of the West Approach and Cypress Projects compared to those of the dam-keeper site offer an interesting study in the ways in which diet could vary across relatively small geographic scales among Bay Area working class households. In particular, archaeological analysis of working class home sites in San Francisco and Oakland reveals that such families ate a wider variety of fish than the available evidence suggests was true at the dam-keeper site. In their analysis of the Oakland data, Praetzellis and Praetzellis note that small, delicate fish bones often do not survive in the archaeological record and thus the absence of bones should not be interpreted as an absence of fish—they recovered fishing implements (hooks, a reel, and a sinker) from archaeological features that yielded no fish bones (M. Praetzellis and Praetzellis 2004a, 124, 126). Of course, this comparison must be approached with caution: the dam-keeper site represents only two families, and both of those families may have disposed of, or utilized, the bones removed from fish for other purposes, such as garden fertilizer. We also know from local historian Dorothy Regnery's oral historical account with a Batchelder son that the family sometimes fished with a pitchfork at the base of the dam. Any fish caught with this method may have been deboned at creek side rather than up at the house.

With these limitations in mind, I hypothesize that there were real differences in fish consumption between working class households in high-density settlements on the water (such as San Francisco and Oakland), and low-density settlements, such as Searsville, from which a waterfront locale such as Redwood City was a full-day's journey. San Francisco's population density and long waterfront made for a thriving fishing industry (Gibson 2009b, 263). Silversides (smelt) and rockfish were the most commonly consumed fish, and their bones were recovered from nearly every feature that produced fish remains; other species consumed included trout, salmon, sturgeon, mackerel, herring, perch, flounder, carp, and cod (Gibson 2009b, 263–65). Families in the West Approach may have acquired some fish (such as trout, salmon, or sturgeon) fresh at a market, others (such as cod) preserved in salt at a store, and still others (such as smelt and rockfish) themselves through fishing (Gibson 2009b, 265). In contrast, Searsville's distance from the waterfront and relatively low population limited the number of species and quantity of fish available. The Woodside Store records are demonstrative here. The Store sold pork (including bacon and ham), beef, and chicken from local producers, as well as canned and preserved fish and shellfish; they do not appear to have sold fresh fish in any appreciable amount (Tripp 1907). The most likely and regular source of fish for Searsville residents, therefore, would have come from local waterways. The movement of fish up most of these streams had been blocked by the construction of Searsville dam, so the dam-keeper families would have been the last on San Francisquito Creek with access

to fish, as the fish came face-to-face with the dam that denied their progress in ancestral migration patterns upstream (Regnery 1991, 120).

My analysis, as I previously discussed, has foregrounded meat for one simple reason: meat made up the most significant proportion of the working- and middle-class American diet during this era (Shrock 2004, 97–99, 101, 116; Dirks 2016, 34, 95). The archaeological and historical data for the dam-keeper families as well as other contemporary Bay Area dig site data are consistent with this general observation, although the limitations to our data concerning the dam-keeper families' diets (we do not have any record, for example, of what they grew in their own garden, hunted, or trade or purchased from neighbors) mean that any hypotheses regarding the overall proportions of their diet must remain provisional. The predominance of beef as the meat of choice both for the dam-keeper families and working class communities in Oakland and San Francisco was also consistent with national trends; whereas pork had been the most widely-consumed meat prior to the Civil War, in the post-war era the national preference became beef (Shrock 2004, xv; Dirks 2016, 113).

Fruits, Vegetables, and Grains

As the Duerst and Batchelder families sat down to dinner, however, their plates were not simply mountains of meat. Archaeological and historical evidence demonstrates that they ate fruits and vegetables, as well. Our knowledge of the vegetarian portion of their diets, however, is more limited than that of meat. The organic nature of fruit and vegetable remains means that most traces of such materials have become soil over the

course of the intervening century. Some remaining vestiges of botanical material can be recovered through flotation analysis, in which a paleoethnobotanist uses water to process an archaeological soil sample, separating bits of plant matter (which float in the water) from the dirt, rocks, and other debris (which sink). Both the San Francisco and Oakland digs did conducted flotation analysis; the Searsville dig did not. Nonetheless, we can partly address the lacuna in the archaeological record with information recovered from the Woodside Store ledger book.

Store records for the Duersts show that they purchased canned vegetables—mostly corn and tomatoes, but occasionally peas, peaches, and succotash. The family bought potatoes twice in 1894—110 pounds in total (Tripp 1907). Fresh produce seldom appears in the store ledgers, for either the Duersts or other families. This should by no means be taken as evidence that they consumed no fruits. To the contrary, it is likely that fruit as well as vegetables formed part of their diet, since the Searsville area was particularly known for the abundance of its fields, gardens, and orchards. Although Americans in the Gilded Age preferred meat to vegetables, among the latter category, they consumed mostly potatoes, sweet potatoes, cabbage, squash, beans, and rice (Shrock 2004, 101). Among fruits, apples were far and away the American favorite; the love affair only grew as refrigerated railroad cars reached more parts of the country, providing crisp juicy apples year-round (Shrock 2004, 101). With its long growing seasons, mild winters, and fertile soil, the farms and orchards of San Mateo County produced bounties of fruits, vegetables, and nuts, including almonds, apples, apricots, blackberries, beans, beets,

cabbage, cauliflower, celery, cherries, corn, figs, grapes, olives, onions, oranges, peaches, pears, peas, plums, potatoes, strawberries, tomatoes, and walnuts (California State Board of Agriculture 1908).

While the Woodside Store did do brisk business in potatoes, customers only occasionally purchased onions, currants, and raisins (the Duersts purchased raisins and currants on August 9, 1894, and raisins on March 3, 1896—no quantities were recorded either time). Excavation of the trash pit produced only one artifact directly and exclusively related to the consumption of flora: a charred almond shell in the midst of the burn layer, indicating that at least one of the dam-keepers acquired almonds, possibly from a local farm. An oral history conducted with one of Edgar H. Batchelder also indicates that one or both of the dam-keepers picked apples from a local orchard (Regnery 1991, 120).

Photographs of the house yard during the Batchelder occupation indicate the presence of a kitchen garden within the picket fence (see Figure 22). The Duersts probably also maintained a garden—store records list seed among the purchases of April 15, 1895 (Tripp 1907). The type of seed, however, is not indicated, so it is possible that the seed was related to a staple crop for the maintenance of horses, for example. Upper levels of the trash pit (Levels 4 and 5, associated with the Batchelder occupation) yielded fragments of Mason jars. The Batchelders, then, made use of these jars for canning. No such glass pieces were found in the lower, Duerst levels of the trash pit (below the burn

layer), nor do the store ledgers record the Duersts' purchasing any sort of canning implements, indicating that they may not have engaged in canning.



Figure 22. Photograph of the dam-keeper's house, circa 1900, showing the Batchelder children standing next to the home, with part of the kitchen garden visible in front of them. Photo courtesy of the Portola Valley Historic Resources Committee Archives.

The archaeologists of the Cypress Project in Oakland expected to find trends in canning activity based on socio-economic status. In particular, they hypothesized that wealthier households would prefer vegetables and fruits that had been commercially canned, while poorer households would do their own canning out of frugality (M. Praetzellis and Praetzellis 2004a, 157). Instead, they found that half of the features with evidence of home food processing (five of ten features) belonged to some of the wealthiest households (M. Praetzellis and Praetzellis 2004a, 157).

In sum, we can provisionally piece together a rough sense for the vegetable and fruit elements of the dam-keeper families' diets, through a combination of historical evidence and the archaeological remains of kitchen artifacts associated with canning. Historical accounts and store records, supported by archaeological findings, indicate that both families consumed a combination of preserved and fresh fruits and vegetables. The latter came from their own gardens as well as neighbors; the former were either purchased already prepared in metal cans or were preserved in Mason jars from fresh local produce by the Batchelders. What we know of their consumption and preservation of vegetables and fruits is roughly consistent with other working-class households in Oakland and San Francisco.

Food and Taste

We have no direct evidence for the approach to food preparation used by either Frieda Duerst or Emeline Batchelder. American cuisine tended to be very bland, thanks in no small part to the efforts of dietary reformers such as the Presbyterian minister Sylvester Graham (1794-1851) (Slotnick 2013; S. Williams 2006, 196; Duffy 1993, 88–89). Graham advanced a theory of a healthy diet, whose central conceit was that a food's effects on the human body reflected its own essential physical properties, such as heat, cold, spice, blandness, complexity, and simplicity. (It was, in short, a theory with strong ties to classical concepts of bodily health and affliction as a function of the balance of humors: blood, phlegm, yellow bile, and black bile (Duffy 1993, 7, 88–89).) On this basis, Graham promoted the idea that American health was best served by food that was

relatively bland, natural, and simple, without “foreign spices and stimulating foods,” including, for example, “no spices from India; no wines from Portugal, Spain, France, or Madeira” (S. Williams 2006, 196; Graham 1835, 10, 23). Suggested meals consisted of raw vegetables and fruits alongside homemade whole grain bread (S. Williams 2006, 196). There was a strong moral aspect to his theory, as well: overly stimulating foods roused immoral feelings and behaviors (Slotnick 2013).

The worst overstimulating foods did both at once, upsetting digestion and inciting disease while also arousing lustful passions. Graham cautioned against salt, sugar, tea, coffee, and highly spiced food or condiments, as well as heavy meat consumption (Slotnick 2013, 130; see also Graham 1835). Graham himself was a vegetarian (Slotnick 2013). While his message on meat was clearly less successful, his and other reformers’ cautionary approach to spices and alcoholic overindulgence resonated with the American public (Duffy 1993, 88). Prevailing nutritional wisdom, found in housekeeping manuals, informed American housewives to “accustom the children to simple food, simple tastes, and simple amusements, and they will grow up healthy, hardy and happy” (Root 1897, 69). Although we lack any direct evidence of either families’ food preparation practices or reading habits, we can speculate that both households may have internalized at least some aspects of wider cultural attitudes toward food types. They also probably shared some food preparation techniques in common due to the nature of the food available to them: tough meats would still need to be cooked for long periods of time, for instance,

fresh fish would have needed to be checked for dangerous pin-bones, and breads would have needed to rise and bake.

We can also speculate, based on historical context, that Frieda Duerst and Emeline Batchelder may have made an effort to cook a variety of multi-course meals. As stoves replaced hearths as the center of cooking in American homes in the nineteenth-century, one of the consequences of the shift was a move toward more complex recipes and multiple courses, because women had multiple areas in which to place pots and pans (S. Williams 2006, 56). One contemporary writer proclaimed in *Good Housekeeping*, "...it is a mistake to buy a small stove. A range with six lids [i.e. holes to set pots], large oven, elevated warming-oven, and other conveniences is the joy of a housewife's heart" (Schuyler 1890, 175). Contemporary Spring Valley Water Company documents list the menu for some meals served to employees at other company-owned dam-keeper cottages. A cold lunch at the Sunol dam-keeper's cottage included chicken, along with other undifferentiated groceries and refreshments ([Anonymous] 1910). A list of foods purchased for the Crystal Springs dam-keeper cottage for "Dinner, etc. & Breakfast" included ham, bacon, chicken, "meat" (by process of elimination, probably beef), fruit, vegetables, milk, and cream, in addition to other unspecified groceries and refreshments ([Anonymous] 1910).

Sweets and Treats

The general American trend toward blandness was not complete. One specific taste emerged victorious during the Duerst and Batchelder families' time at Searsville:

sweetness. This was despite Sylvester Graham's best efforts—although he had found nothing “intrinsically injurious” about sugar, Graham had warned that “sugar... separated from a vegetable [i.e. refined]” was “to the stomach... highly obnoxious” (Graham 1835, 126). “It is owing to the same cause,” he declared, “that all confectionary... are so exceedingly pernicious” (Graham 1835, 126). The end of the nineteenth century saw a proliferation of sweets and desserts into the American diet (Shrock 2004, 102–3).

In October, 1896, the Duerst family bought a bottle of honey and a pound of chocolate (Tripp 1907). Although the Woodside Store records do not indicate other such purchases by the Duersts, we have ample evidence that they did bake their own sweets, as evidenced by recurring ingredients for baked goods in the store records. The family frequently purchased flour, sugar, and powdered sugar; on other occasions, they purchased yeast, as well as a bottle each of vanilla and lemon flavoring extracts (Tripp 1907). These repeated purchases, when combined with archaeological evidence—a frosting spatula recovered from Level 10 of the trash pit, for example, and a nutmeg grater from Level 10—indicate that Frieda Duerst baked and frosted treats for the household, in addition to bread. By contrast, the lack of Batchelder store purchasing records, combined with a total lack of comparable archaeological evidence for sweets preparation in the Batchelder layers of the trash pit, leave us with no information about the Batchelders' indulgences or lack thereof. The only sugar-specific utensil found in the Searsville excavation—a set of sugar tongs—was found near the surface in a unit outside of the trash pit and likely postdated the time of the dam-keeper occupation.

The families' larger historical context, however, suggests that it is likely that the Batchelders enjoyed sweets and baked goods as much as the Duersts. Industrial advancements through the mid-to-late-nineteenth century vastly increased the availability of sugar, in turn reducing its price and increasing its consumption (S. Williams 2006, 42). Improvements in refining also increased the quality and consistency of sugar, making it more uniform and whiter, further increasing its appeal (S. Williams 2006, 43). The West Approach and Cypress Projects found substantial evidence for sugar consumption in working-class San Francisco and Oakland households, including serving bowls for sugar at home sites in San Francisco, and probable sugar storage vessels in Oakland (M. Walker 2009, 355; M. Praetzellis and Praetzellis 2004a, 163, 166). Additionally, the presence of canning implements suggested that sugar might have been used to preserve fruits, in the form of jams or jellies (M. Praetzellis and Praetzellis 2004a, 149). Canning jars were also present in levels of the dam-keeper trash pit associated with the Batchelder family, so it is highly likely that they, too, utilized sugar to participate in the canning economy. There were no canning jars found in trash pit levels associated with the Duersts. The Duerst family did, however, purchase a substantial quantity of canned food at the Woodside Store (Tripp 1907).

It is possible that the Batchelders consumed even more sugar than the Duersts; certainly members of both households probably experienced an increase in sugar consumption over the course of their lifetimes. In the early 1890s, when the Duersts moved into the home on the Searsville bluff, Americans' per capita sugar consumption

was 65 pounds (roughly 29.5 kilograms). Just twenty years later, American per capita consumption had climbed to 86 pounds (39 kilograms) (Elias 2009, 32). This is an example of the very real way in which America's seemingly distant foreign entanglements could have concrete consequences in the everyday lives of people like the Duersts and Batchelders: the rise in sugar consumption was a direct consequence of the outcome of the Spanish-American War (1898), which allowed American sugar companies operating in Cuba, Puerto Rico, and the Philippines to import their products to the United States with little to no tax (Elias 2009, 32). In sum, the Duersts and Batchelders lived in an era with an ever-increasing sweet tooth and easy access to sugar, which was cooked into baked goods in the stove oven, and into canned foods and other recipes on the stovetop.

Conclusion

In many ways, the stove was the operational center of working-class Gilded Age American homes like the dam-keeper's house. The stove warmed and boiled water for washing clothes, dishes, and inhabitants, and it of course facilitated cooking on the stovetop and in the oven. Even in the warmer climate of California, it provided warmth overnight and in the winter. In Part I, I speculatively explored the daily lives of Frieda Duerst and Emeline Batchelder by connecting the stove door, and the larger stove as a whole, to the daily rhythms of housework, with its rituals, sights, and smells, but also with its broader cultural meaning. I examined the way in which gender roles were being

contested and transformed—a topic frequently covered in local Bay Area newspapers—during their years at Searsville.

Though the stove and kitchen lay at the heart of contemporary expectations of women and the shape of their daily lives, the stove also provided some reformers with a jumping-off point for the reforms they sought to enact to improve women's power and status. Housework was more than a set of actions. I explored the way in which Frieda Duerst and Emeline Batchelder may have conceived of the meaning of their labors. Guided by powerful gendered currents in their nineteenth-century cultural context, particularly the so-called "Cult of Domesticity," I imagined the way in which they may have viewed their domestic work as a duty to both God and country: a way to strengthen the nation and buttress their own faith through virtues of hard work, intelligent planning, and capitalist efficiency. It is likely that Emeline Batchelder, as a native-born American, was more strongly influenced by these cultural ideas. As an immigrant, Frieda Duerst brought with her other cultural norms from her childhood in Switzerland. Without more information about her place of origin, we cannot say what these were, but as a fellow Swiss immigrant her husband Melchior Duerst would likely have shared many of them, and they would have influenced the way in which each understood her role in the household.

During the Duerst and Batchelder families' time at Searsville, reformers were also reframing chores and housework in scientific and professional terms, and especially as a type of maximally efficient system that mirrored the efficiency of corporate America's best factories (this is precisely the historical moment that gave us the concept of "home

economics”). The housewife was expected to exploit resources as intelligently and efficiently as the capitalist. The reformers’ goal was to raise the status of women by presenting their work in terms more equal to those of men. It is possible that Frieda and Emeline read, or heard about, this literature, and they may have ordered the kitchen at least in part according to the latest advice.

The stove door also opens a window on the families’ eating habits. In Part II, I examined the surviving archaeological and historical evidence to recreate, at least in part, what the Duerst and Batchelder families ate as they sat around the table with one another at mealtimes. The archaeological evidence reveals their patterns of meat consumption; we can also piece together information regarding the Duerst family’s consumption of fruits and vegetables from historical sources. We have no such records for the Batchelder family, however, and our knowledge of the Duersts’ and Batchelders’ diets is ultimately incomplete.

But what we do know about their diets suggests that what they ate was consistent with the diets of working-class contemporaries in the San Francisco Bay area and nationally, particularly in their reliance on meat, the specific cuts of meat they ate, and their use of canned goods. The dam-keepers’ habits differed from those of their working-class contemporaries in Oakland and San Francisco because they lived further from the bay and the ocean; the dam-keepers therefore consumed less fresh fish than many other Bay Area residents. Their patterns of food consumption also differed from working-class urban contemporaries insofar as the families’ rural location allowed them to obtain fresh

foodstuffs from neighbors who owned farms, orchards, and livestock. The families' ownership of shotguns suggests that they may also have hunted for their own game, which they could additionally have used to barter with neighbors.

Considering the dam-keeper families' food consumption within the larger American context we can imagine—based on contextual facts—the ways in which their experience of food was influenced by several concepts and concerns, particularly contemporary dietary science (with its theories regarding the relationship between bodily health and the heat, chill, spice, blandness, and other features of food), ever-present concerns with food freshness and safety, and the wide variety of sources from which food was acquired—some locally through personal connections, some as a consequence of a growing trend toward corporate mass-production and mass-distribution of food. The archaeological record at the Searsville dam-keeper site reflects the rise of mass-produced food and its consumption: the house trash pit contained at least 62 cans of mass-produced canned food. That number is probably low, as many small, thin, and ultimately non-diagnostic pieces of rusted metal were found, as well.

Finally, through my exploration of the stove's role in both housework and food preparation I defamiliarized the seemingly familiar, opening a new space for us to imagine the families' lived experience. In the nineteenth century, stoves—a kitchen appliance still with us today—demanded a set of skills and an awareness for potential danger that our modern stoves do not. This stove door's particular history serves as a wonderful example of this distinction. Modern stoves, as a general rule, do not explode.

But the Duersts' stove detonated after Melchior booby-trapped the woodpile with gunpowder-stuffed wood in an effort to scare off a local wood thief, and his wife triggered the trap herself. As I show, fires, explosions, injuries, and deaths caused by contemporary stoves were a remarkably common occurrence. The stove's entire surface became burning hot, and members of the household had to take great care in not touching or brushing up against its surface. A stove changed the very feel of the air and the smell in the kitchen, drying the room and giving each breath a metallic element.

Similarly, food could not be approached with the same attitudes and level of trust we tend to employ today. We expect that the packaged foods we purchase and consume en masse are fresh and sterile. Eating them without inspecting them carefully will generally not make us ill. But the dam-keeper families' approach to food had to be much more cautious. When obtaining food locally, the families would have had greater control over the quality of the food. Food from more distant sources, however, had to be treated with special care. The mass producers of preserved meat, seafood, fruits, and vegetables were completely unregulated, and some had no qualms about rancid or diseased material into their cans (Sinclair 1906, 166; Lichatowich 2001, 94; Elias 2009, 62). We can imagine that Frieda Duerst and Emeline Batchelder probably took care as they opened cans to smell and inspect the contents.

In sum, every aspect of the dam-keeper families' kitchen was endowed with cultural meanings and practical considerations that are largely or entirely absent from our lives today. By closely examining the stove door as an artifact, exploring the implications of

the physical constitution of the door and the stove more generally, analyzing the surviving data concerning the families' diet, and re-evoking the cultural meanings of housework and a woman's role in the family, we begin to recover and imagine day-to-day life as it unfolded around the family stove.

Chapter 4: Pipe



Figure 23. Piece of a white clay pipe recovered from Level 10 of the dam-keeper house site trash pit. Photo courtesy of Heritage Services, Stanford University.

Acrid. Hot. Vaporous. Melchior Duerst's and Edgar Batchelder's breathing was saturated by these sensations as each enjoyed a favorite habit: pipe-smoking. From this

single artifact type—a pipe—we know that both men’s days on the Searsville dam were colored by the smell, taste, and sensation of smoking a tobacco pipe. The type of pipe they used was made of baked white clay. This was a workingman’s pipe, utilitarian and affordable. It bore no design or decoration, apart from the name of the maker stamped into the clay, and it clearly signaled socio-economic status: wealthier men purchased carved meerschaum pipes. The dam-keeper could carry the short-stemmed pipe in the pocket of his overalls while he checked the flumes for debris or worked in the garden or around the barn. He could have gripped the pipe in his mouth so that his hands would be free to write in the company logbook. Advertisements in California newspapers touted the frugality of pipe tobacco over cigars—a man could buy a week’s supply of pipe tobacco for less than the cost of a cigar. Ads for clay pipes recognized its class associations and reframed the experience of clay pipe-smoking as a kind of sensory wealth, promising, for example, that just the experience of smoking a pipe was more satisfying than the “big bank account” of “Jay Gould or Russell Sage” (*Los Angeles Herald* 1898; *Los Angeles Herald* 1892a).

As these advertisements suggest, socio-economic class, embodied experience, and the experience of Gilded Age consumerism were connected in the act of smoking a pipe. As I will show, gender distinctions and biases were, as well. I begin to unpack this story by first closely examining the physical artifact itself: its particular physical features, its manufacture, and its relationship to both other dam-keeper artifacts and the historical records of the family’s tobacco-related store purchases.

The pipe's physical particularities open up a wider space for analysis of its use and meaning. The physical pipe was a cheap, working-class object. Its simple physical form, as I will show, contrasted dramatically with the pipes and smoking habits of the wealthy. Working-class consumption habits embraced inexpensive disposable goods. I examine the way in which the meaning and experience of pipe smoking were framed not only by class distinctions, but also by concepts of gender. In particular, the emerging ideals of Victorian womanhood—delicate and domestic—made tobacco smoking by women a taboo, and thus a potential avenue for self-assertion.

I use the pipe as a point of entry into an archaeology of the senses, using the archaeological facts on hand—in tandem secondary source literature—to speculate about the experience of pipe-smoking. The dam-keepers' experience with pipe tobacco made them part of a larger masculine, working-class collective. These men were united not only in their choice of smoking pipe, but also in some sense in their smoking experience, and perhaps even in the musings and aspirations in which they indulged while smoking. I point toward the implications for the experience of bodily health, using the well-developed secondary source literature on the history and science of smoking and the body to argue that the collective experience of working-class smokers put them at risk for diseases caused by tobacco; wary of expensive physicians, many self-treated with one or more of the plethora of patent medicines (a theme I will return to in Chapter 4).

Finally, analysis of class, race, and gender in smoking come together with analysis of phenomenological experience in the way in which pipe smoke captured a dual meaning:

taste was both an experience of the body and, as the nineteenth-century transcendentalist William Wordsworth observed, a concept transferred “to intellectual *acts and operations*” (Gigante 2008, 68–69; Wordsworth 1815, 369, emphasis in original). It was through both senses of the word “taste” that advertisers like the one above appealed to their customers. The choice of pipe and tobacco was about bodily experience, but it was also about status, discernment, and even moral feeling. This chapter examines the tastes of pipe tobacco, in both of these senses.

* * *

Archaeological and Historical Data and Analysis

The trash pit produced 27 fragments of pipes (see Table 5). All of the pipe pieces were composed of cheap white clay. The fragments were scattered across multiple levels. In the Duerst occupation levels, we unearthed one fragment in Level 11, 16 fragments in Level 10, and three fragments in Level 9; in the Batchelder occupation levels, we uncovered two fragments in Level 8, two fragments in Level 6, and three fragments in Level 4. The presence of these fragments suggests regular tobacco use in both the Duerst and Batchelder households. A further eight pieces of clay pipe fragments were discovered in other excavation units: one each in Units 4 (Level 6), 4A (Level 2), 19A (Level 1), 28 (Level 2), 30 (Level 1), and 33 (Level 1); two pieces were found in Unit 7 (Level 1). These eight fragments are consistent with the material composition of the pipes found in the trash pit, but it was not possible to tie them to either dam-keeper. Of these 35 total pipe pieces, 20 were fragments of pipe stems, all which were consistent with short-

stemmed pipes. (I will analyze the significance of short- versus long-stemmed pipes in the section titled Tobacco and Socio-Economic Class.)

Table 5. Tobacco-related artifacts recovered from the dam-keeper house trash pit and other, non-trash pit units (data from L. Jones et al. in progress).

	Duerst occupation (trash pit)	Batchelder occupation (trash pit)	Outside of trash pit
Fragments of white clay pipes	20	7	8
Fragments of other pipe types	0	0	0
Other tobacco paraphernalia	0	0	0

Eight pipe pieces (five from the trash pit, three from other units) had writing on them. These maker's marks identify at least two manufacturers of the pipes, each based in Glasgow, Scotland—William White and Sons and McDougall. Both companies were major manufacturers and exporters of clay pipes around the turn of the twentieth century (see Davey 1983; Davey 1987; Gojak and Stuart 1999). The popularity of Scottish pipes more generally—and predominance of the city of Glasgow in the industry—was due to the abundance of suitable clay in the vicinity. Each manufactured hundreds of pipes per day using the characteristic local clay (see Davey 1983; Davey 1987; Gojak and Stuart 1999). The fragments show maker's marks from at least five distinct pipes. This is a lower end estimate, however. None of the pipe fragments in the trash pit could be pieced together. With pieces found on the ground outside the pit, the number of pipes represented may be higher.

The historical ledger of the Woodside Store indicates that Melchior Duerst purchased one such clay pipe on November 22, 1894, for 25 cents (Tripp 1907). The ledgers reflect no pipe purchases by Edgar Batchelder, who shopped in Redwood City; no ledgers are known to survive (Regnery 1991, 118). The Woodside Store ledgers indicate that the Duersts purchased tobacco on a regular basis (see Table 6). The record for May 2, 1894, for example, indicates the purchase of four 25-cent boxes of Dills Tobacco. The great regularity of Melchior Duerst's smoking habit is recorded in the 17 other occasions, over the course of three years, on which he purchased either one or two boxes of tobacco (Tripp 1907).

Duerst's tobacco purchases decreased over time, both in amount of money spent (assuming the initial price of 25 cents per box held true, then after 1894 the Duersts did not purchase more than two boxes at a time) and in frequency of purchase (tobacco was purchased only once in 1896: on February 17) (Tripp 1907). The combination of decreased quantity and frequency recorded may indicate either a decrease in the amount he smoked, or that he had found another source for smoking tobacco, perhaps in another town or through a mail-order catalog. Although we have no store purchase records for the Batchelders, the presence of white clay pipe fragments in the upper level of the trash pit indicates that that Edgar Batchelder also smoked. The fragility of white clay pipes and their availability for purchase mean that both men likely purchased pipes from other sources and discarded the fragments in other locations—namely, wherever they broke.

Table 6. Purchases of tobacco and associated items made by the Duerst family at the Woodside Store (data from Tripp 1907).

Date	Item	Quantity	Cost
May 2, 1894	Dills Tobacco	4 boxes	\$1.00
May 16, 1894	Tobacco		\$0.25
June 4, 1894	Tobacco		\$0.50
August 8, 1894	Tobacco		\$0.50
September 1, 1894	Tobacco		\$0.50
September 20, 1894	Tobacco		\$0.50
October 13, 1894	Tobacco		\$0.50
November 22, 1894	Tobacco		\$1.00
December 1, 1894	Tobacco		\$0.25
December 22, 1894	Tobacco		\$0.50
January 3, 1895	Tobacco		\$0.25
March 6, 1895	Tobacco		\$0.50
August 1, 1895	Tobacco		\$0.50
August 28, 1895	Tobacco		\$0.50
September 28, 1895	Tobacco		\$0.50
November 2, 1895	Tobacco		\$0.50
December 10, 1895	Tobacco		\$0.50
February 17, 1896	Tobacco		\$0.50
November 22, 1894	Pipe		\$0.25
May 2, 1894	Matches		\$0.25
September 1, 1894	Matches		\$0.25
November 22, 1894	Matches		\$0.25
January 3, 1895	Matches		\$0.50
March 6, 1895	Matches		\$0.25
November 2, 1895	Matches		\$0.50
December 10, 1895	Matches		\$0.50
March 3, 1896	Matches		\$0.50
April 6, 1896	Matches		\$0.25
May 13, 1896	Matches		\$0.50
July 16, 1896	Matches		\$0.50
October 9, 1896	Matches	Package	\$0.50

No other tobacco-related artifact types were found either in the trash pit or in other units at the site. The centrality of pipe-smoking in the dam-keepers' tobacco use was due in part to historical developments in tobacco habits. Tobacco had arrived in Europe from the Americas in the sixteenth century, where it was consumed either in ground form (snuff) to be snorted or smoked in a pipe (Rapaport 2004, 100; Goodman 2005, 78–80). Snuff held two advantages over smoking tobacco through the eighteenth century and into the early nineteenth. First, snorting the fine powder would instigate sneezing, which was at the time considered salutary (Goodman 2005, 78–79). Second, snuff-takers required only a small box to carry their tobacco, while pipe-smokers required a box for the tobacco, pipe, and accoutrements, as well as some means to light the tobacco, such as lit coals, candles, or flint and kindling (Goodman 2005, 82).

Three nineteenth-century developments spurred the move toward smoking in general: a new method for curing tobacco, new fire-starting technologies, and increased urbanization. To prepare tobacco for consumption, growers dried the harvested leaves in large barns, heated by wood fires. Toward the middle of the nineteenth century, American tobacco growers began channeling the heat of charcoal fires through iron pipes and brick chimneys to heat their curing barns. This process reduced the risk for growers. Indirect heating reduced both catastrophic barn fires and smoke-damaged leaves. This so-called “flue-cured” tobacco was sweeter and less alkaline than “fire-cured” tobacco, and could therefore be easily inhaled into the lungs (Proctor 2011, 31–35). Although cigar

and pipe tobacco tended not to be flue-cured, increasing production of flue-cured tobacco made smoking more palatable by offering smokers milder, less astringent options.

Second, fire-starting technology became safer and more portable, first with Lucifers in the 1820s and 30s, then with safety matches in 1844 (Proctor 2011, 36–37; see also Hughes 2003, 86–87). The Woodside Store records list a dozen purchases of matches by the Duersts (see Table 6). Of course, the purchase of matches cannot be linked exclusively to tobacco pipes—matches were also used for lighting lanterns and cooking stoves. Increased choice in tobacco types and safe, reliable, portable matches prepared the way for smoking to replace chewing as the means of American tobacco consumption.

The third factor that tipped the balance toward smoking was the urbanization of the Gilded Age. With increased population density, spitting tobacco juice became a public hygiene concern, driving chewing tobacco out of favor (Tate 2000, 17). The revolting and visible consequences were already apparent in the British author Charles Dickens's 1842 American travelogue:

Both houses [of Congress in Washington, D.C.] are handsomely carpeted; but the state to which these carpets are reduced by the universal disregard of the spittoon with which every honourable member is accommodated, and the extraordinary improvements in the pattern which are squirted and dabbled upon it in every direction, do not admit of being described. I merely observe, that I strongly recommend all strangers not to look at the floor; and if they happen to drop anything, though it be their purse, not to pick it up with an ungloved hand on any account. (Dickens 1842, 294)

By 1880, nearly 60 percent of tobacco consumed in the United States was in the form of chewing tobacco, with cigars and pipe tobacco accounting for approximately 20 percent apiece; snuff and cigarettes barely registered (Tate 2000, 11). The prevalence of chewing tobacco during Duerst and Batchelder's lives raises the question of whether or not they also chewed. No artifacts related to snuff or chewing tobacco were found at the dam-keeper site. This lack is not surprising, as no plant remains were recovered from the trash pit. With the exception of the first entry for Dills (a producer of smoking tobacco), the Woodside Store records do not list what kind of tobacco Duerst bought (whether for smoking, chewing, or snorting) (Tripp 1907; *The American Federationist* 1908). Given the concomitant purchase of a pipe and the pipe fragments, it is reasonable to conclude that the tobacco that Duerst purchased was pipe tobacco.

Other Bay Area tobacco-related discoveries

Tobacco-related artifacts were recovered from both the West Approach Project in San Francisco and the Cypress Project in Oakland. In both cities, the white clay pipe was almost ubiquitous—white clay pipes were present in each of the San Francisco features that contained tobacco-related artifacts (49 of 49 features), and in all but three in Oakland (77 of 80 features) (Meyer 2009, 248, 254). Among clay pipes with an identifiable maker's mark, Scottish manufacturers predominated. Greater than 90 percent of the attributable pipes in San Francisco came from Scotland (181 of 201 pipes, with others manufactured in France, England, Ireland, and the Netherlands). In Oakland, the Scottish was even more overwhelming (132 of 135 pipes, with just 3 from France) (Meyer 2009,

254). The dominance of Scottish clay pipe makers at the dam-keeper's house is also reflected in the artifacts of the Cypress and West Approach projects.

While the dam-keeper's house produced just one type of tobacco-related artifact—clay pipe fragments—the same was not true of the Oakland and San Francisco digs. Seventeen pipes of other materials (three of wood, four of porcelain, and ten of meerschaum-stone, which will be discussed in Tobacco and Socio-Economic Class, below) were recovered. The meerschaum pipes were found to correlate with households of greater means than other pipes. Three deposits in Oakland—two houses and a hotel—were found to have multiple discarded snuff bottles. The occupants in the houses were immigrants from Europe, where snorting snuff was still quite popular. The snuff bottles in the hotel refuse pit are likely tied to clients from Europe (Meyer 2009, 257). The two San Francisco families that discarded the greatest number of tobacco-related artifacts (including multiple spittoons, pipes of different materials, and 18 white clay pipes apiece) each left the project area for tonier neighborhoods (Meyer 2009, 259–60).

Tobacco and Socio-Economic Class

The dam-keepers' choice of pipe expressed more than practicality; it was also an expression of frugality. As a socio-economic marker, its class associations were certainly communicated visually. As Edgar Batchelder walked around downtown Redwood City, for example, people would have recognized the white clay pipe in his pocket as emblematic of the working-class. (His clothing, too, would likely have marked him as working-class—perhaps a mismatched vest and jacket, or a ready-made blue shirt with an

attached collar, in contrast to the white shirts and detachable white collars of the middle-class and higher (Shrock 2004, 83–85; Stamper and Condra 2011, 343.) Although the odor of tobacco smoke that clung to his clothes might not have been distinct enough to identify the cost of either the tobacco or the pipe from which he smoked it, the smell was certainly associated with masculinity in contemporary Bay Area society (Meyer 2009, 260–61). In this way the smell of tobacco served to mask his own particular smell, creating a pervasive scent in both his clothing and his hair that subsumed him within a masculine collective (Kenna 2005). Contemporary representations of pipes emphasized the masculinity of pipe-smoking and pipe-smokers, often of an evening around a campfire (*San Francisco Call* 1890b; *Los Angeles Herald* 1892b). One vignette even featured a precocious five-year-old boy surmising about the nature of lightning: “Oh, I know mamma, it’s God lighting his pipe” (*Pacific Rural Press* 1884).

If clay pipes differentiated working men from others, what were the alternatives? Tobacco pipes were made of numerous materials, including bone, horn, shell, clay, wood, or stone (almost always the white mineral known as meerschaum or sepiolite) (Rapaport 2004). The most common materials in late nineteenth-century America were the last three: clay, wood, and meerschaum. Clay pipes, at five to 25 cents, were the most common, the least expensive, and the most fragile (Gojak and Stuart 1999; *San Francisco Call* 1896c; *Sacramento Daily Record-Union* 1896d). Wood pipes, often made of cherry, heather, or briar, could be carved into decorative patterns. They were more expensive than clay. Briar pipes were generally between 50 cents and two dollars (*San Francisco*

Call 1894e; *Sacramento Daily Record-Union* 1896d). Finally, meerschaum pipes were crème de la crème of the pipe world. They could be carved into elaborate designs, due to the relative softness of the mineral (hydrous magnesium silicate), but sealing and preparing them to be smoking vessels was a multi-step, labor-intensive and expensive process (Dietrich 2015). The most elaborate carved meerschaum pipes were works of art that served as extravagant props in the performance of wealth. They were stored, not in pockets, but in elaborate, silk-lined custom cases (Marks 2013). Because most meerschaum rock was quarried in what is modern-day Turkey (then the Ottoman Empire), most sculpted pipes also originated from there, adding an air of oriental exoticism that wealthy Gilded Age Americans found irresistible (Leach 2011, 104–11; Marks 2013). In ornate drawing rooms, wealthy gentlemen and ladies performed tableaux and recreations of exotic scenes and Arabian tales—and the men then retired to smoking rooms with their exotic meerschaum pipes (Homburger 2004, 133–34). Many of these pipes depicted famous scenes or figures. Rarely, they were erotic, with classical nudes, or veered toward the pornographic, which the smokers probably felt they could get away with since the pipes were often smoked in the company of men and especially at exclusively male clubs (Marks 2013).



Figure 24. A late-nineteenth-century carved meerschaum lap pipe; at nearly 20 centimeters tall, wide, and deep, it was too large to hold in hand while smoking, and so was held in the smoker's lap. Photo by and used with permission of U.K. collector Mr. Roy Ricketts. Comparing this pipe to the discarded clay pipe belonging to Melchior Duerst (see Figure 23) presents a striking contrast reflective of class differences in tobacco consumption.

Socio-economic class could also be signaled by other forms of smoking, most notably cigars (an upper-class delicacy) and cigarettes (almost exclusively associated with the lowest economic strata). If the dam-keepers ever indulged in either, remnants did not emerge from the trash pit—their organic components would have decomposed across the intervening century. The Cypress Project in Oakland, and the West Approach Project in San Francisco, did successfully recover cigar and tobacco remnants from water-logged

privies, whose anaerobic environment preserved the organic materials. They found cigar box liners in privies associated with more well-off residents and skilled laborers (Meyer 2009, 241–42, 248).

As working-class men, Melchior Duerst and Edgar Batchelder probably never considered becoming cigar connoisseurs, much less meerschaum pipe collectors. Cigars generally cost between six and ten cents, although some cost more than a dollar apiece (*Los Angeles Herald* 1898; *The Literary Digest* 1905; *San Francisco Call* 1905d).⁶ As the Cypress and West Approach archaeological digs demonstrate, cigars, like ornate meerschaum pipes, were generally the domain of wealthy Bay Area residents, who would have set aside special space for cigar-smoking and patterned social norms around the practice (such as smoking rooms and dedicated clothing, including smoking jackets and hats). Duerst and Batchelder were unlikely to have considered cigarettes, either: into the second half of the nineteenth century, cigarettes were associated with the very poor, and men who smoked cigarettes were often considered effeminate, and women who did so were thought dissolute (some women adopted cigarette smoking, therefore, as a sign of their independence and autonomy) (Meyer 2009, 237). These views of cigarettes began to change in the early decades of the twentieth century as Americans encountered cigarettes on trips and as cigarette manufacturers hit upon portraying the inhalation of smoke into the lungs (a possibility offered by milder flue-cured tobacco) as a pleasurable, gratifying act (Tate 2000, 17; Meyer 2009, 237; Proctor 2011, 31–35). Although we cannot rule out

the possibility that they were cigarette smokers, the Woodside Store records do not contain a single purchase of cigarettes for either household (Tripp 1907).

Spittoons—ceramic receptacles for tobacco-laden saliva produced by chewing tobacco—were a common sight in nineteenth-century America, where a plurality of tobacco consumed was still chewed (Meyer 2009, 257; Rogoziński 1990, 111). Yet the popularity of chewing tobacco was already beginning to wane, as urbanization brought increased population density and public health concerns arose from promiscuous spitting (Tate 2000, 17). None of the ceramic pieces recovered from the dam-keeper house trash pit was identifiable as a spittoon. It is possible that no spittoon was used at the dam-keeper house; however, given the prevalence of chewing tobacco at the time, the dam-keepers may have had one or more spittoons for visitors (as no evidence exists to suggest that either man chewed tobacco).

Both Duerst and Batchelder may have liked the portability of the clay-pipe smoking habit and its comforting routine, but it probably had its physical irritations and health concerns, as well. The short stem of the pipe meant that the smoke did not have time to cool off between the smoldering bowl of tobacco and his mouth, and the clay did little to mellow out any bitterness in the tobacco (L. J. Cook 1989; Mrozowski, Ziesing, and Beaudry 1996). Acrid tobacco, heat, and the irritation from the weight of the pipe had all been suggested as causes of what was known as “smokers’ cancer” (*Sacramento Daily Record-Union* 1897b; Crile 1908). Indeed, the emerging field of experimental oncology had recognized that tobacco use caused these cancers of the lip, mouth, throat, and tongue

(Doll 2010, 2; Proctor 2011, 150–51). Nicotine had been identified as a particularly powerful poison already in the 1820s (Proctor 2011, 148). In light of these health concerns, some manufacturers turned the clay pipe’s fragility into an asset, trumpeting the health benefits. Each clay pipe could supposedly “soak up nicotine” from as many as a dozen bowls of tobacco: “it will break before it poisons you” (*Sausalito News* 1890). The ubiquity of pipe fragments throughout the pit (from Level 4 to Level 10) suggest that neither man ever mounted a serious effort to quit, although the frequency with which Melchior Duerst purchased tobacco at the Woodside Store did decline over time (Tripp 1907). Whether this reflected health concerns, or simply a new source of tobacco, is not clear.

There were also more regular annoyances. The bitter, alkaline smoke often caused pipe smokers to cough (Proctor 2011, 32–33). Another regular annoyance was the fact that the clay pipes were easily broken (Gojak and Stuart 1999). They sometimes struck objects or fell from each dam-keeper’s mouth as he worked around the dam and house—striking the ground at the wrong angle and shattering, perhaps inspiring a curse and a frenzied effort to stamp out any smoldering embers of tobacco. The danger of fire highlights the fact that Duerst’s and Batchelder’s smoking practices were circumscribed by their profession, even in or around their physical home. Internal water company documents from shortly after Batchelder’s departure show that the water company was concerned about the risk of fire at Searsville from pipe tobacco, cigars, cigarettes, and lighted matches associated

with recreational visitors. The company asked that all such discarded items be stamped out in the middle of a dirt road (Eastman 1914; Roeding 1914).

Both dam-keepers could have afforded to purchase slightly more expensive, but far more durable, wood pipes. Their choice to purchase short-lasting clay pipes reflected an emerging American consumer attitude: some items were purchased with the expectation that they would not last. They would, in the not-too-distant future, need to be disposed of and replaced (I. C. Walker 1977). Duerst, for example, purchased a replacement clay pipe at the Woodside Store for a quarter (Tripp 1907). He may have shaken his head at the idea of the Bay Area elite paying up to 50 dollars at chic San Francisco tobacconists' shops for ornate figural meerschaum pipes—this would be almost an entire month's salary for the dam-keepers (*San Francisco Call* 1894e; San Francisco Board of Supervisors 1899, A-27; Spring Valley Water Company (San Francisco, Calif.) 1906).

Sensation and socio-economic class were intertwined in the act of smoking and the choice of smoking type and apparatus. Closely related to class concepts in this era were political commitments, and indeed many contemporary Bay Area smokers expressed political preferences through the accoutrement of smoking. Residents of Irish extraction, for example, displayed their support for home rule in their country of origin through pipe insignia such as an Irish harp and shamrock, or through an even less subtle "HOME RULE" slogan written on the bowl of the pipe (Meyer 2009, 255). Other pipes bore the cannon and the words "Garibaldi pipe," possibly in reference to the 39th New York Infantry of the Civil War, the so-called "Garibaldi Guard" (Meyer 2009, 255). Five such

pipes (three of the home rule variety, and two of the Garibaldi) were pulled from contemporary working-class trash pits in Oakland and San Francisco (Meyer 2009, 255). The pipe fragments pulled from the Duerst and Batchelder trash pit reflect no obvious political sympathies. It is not surprising that neither Duerst nor Batchelder seem to have held strong views on Irish or Scottish independence: Duerst was a Swiss immigrant, and Batchelder a native Californian. A majority of the pipes belonging to both men bore no ornamentation other than a maker's mark.

The dam-keepers' pipes were, rather, simply the most common type of clay pipe imported into the Bay Area (Meyer 2009, 254). Unlike either meerschaum or wood, which required drilling and skilled carving to turn into usable pipe bowls, clay could be shaped using molds before being fired in kilns. Skilled makers could export and sell large numbers of pipes at very low prices (Gojak and Stuart 1999). The variety of maker's marks found in the Duerst-Batchelder trash pit suggests that to the dam-keepers, clay pipes from different companies were so similar as to be interchangeable (Gojak and Stuart 1999). As the pipes broke or fractured, Duerst and Batchelder tossed the pieces into the trash pit, where the soil bore witness to a parade of common maker's marks and to the disposability of clay pipes broken over the course of a working man's labors. A short-stemmed pipe had practical implications, as well. Edgar Batchelder's short-stemmed pipe (excavated from Level 4) was more practical than a long-stemmed one—its compact form would have been easier to grip in his mouth as he worked with his hands, or to stick in his pocket when not smoking (L. J. Cook 1989; Mrozowski, Ziesing,

and Beaudry 1996). The trade-off, however, was that the smoke had no time to cool or mellow as it made its way to his mouth. This may have been an unpleasant sensation, or a pleasing one because of its associations with working class politics or simply masculine stoicism—or both.

Tobacco and Family

We may think of smoking as a solitary activity, yet it would have indelibly marked the lives of both dam-keepers' wives and children. As discussed previously, the smell of the smoke would have permeated the men's clothing and hair; it would also have infused the areas around them—furniture, bedding, and clothing that they or their clothing encountered.

As noted before, it is unlikely that the dam-keepers' wives partook in smoking, as emerging concepts of both domesticity and feminine fragility portrayed women as needing protection from the gruff, dirty realm of men (Tate 2000, 23). Hannah and Elsie Duerst, who were respectively five and three years old at the time of their father's death, almost certainly did not smoke, not only because they were females, but also because they were very young. Tobacco smoke presented a hazard to infants and toddlers, from unknowingly puffing on dad's unattended pipe or even from second-hand exposure of a father who smoked near the child's nursery (*Los Angeles Herald* 1905c; *Marin Journal* 1889).

The same was probably true for Lucy Batchelder, born at the house and just 8 years of age when her father was transferred to Millbrae. At the ages of 12 and 11, respectively,

his sons Albert and Edgar H. Batchelder Jr. could have conceivably taken up smoking—a contemporary San Francisco newspaper observed the arrest of six boys aged 14 or younger for smoking cigarettes; the notice was accompanied by stern disapproval for any shop that would sell tobacco to “mere children” (*San Francisco Call* 1907b). Even if the Batchelder boys did not pick up smoking while at Searsville, it is possible that they imitated their father’s habits, pretending to fill the bowl and strike the match before drawing in and blowing out puffs of imaginary smoke (*San Francisco Call* 1906b). They might even have used one of their father’s discarded pipe pieces—a too-short stem would make little difference to the flavor or temperature of their make-believe smoke—before discarding it themselves.

The Experience of Smoke

Smell is a unique sense. As the archaeological theorist Yannis Hamilakis observes, smell “invades human bodies at will, being the most difficult to shut out and control,” an “anarchic” sense. It lies somewhere between the realm of the material—in order to smell, the air must bring some tangible thing to our noses—and the immaterial, in the way in which we describe smells as almost abstract entities. Particularly powerful or fragrant smell are often associated with transcendent moments such as dreams, magic, and the divine (Hamilakis 2014, 17, 77). Indeed, in many cultures smoking and smoke are an important part of social and spiritual rituals (Classen, Howes, and Synnott 2002, 123–60; Triadan 2006; Baires et al. 2013; Pink 2015). Despite its power and pervasive presence in

the experience of day-to-day, it is only in the past few decades that smell and the senses more generally have emerged as an area of anthropological and archaeological study.

The pipe would have been smoked and experienced in an already saturated olfactory environment. The smells of Searsville Dam and its environs were and remain very potent. A Stanford student just after the turn of the century, Edith Mirrielees recalled later that the noxious water of Searsville “carried silt and an odor identifiable a block away” (Mirrielees 1959). The smell of Searsville was ubiquitous and, as a Stanford doctoral student named Flora Scott described it in 1927, “reminiscent of fish or pigpen, or perhaps of both” (Scott 1927, 5). These smells, it is important to observe, were experienced in the moment, at the pace of living and breathing (Bailey and Simpkin 2015). At the same time, they persisted across decades and even across a century, providing the archaeological team with a direct olfactory connection to the past. Every day of the 2012 summer excavation began with the smells of parched grass, fetid lake water, and dust kicked up by the crew’s work boots—all of it baking in the early morning sun that presaged hotter and drier conditions to come. The atmosphere at the base of the dam was cooler, moister, and shadier, and the smells of dust and grass were replaced by the smells of moist earth, damp rocks, and decaying leaves dropped by the trees along the creek. One smell that no longer hangs in the air around Searsville Dam is that of tobacco smoke—today the site is a biological preserve, whose rules admonish visitors to take note that there is “no smoking at anytime or anywhere on the Preserve” (Protocols and Regulations for Jasper Ridge Biological Preserve 2016, 2.1.6). For Edgar Batchelder and

Melchior Duerst, such a future would have been very hard to imagine, even absurd. Tobacco consumption in the United States at the turn of the twentieth century was widespread among men of all social classes, including at their places of work.

The Two Senses of Taste

Tobacco industry advertisers played to consumers' taste in both senses of the word: the physical sensation, but also moral and aesthetic discernment. "Cool" and "smooth" were favorable characteristics of pipes and the smoke they produced (*Marin County Tocsin* 1898). Some tobacco producers touted wondrous flavors (such as Piper Heidsieck's "champagne flavored" pipe tobacco) (*Sacramento Daily Record-Union* 1898). Others decried the use of flavorants, which could be used to mask the poor taste of low-quality tobacco (*Marin County Tocsin* 1898). Good quality tobaccos were said to be "smooth," "mild," "sweet," "fragrant," and "delicious" (*Red Bluff Daily News* 1898; *Marin County Journal* 1892; *San Francisco Call* 1907a). Pipe smokers were advised to take their time—not only would they enjoy the full flavor of the tobacco, they would avoid unpleasant (and putatively carcinogenic) burns of the tongue (*Marin Journal* 1901a). The flavor and feel of the tobacco smoke in the mouth was a central marketing tool for tobacco producers.

WHEN THINGS DONT GO TO SUIT YOU,
AND THE WORLD SEEMS UPSIDE DOWN,
DONT WASTE YOUR TIME IN FRETTING,
BUT DRIVE AWAY THE FROWNS - BY USING
SEAL OF NORTH CAROLINA

SEAL OF
NORTH CAROLINA
PLUG CUT

PLUG CUT TOBACCO.

**THERE IS A
HEAP
MORE CONTENTMENT**
In a pipe and good tobacco
than many a big bank
account. A good many
who smoke

**SEAL OF
NORTH CAROLINA
PLUG CUT**

Enjoy life better than
Jay Gould or Russell Sage.

Packed in
Patent Cloth
Pouches and
in Foil.

Figure 25. Seal of North Carolina plug cut tobacco advertisement from the *Los Angeles Herald*, May 3, 1892. Image in public domain, accessed via California Digital Newspaper Collection, Center for Bibliographic Studies and Research, University of California, Riverside, <<http://cdnc.ucr.edu>>, accessed September 16, 2016.

Some producers, however, were not content to focus on the flavor of the smoke. Instead, they intertwined the flavor and experience with elements of social and economic standing. The Seal of North Carolina tobacco producers sought to associate clay pipes not with the experience of the everyman, but rather with the experience of upper-class privilege (see Figure 25). The company did this by reframing the sense-experience of pipe-smoking as an experience of wealth: sensory wealth. The experience of smoking a pipe, they declared, was even more rewarding than a “big bank account” like that of

railroad tycoons and business partners “Jay Gould or Russell Sage” (*Los Angeles Herald* 1892a; White 2012). The portly man in the advertisement relaxes at a carved wooden desk in a smoking jacket and high-collared shirt, smoking a short-stemmed pipe. This image was not intended to represent reality, but rather the wealth and richness of feeling that the working-class consumer could expect to enjoy while smoking a clay pipe. The language of financial prosperity and material privilege often overlapped with sensory words and phrases: smoke was “delicate,” “rare,” and “rich” (*Sacramento Daily Record-Union* 1892; *Los Angeles Herald* 1899). Blackwell’s Bull Durham Tobacco, meanwhile, claimed that the “comfort-lovers” who enjoyed their product included “the Millionaire in his palace” and “the Laborer in his cottage”; even Old King Cole of nursery rhyme fame would be “merrier under its powers” (*San Francisco Call* 1892d). From this we can speculate that, for the dam-keepers, pipe-smoking evoked a complex body of associations between sensory experience and class aspirations or daydreams.

Conclusion

From a pipe, the way in which contemporary tobacco use was particularly embedded in gender, class, and the life of the body unfold. Although no documents survive chronicling the internal lives and attitudes of the dam-keepers and their families, my analysis of these categories suggests the way in which they may have experienced and understood tobacco smoking. Gender and class substantially inflected the way in which tobacco was consumed during their lifetimes, and the way in which that consumption was culturally presented and understood. Concepts of virtuous womanhood in the mid-to-late

Victorian era interpreted tobacco as a threat to delicate feminine sensibilities and dictated that women should be kept separate from physical and moral contamination. The act of smoking was presented in cultural discourse laden with markers of masculinity, such as ruggedness, strength, and resourcefulness—perhaps even God himself smoked a pipe (*Pacific Rural Press* 1884). Historians of tobacco use in this period, meanwhile, have established that actual tobacco use reflected these cultural mores: men comprised the vast majority of tobacco smokers, with very few female users (Tate 2000, 23). We can conclude that the dam-keepers themselves were probably the primary consumers of tobacco in their households.

Socio-economic class, meanwhile, was often distinguished by contrasting smoking habits. The dam-keepers' own habits were strongly influenced by these social distinguishers. We have no archaeological or historical evidence that either dam-keeper ever purchased or smoked cigarettes or cigars. Cigarettes tended to be the province of the very poor, and their purchase and use would probably have evoked connotations of poverty. The very wealthy, by contrast, smoked cigars, at prices that sometimes rivaled a day's wages for either dam-keeper. Tobacco pipes like the one examined in this chapter had very distinctive socio-economic connections, as well. Ornate, hand-carved stone and wood pipes reflected men of means, who smoked in dedicated rooms, wearing dedicated attire, and often while furthering their social and economic goals. The dam-keepers, by contrast, smoked inexpensive, fragile, disposable clay pipes, the mark of a working-class man.

Smoking carried with it many abstract social and cultural meanings, but it was also a visceral physical experience. The life of the body was intimately connected to the sense of smell and the moment-to-moment rhythm of breathing. Each dam-keeper's smoking habit was part of the sensory and physical worlds of their families: their wives and children smelled and inhaled the smoke second-hand. The children may have later remembered how the smell hung on their father's clothing, and in the air near where he sat, stood, or lay. A passing whiff of tobacco smoke residue, even years later and miles distant from turn-of-the-century Searsville, may have transported them in recollection to a moment in their childhood. But the pipe brought something else with it, slowly and probably just as imperceptibly as the rhythm of breathing from one day to the next (Woodbury 1896). That something may have started as an ever-so-slight shortness of breath. Perhaps months later, a cough. Each may have deepened and grown more frequent with time. The tobacco was transforming their bodies from the inside out: their airways blackened a bit more with each day, the byproducts of tobacco combustion causing damage to the cells of their nasal passages and lungs. It is worthwhile to note that even though the pipe-smoker may not have inhaled the smoke into his lungs initially, the smoker and anyone around him would have inhaled the smoke that he exhaled—the second-hand smoke (Proctor 2011, 32).

In a very literal way, then, smokers and non-smokers breathed the same air, since anyone in the vicinity of the smoker's exhalation would take in the particles of tobacco smoke. In another sense, Edgar Batchelder and Melchior Duerst were breathing the same

air as millions of other working-class men across the country. Their air had a shared quality: a taste, a sensation, and a slew of slowly encroaching health concerns. As I explore in the next chapter, the health problems created by tobacco smoke, both first-hand and second-hand, were probably among the complaints that spurred the families to invest in patent medicines. I have also suggested the way in which pipe smoke served to cover the dam-keepers' own unique smells with a ubiquitous scent associated with masculinity, thus embedding the men in a male collectivity (Kenna 2005).

Smoking tobacco from a short-stemmed clay pipe is an activity whose pleasures and annoyances we can imagine, and whose choices reflected a concern for price and practicality. In the microcosm of one man like Edgar Batchelder—his experience of smoking, his attitudes toward purchase and disposal—we see a part of the national macrocosm and a central pleasure and habit of the working class body once more expand with heat and life. Melchior Duerst's and Edgar Batchelder's short-stemmed clay pipes and the tobacco that filled them were affordable and utilitarian. Their home had no smoking room, no place for the elaborate tobacco-related rituals of the wealthy (Tuttle n.d.). Instead, their pipes travelled with them, from the home on the bluff, through the dry grasses, and down to the dam. They were, ultimately, disposable items, representatives of a new American attitude toward inexpensive goods—their short working life reflecting the acrid, intense furls of smoke that heated the mouths of the dam-keepers, then expanded, rose, and cooled in the clear California air, ultimately lost to sky and wind.

BOTTLE

Figure 26. Dr. Pitcher's Castoria bottle from Unit 8, Level 6 of the Searsville dam-keeper trash pit, corresponding to the Batchelder family occupation. Photo courtesy of Heritage Services, Stanford University.

One of the very first artifacts to re-emerge from the families' trash pit was a simple, 15-centimeter-tall glass bottle. The front and back faces of the bottle bore no lettering; one side bore the embossed letters "DR. S. PITCHER'S," and the other side the word "CASTORIA." When removed from the ground, the bottle contained no liquid. A century or so earlier, it held a sweet, mint-flavored medicinal concoction known as "Dr. Pitcher's Castoria" (Pitcher 1868). Developed as a laxative, Castoria was advertised as a cure-all capable of treating and preventing all manner of digestive troubles in children and infants, making it a must-have for American parents (*San Francisco Call* 1892f; *San Francisco Call* 1906c; Lockhart et al. 2014). The Castoria bottle—and the corporate promises and private hopes that attended it—provides a window into the dam-keeper families' experience of, and attitudes toward, the body and health.

In this chapter, I examine the physical Castoria bottle artifact itself, and relate it to other medicine-related artifacts found at the site. Although we have no surviving record of how members of the dam-keeper families thought about health, disease, and society, we can nonetheless turn to what we know of the context in which they lived to begin to tell a richer story about this aspect of their lives. I analyze the medicine-related artifacts recovered from the dam-keeper site within the regional context of the Cypress and West Approach archaeological projects, which examined contemporary Bay Area medical practices across socio-economic classes in Oakland and San Francisco, respectively. I find that the practices of self-medicating indicated by the dam-keeper families' use of proprietary medicines are largely representative of wider Bay Area family medical

practices, as well as broader national trends established in historical studies of health and medicine in Gilded Age America.

These trends were particularly conditioned along lines of class, race, immigration and ethnicity, and gender. Socio-economic position influenced not only the kinds of medicines that the dam-keeper families could afford, but also the way in which they, and the society in which they lived, viewed health and disease. At the turn of the twentieth century, many diseases were associated with the perceived moral failings of particular racial and ethnic minorities, and with working class and poor households; such households were thus all the more likely to both self-diagnose and self-medicate. Immigrants like the Duersts also tended to favor self-medication with patent medicines over trips to the doctor to obtain prescription treatments. The same symptoms, when found in the wealthy elite versus the poor or working classes, often rendered different and contradictory diagnoses. In the poor or working-class sufferer, these symptoms spoke to an inferior condition; in the wealthy sufferer, the same symptoms were more likely to speak to an excellent work ethic and superior intellect. The diagnosis and treatment of illness and injury within families like the Duersts and Batchelders, meanwhile, was usually carried out by women, whose roles as nurturers and home-runners were strongly culturally defined. Even as they were expected to assume great medical responsibility within the family, however, women were generally viewed as subject to the weaknesses of their own body, particularly physical and mental incompetence and instability brought about by the state of their female organs. For the dam-keeper families, we can speculate

that the health of the body was—as it was for Americans more generally—a site of internal contradictions, and a product, at least in part, of their cultural circumstances.

Castoria

The Castoria bottle pictured above was the first medicine-related artifact to emerge from the trash pit. It was found on its side in Unit 8, at the top of Level 6 (see Figure 28), corresponding to the Batchelder family occupation, as well as to the top of the trash pit in Unit 8. The bottle measured 15 by 5 by 2.5 centimeters, including the neck of the bottle, which itself was 2 centimeters in diameter and 5 centimeters long. It had a slight aqua tinge, a rectangular shape with rounded shoulders, and it was empty, with no visible liquid residue. Its morphology, described in the standardized terms defined by the Society for Historical Archaeology, is as follows.

Table 7. Terms for parts of a bottle, illustrated using the Castoria bottle from Unit 8, Level 6 (after Lindsey 2016a).

Bore (also called the “mouth”): The bore refers only to the opening of the bottle itself, and not to the outer shape of the mouth area, which is known as the finish.

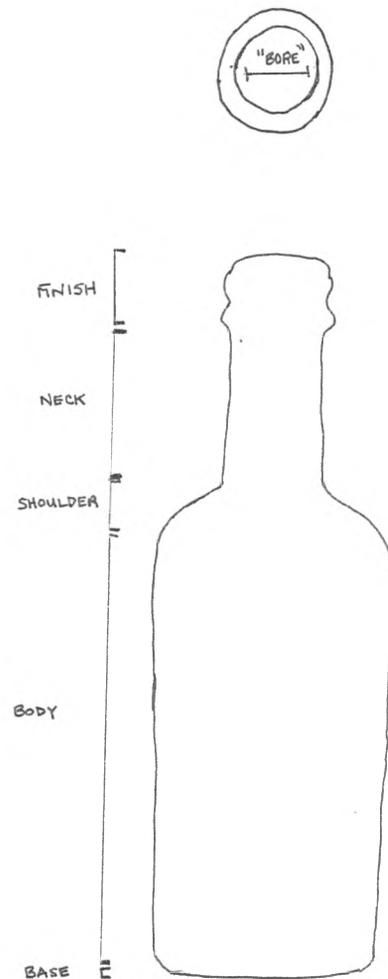
Finish: The finish refers to the area around the bore, on the outside of the bottle. This Castoria bottle has a “double-ring finish,” meaning that two rings of glass encircle the mouth of the bottle. The lower ring, or “collar,” is tapered; the upper ring is rounded (Lindsey 2016b). The rings were probably decorative, not functional: Castoria bottles during this period were closed with a cork in the bore (Lockhart et al. 2014, 16–17).

Neck: The neck refers to the part of the bottle below the finish and above the wider main body of the bottle. The neck of this bottle has a slightly tapered profile, expanding toward the shoulder.

Shoulder: The portion of the bottle connecting the neck to the body. The Castoria bottle shoulder is rounded, albeit with a relatively rectangular profile.

Body: Most of the bottle’s contents are contained within the body section, the bottle section with the largest dimensions. This bottle’s body is rectangular, 10 by 5 by 2.5 centimeters, embossed on one side with “DR. S. PITCHER’S” and on the other with “CASTORIA.”

Base: The bottom of the bottle. Basemarks—embossed characters or symbols on the base—can sometimes reveal the date and place of manufacture. The basemark of this bottle (“16”) does not correspond to documented manufacturers of Castoria bottles (see Lockhart et al. 2014).



Taken together, the morphological features of the Castoria bottle allow us to date its production with some precision. The bottle's shape (rectangular), color (aqua), finish (double ring), and printing ("DR. S. PITCHER'S CASTORIA") are typical of a Castoria bottle produced by the Centaur Company (manufacturers of Castoria) around the turn of the twentieth century (Lockhart et al. 2014, 16). These bottles were mouth-blown into molds that would create the embossed text on the sides. After the glass cooled, a rectangular paper label was affixed to one side of the larger rectangular face. During the period in which this particular bottle was purchased, the label would have presented the contents of the bottle, dosing instructions, and company president Charles Fletcher's reproduced signature (see Figure 27) to indicate authenticity (*San Francisco Call* 1898b). A label was nowhere evident on the Castoria bottle pulled from Unit 8, Level 6; if it were still affixed to the bottle at the point of deposition, it would likely have decomposed in the earth long ago.

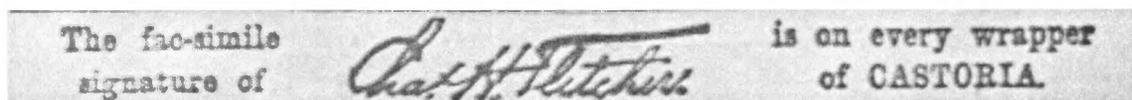


Figure 27. Advertisements for Castoria often advised would-be customers to look for the facsimile signature of company president Charles H. Fletcher to ensure that they were purchasing genuine Castoria (*San Francisco Call* 1898b). Image in public domain, accessed via California Digital Newspaper Collection, Center for Bibliographic Studies and Research, University of California, Riverside, <<http://cdnc.ucr.edu>>, accessed October 7, 2016.



Figure 28. Unit 8 photographed at the point at which we encountered the top of the dam-keeper families' trash pit at the bottom of Level 5. The first Castoria bottle found (and pictured on the first page of this chapter) is above the letters "KEEP" on the menu board. Photo courtesy of Heritage Services, Stanford University.

The Castoria bottle from Unit 8, Level 6 was not the only Castoria bottle found in the dam-keeper trash pit. Two more Castoria bottles were later removed from other levels. One was discovered in Level 4 of Unit 8A (the top of the trash pit for that unit) after the excavation unit was expanded to encompass the entire footprint of the trash pit. This bottle also corresponded to the Batchelder occupation. Another Castoria bottle was found in Level 10 of the trash pit, corresponding to the Duerst occupation period. Unlike the other two, this bottle was melted and discolored, probably due to its proximity to the burn

layer crossing Levels 7 and 8, a consequence of the burning of the trash pit that took place at the change in occupants (see Figure 29).



Figure 29. Additional Dr. Pitcher's Castoria bottles. Left, the bottle recovered from Unit 8A, Level 4, associated with Batchelder occupation. Right, the bottle from DKF8, Level 10 of the trash pit, associated with the Duerst family occupation. The right-hand bottle was deformed by its proximity to the burn layer in Levels 7 and 8. Photos courtesy of Heritage Services, Stanford University.

Table 8. Characteristics of the three Castoria bottles recovered from the dam-keeper house trash pit. None of the basemarks correspond to the incomplete list of Castoria bottle manufacturers documented in the archaeological literature concerning Castoria and bottle manufacturers to-date (Lockhart et al. 2014).

Bottle	Bore	Finish	Neck	Shoulder	Body	Base
Castoria 1 (U8, L6) aqua glass	1.2 cm diam.	double-ring	5 cm long, tapered	rectangular profile, slightly rounded	rectangular, 10x5x2.5 cm, embossed	mark: 16
Castoria 2 (U8A, L4) aqua glass	1.2 cm diam.	double-ring	5 cm long, tapered	rectangular profile, slightly rounded	rectangular, 10x5x2.5 cm, embossed	mark: D
Castoria 3 (U8F8, L10) aqua glass, discolored	1.2 cm diam.	double-ring	5 cm long, tapered	rectangular profile, slightly rounded	rectangular, 10x5x2.5 cm, embossed	mark: 8

Archaeologists Bill Lockhart, Beau Schreiver, Carol Serr, and Bill Lindsey have noted that there is neither an authoritative history of the Castoria product nor a definitive chronology of changes in Castoria bottle morphology (Lockhart et al. 2014, 1).

Archaeologists' knowledge of Castoria basemarks and their corresponding manufacturers is incomplete and does not include the basemarks of the trash pit Castoria bottles (see Table 8). The morphology of all three Castoria bottles, however, allows us to identify them as rough contemporaries, manufactured around the turn of the twentieth century (Lockhart et al. 2014). The Batchelders disposed of two nearly identical Castoria bottles toward the end of their time on the bluff, while the Duersts disposed of one Castoria bottle sometime in the middle of their tenure. This bottle may correspond to a Castoria purchase made by the Duersts in January 1895 at the Woodside Store (Tripp 1907). There

are no known records of the purchase of either Batchelder Castoria bottle, since the family shopped in Redwood City rather than at the Woodside Store (Regnery 1991, 118).

Patent Medicine Bottles

In addition to the Castoria bottles, nine other identifiable medicinal containers were recovered from the trash pit, all of which corresponded to patent medicines sold as cure-alls for major body systems, including the stomach, head, joints, intestines, and skin wounds. Nineteenth-century patent medicine entrepreneurs often lacked medical training. The composition of most patent medicines was a closely held secret, and they were sold directly to the public, without a physician's prescription (Young 1972; Starr 1982, 127). Patent medicines were distinguished from "ethical" medicines, prescribed by a doctor (Street 1917, 1; Brighton 2008, 133). Four containers recovered from the trash pit may have contained ethical medicines; I will discuss these items in turn. Part of the reason that patent medicines are so identifiable today is that in contrast to ethical medicines, patent medicine companies often patented their bottles (to protect brand recognition), but not the bottles' contents, so as to preserve the secrecy of their formulations (Agnew 2010, 183). When the Duersts purchased their patent medicines at the Woodside Store, part of what they were looking for was the bottle shapes and colors familiar to them.

Multi-purpose cure-all elixirs abounded in America in the years before the Pure Food and Drug Act of 1906, which enacted a series of consumer protections, including a requirement for labeling the active contents of foods and medicines, and prohibitions against the adulteration of the same (Starr 1982, 131). During the Duerst and Batchelder

families' time at Searsville, no such protections were in place, and they therefore probably looked to other indicators—such as the reputation of particular patent medicines among friends and neighbors—when choosing which medicines to bring into the home. Some patent medicines claimed to remedy a defined set of ailments (such as the assertion that Castoria could cure infants' digestive ills); others claimed broad medical success against a wide variety of afflictions. Many patent medicine sellers adopted the language of medical authority in their advertisements; the Duersts and Batchelders would also have taken note of patent medicine companies' prominent use of endorsements by alleged doctors (*Sacramento Daily Record-Union* 1886; *San Francisco Call* 1906c). Some even claimed results superior to those of a physician (*Sacramento Daily Record-Union* 1884). Nearly all offered a plethora of testimonials from supposedly happy customers (*San Francisco Call* 1894b; *Los Angeles Herald* 1896; *San Francisco Call* 1896e; *San Francisco Call* 1899; *San Francisco Call* 1906c). Newspapers were more than happy to feature patent medicine advertisements: on average, between one-quarter and one-third of newspaper profits in this era came from ads for proprietary nostrums (S. J. Williams, Gabe, and Davis 2009, 13).

Were the Duersts and Batchelders among the happy customers? As I will shortly discuss in greater detail, the Duersts in particular certainly used patent medicines in numbers comparable to their working class contemporaries in Oakland and San Francisco, while the Batchelders used substantially fewer patent medicines than their Duerst predecessors. But we can also speculate, based on what we know of their

historical context, that patent medicines probably gave the Duersts—and to an extent the Batchelders—a sense of agency in their own medical care. Patent medicines enlisted consumers like the dam-keepers in their own physical diagnoses by medicalizing common everyday physical sensations like exhaustion, sadness, or worry (S. J. Williams, Gabe, and Davis 2009, 13). Frieda and Melchior Duerst were encouraged by the producers of the patent medicines that they purchased to think of their common, everyday aches, pains, and mental experiences as medical problems (S. J. Williams, Gabe, and Davis 2009, 13).

Most patent medicines were harmless at best, and quite dangerous or even life-threatening at worst (Adams 1905, 5). Some were little more than sugar water with an herb or spice flavoring (Street 1917, 268). Others—even mainstream cure-alls—contained psychoactive drugs like cocaine, opium, or morphine, or poisons like mercury, lead, arsenic, and strychnine (Street 1917, 26, 38, 41, 62, 66, 104, 211). Highly profitable patent medicines inevitably inspired knock-offs. Castoria, for example, was frequently imitated, and each new imitator brought a new lawsuit from the makers of the original Castoria (Street 1917, 52; see also Lockhart et al. 2014, 4–10, 26–34).

Mark Twain and Charles Warner satirized the recognizable character of the patent medicine crank in their novel *The Gilded Age*, where the patent medicine inventor Colonel Sellers (the name itself a parody of both the capitalist greed of purveyors, and their love of false titles like “Colonel” as a shortcut to credibility) bragged about his cure for sore eyes: it was, Sellers said, “a kind of decoction nine-tenths water and the other

tenth drugs that don't cost more than a dollar a barrel; I'm still experimenting; there's one ingredient wanted yet to perfect the thing, and somehow I can't just manage to hit upon the thing that's necessary, and I don't dare talk with a chemist, of course" (Twain and Warner 1873, 87–89). This passage parodied the fact that most contemporary patent medicines were not based on contemporary science or medical research (Adams 1905; Street 1917). The absurdity of patent medicine claims to a cure was parodied by the name of Colonel Seller's watery concoction: "Sellers' Infallible Imperial Oriental Optic Liniment and Salvation for Sore Eyes—the Medical Wonder of the Age!" (Twain and Warner 1873, 87). The satire was not far off: Bay Area advertisements for cure-alls promised buyers like the Duersts and Batchelders a superlative and comprehensive healing experience: "Cancer, Catarrh, & Rheumatism Cured! with Balmy, Magnetic, Soothing Oils"; "palpitation, irregular pulse, fainting and smothering spells, pain in shoulders, side, and arms for over forty years... completely cured... almost a miracle"; "Wm. Radam's Microbe Killer cures all diseases" (*San Francisco Call* 1893d; *San Francisco Call* 1893a; *San Francisco Call* 1895f).

Seven of the 11 identifiable patent medicine bottles excavated from the families' trash pit corresponded to the Duerst family levels, including bottles for Castoria, Hall's Balsam for the Lungs, Bromo-Seltzer, Dr. Harter's Wild Cherry Bitters, Vaseline, and an unidentified compound from Keasbey and Mattison, which I will discuss in the section following. The other four patent medicine bottles, including two of the above-mentioned Castoria bottles, were recovered from layers associated with the Batchelder occupation,

which I will discuss in turn. No medicine-related artifacts were recovered from units outside the trash pit, nor is there any further historical record of either family's medical practices beyond surviving records for Duerst patent medicine purchases at the Woodside Store.

Duerst Occupation Medicinal Artifacts

A single aqua glass bottle for Hall's Balsam for the Lungs was recovered from Level 7 of the trash pit, a depth corresponding to the Duerst occupation. The Woodside Store ledgers corroborate a Duerst purchase of this item on October 13, 1894; the store records show no other purchases of Hall's Balsam by the Duersts (Tripp 1907). The Hall's bottle is nearly 20 centimeters tall, with cloudy aqua glass, and embossed capital letters on the bottle front, reading "HALL'S BALSAM / FOR THE LUNGS" (see Figure 30). The finish—the area immediate around the mouth of the bottle—is taller than it is wide and tapers somewhat toward the mouth, a shape known as an "oil finish" or "ring finish" (Lindsey 2016b). Embossed letters on the narrower faces identify the producer of Hall's Balsam ("JOHN HENRY & Co") and the location of manufacture ("NEW YORK"). As its name suggests, Hall's Balsam for the Lungs was marketed to treat respiratory complaints, including colds, bronchitis, asthma, and coughs (*San Francisco Call* 1890a). Advertisements claimed that it was also capable of curing consumption (today known as tuberculosis) and "all diseases of the Breathing Organs" (*San Francisco Call* 1890a). The generality of complaints that patent medicines like Hall's Balsam claimed to treat makes it impossible to say for certain why the Duerst family purchased it. One possibility, which

I will discuss in detail shortly, was that one or more members of the Duerst household suffered from tuberculosis, a disease of the lungs that often caused a prolonged and labored cough. As a dedicated pipe smoker (see Chapter 4), Melchior Duerst may have suffered from a smoker's cough, an especially common effect of pipe smoking (Proctor 2011, 32–33). He could even have suffered from the compound effects of smoking and tuberculosis: the former made contraction of the latter far more likely (Tomes 1999, 127–28). Advertisements for Hall's, as for other patent medicines, also positioned the nostrum as a handy treatment for common and less serious ailments: a common cold, for example.

Two bottles for Bromo-Seltzer—a “guaranteed cure for all headaches,” and a common treatment for insomnia—were recovered from Level 10 of the trash pit, associated with the Duerst occupation (*San Francisco Call* 1892i). The bottles differ in dimensions, but they share the same distinctive overall shape and cobalt blue coloring, as well as the embossed letters “BROMO-SELTZER / EMERSON / DRUG CO. / BALTIMORE, MD” (see Figure 30). Morphologically, both have round bases and “bead” finishes, meaning that the mouth is surrounded by a single, thin, rounded ring of glass (Lindsey 2016b). The smaller bottle is seven centimeters tall and nearly three-and-a-half centimeters in diameter; the larger is just over ten centimeters tall and just over four centimeters in diameter. The smaller bottle would have held one ounce of Bromo-Seltzer—the most common quantity for sale—while the larger would have held four ounces (Lockhart et al. 2015, 9). No known store records list the Duerst family's purchase of these bottles. Bromo-seltzer was one of the most common patent medicines in turn-of-the-twentieth-

century American homes. The chief ingredients were acetaminophen (the active component in modern Tylenol) and bromide, a sedative and anti-convulsant that could cause bromide toxicity: slurred speech, lethargy, cardiac depression, and eruptions on the skin (Dempsey 2011, 151). The relatively small number of Bromo-Seltzer bottles in the trash pit suggests that the Duersts probably did not over-indulge, and thus were unlikely to have experienced bromide toxicity. What is more likely is that members of the family who ingested Bromo-Seltzer found that it did indeed take the edge off their headaches—and also induced a general feeling of sedate low-energy, in cases of insomnia.



Figure 30. Hall's Balsam for the Lungs bottle, left, from Unit 8 Feature 8, Level 7, and Bromo-Seltzer bottles—one ounce, center, and four ounce, right—from Unit 8 Feature 8, Level 10 of the Searsville dam-keeper trash pit, all corresponding to the Duerst family occupation period. Photos courtesy of Heritage Services, Stanford University.

Level 8 of the trash pit produced a light blue bottle 15.5 centimeters tall and 6.25 centimeters in diameter, in pieces, with a “bead” finish around the mouth of the bottle

(see Figure 31) (Lindsey 2016b). The only identifying marks were the embossed words “KEASBEY & MATTISON / PHILADELPHIA” on the shoulder. Around 1875, Keasbey and Mattison began selling quinine compounds to fight fevers (Griffenhagen and Bogard 1999, 86; Gibbons and Gibbons, Jr. 1882, viii). By the close of the century, they had expanded to offer a smorgasbord of various effervescent mineral salts to treat headaches, rheumatism, and nervous disorders (Gibbons and Gibbons, Jr. 1882, ix; Proprietary Affairs - News and Notes of the Great Proprietary Medicine Interests 1899, 206). With Keasbey and Mattison’s ever-expanding list of compounds offered, and without either published archaeological studies of their medicines and bottles, or store records to detail the purchase, it is impossible to know for certain what this bottle contained. If the bottle contained one of their foundational quinine compounds, however, it would be in keeping with the Duerst family’s recorded purchase of anti-mosquito powder and a powder disperser at the Woodside Store, which indicate that mosquitos were an annoyance and possibly even a health concern for the family, especially given their proximity to the swampy edges of Searsville Reservoir (Tripp 1907).

The Duerst levels of the trash pit also yielded a dark amber bottle for Dr. Harter’s Wild Cherry Bitters, found in Unit 8, Feature 8, Level 10. No store record exists showing the Duersts’ purchase of Dr. Harter’s Bitters. The bottle is ten centimeters tall and six centimeters wide, with a rectangular base and a finish around the mouth of the bottle in the aforementioned “oil” shape. Embossed in a panel on the square front of the bottle are the words “D^R HARTER’S / WILD CHERRY / BITTERS” (see Figure 31). Bitters were

sold to address digestive complaints (*San Francisco Call* 1898c). Constipation was common among rural Americans, whose diets, although they included fruits and vegetables, nonetheless tended to be higher in proteins, fats, and sweets, and lower in high-fiber leafy green vegetables (Danbom 2006, 97–98; Levenstein 2003, 6–7, 24–26). Surviving archaeological and historical evidence for the Duerst family’s eating habits is consistent with a high protein, high fat diet with consumption of sweet baked goods (see Chapter 3), although of course evidence of vegetable consumption in particular is less likely to leave archaeological traces than meats, which leave bones.

Finally, the Duerst occupation levels of the trash pit produced two containers for Vaseline, a petroleum jelly advertised at the time as useful in dressing cuts and other wounds, and for treating an astonishing array of other afflictions, including burns, sprains, coughs, colds, piles (hemorrhoids), catarrh (swelling of the nasal mucus membranes), diphtheria, throat problems, and general chest and respiratory complaints (*Marin County Tocsin* 1891). Each container is seven-and-a-half centimeters tall and five centimeters in diameter. The clear glass bottles have wide bores (as the viscosity of petroleum jelly meant it had to be scooped, rather than poured, from the container). The rounded ring finishes and embossed lettering—“CHESEBROUGH MFG Co” in an arch and “VASELINE” horizontally beneath—are consistent with Vaseline bottles produced between 1877 and the turn of the twentieth century (see Figure 31) (Lockhart 2015, 9). The first container was found in Level 8, the second in Level 10, both corresponding to

the Duerst occupation. Woodside Store records list no purchases of Vaseline by the Duersts.

Vaseline is an excellent example of the essential ambiguity of actual medical practices during this period, as well as the multivalent uses of any one artifact type. Its advertised and publically acknowledged uses expanded over time to include treating pimples, blotches, and wrinkles on the skin, styling of the hair and eyebrows, polishing furniture, preventing metal farm implements from rusting, preventing splattered paint from sticking, and keeping leather baseball mitts supple, among others (Learn More about Vaseline®, the Original Skin Expert for over 140 Years. 2015; *San Francisco Call* 1904c; *Pacific Rural Press* 1905; *Amador Ledger* 1909; *Los Angeles Herald* 1907a). While its multivalent nature meant that the Duersts likely used Vaseline for a variety of purposes, ascertaining exactly what those were without further archaeological and historical evidence is not possible. Nor can we always be confident that we are aware of all possible uses. The Western American folk medical tradition in this period—whose wisdom was passed along mouth-to-mouth and seldom written down—identified uses for substances not acknowledged, or only rarely acknowledged, by advertisers: western women advised one another that Vaseline, for example, was an excellent contraceptive, because “the greased egg doesn’t hatch” (M. E. Jones 1998, 202).

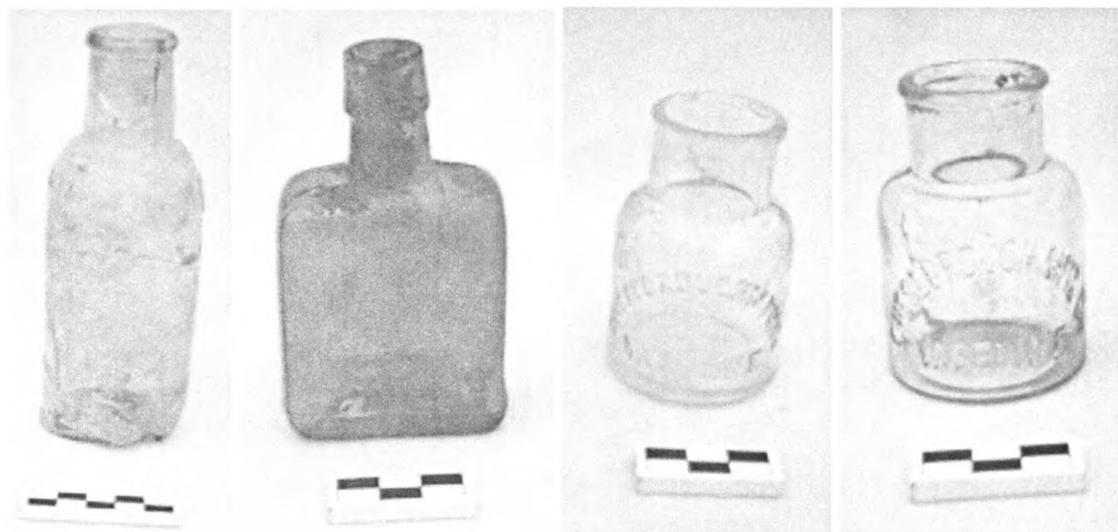


Figure 31. Keasbey and Mattison bottle from DKF8, Level 8, far left, Dr. Harter's bottle from DKF8, Level 10, center left, and Vaseline bottles from DKF8, Level 10, center right, and DKF8, Level 8, right, of the Searsville dam-keeper trash pit, corresponding to the Duerst family occupation period. Photos courtesy of Heritage Services, Stanford University.

Other Known Medicinal Purchases

The records from the Woodside Store provide evidence of medicines purchased by the Duersts (but not by the Batchelders), of which no positively identifiable trace was found in the trash pit, or indeed in any of the excavation units. There are several possible explanations for the apparent absence of associated containers in the trash pit. The bottles may be among those recovered from the site that do not bear any sort of identifying marks or features, or pieces bearing the identifying marks may not have been recovered. The bottles may have been disposed of elsewhere, or even re-used by the household.

Among the medical-related items purchased by the Duersts, but not represented by positively identified artifacts, is Cherry Pectoral, a medicine for respiratory ailments,

purchased at the Woodside Store by a Duerst family member on December 6, 1894, for one dollar (*San Francisco Call* 1891b; *San Francisco Call* 1892b; Tripp 1907). On December 22, 1894, the Duerst family purchased the laxative castor oil, as well as carbolic salve, an ointment for treating cuts, sores, burns, and pimples (Tripp 1907; *Sacramento Daily Record-Union* 1882a). The Woodside Store ledgers also document two instances in which the Duersts purchased “Syrup Figs”: a 50 cent jar of syrup figs purchased on September 20, 1894, and a dollar jar of syrup figs purchased on August 7, 1896 (Tripp 1907). (The bottles came at two price points: 50 cents and one dollar (*Daily Alta California* 1884)). Syrup of Figs, produced in San Francisco by the appropriately named California Fig Syrup Company, was a “famous liquid fruit remedy” to treat indigestion and constipation, headaches and fevers, and “kindred ills” (*Daily Alta California* 1884). Alongside their use of Dr. Harter’s Cherry Bitters (previously discussed), the laxative castor oil and syrup of figs suggest that constipation was part of the Duerst family’s day-to-day experience of the body—an experience they shared in common with many other rural Americans of the time.

In sum, the archaeological record for the Duerst occupation—supplemented by surviving historical records from the Woodside Store—indicates that members of the family were afflicted by a wide variety of physical ailments, including headaches, constipation, and unspecified respiratory complaints. As I have demonstrated, however, the multivalent uses of patent medicines obscure which ailments they sought relief for—or even, in the case of Vaseline, whether applications were those advertised on the label.

Batchelder Occupation Medicinal Artifacts

Compared to the Duerst family trash deposits, dam-keeper house trash pit levels associated with the Batchelder occupation produced fewer medicine-related artifacts. Other than two Castoria bottles in Unit 8A, Level 4 and Unit 8, Level 6, and a one-ounce Bromo-Seltzer bottle in Level 6, the only other medicine-related artifact unearthed from the Batchelder layers was a dark amber bottle associated with Paine's Celery Compound (Level 6). The 25-centimeter tall, dark amber glass bottle has a shape around the bottle mouth known as a "brandy" or "wine" finish, which looks like an oil finish with a narrow bead or ring of glass beneath it (Lindsey 2016b). Within each of the four faces is a recessed rectangular panel, and on one of these the embossed word "PAINE'S." The opposite face bore the words "CELERY COMPOUND" (see Figure 33). No known store record documents the Batchelders' purchase. Paine's Celery Compound was touted as a virtual cure-all for major body systems; contemporary Bay Area advertisements boasted that it cured ailments of the brain, heart, liver, kidneys, digestive system, and blood (*San Francisco Call* 1894b; *San Francisco Call* 1896e; *San Francisco Call* 1899). Paine's Celery Compound was an excellent example of the "medicalization" of daily life: it was sold to address general and indistinct feelings of tiredness, dullness, or otherwise feeling just a bit "off": Paine's would treat nervousness and generally renovate the bodily system (*San Francisco Call* 1894a; *Los Angeles Herald* 1902a).

Nervousness was a uniquely nineteenth- and early twentieth-century affliction whose meaning is no longer captured by our understanding of the word (we generally think of

nervousness as a sense of trepidation in the face of a novel or frightening circumstance). For the Batchelders and their contemporaries, the nervousness that Paine's promised to treat was a sense of exhaustion, anxiety, and/or impotence brought on by a specific set of social and cultural circumstances: namely the rapid changes wrought by growing industrialization and commercialization, and a conscious sense that the pace of daily life was growing ever faster and more overwhelming (Gay 1984, 333). It is no surprise that many people believed Paine's did exactly what it promised; the compound contained 20 percent alcohol, an ingredient that was very effective in giving many men and women a new feeling of social ease and prowess after self-dosing (Adams 1905, 12–20; Street 1917, 183). Perhaps more surprising to modern sensibilities is the fact that Paine's was also advertised as a cure for children who seemed nervous or insufficiently vivified. "While the hurry and bustle of modern life is bringing a constantly increasing strain upon grown men and women," declared a contemporary advertisement for Paine's in the *San Francisco Call*, "there certainly comes to light the startling fact of a growing tendency toward nervousness among their children" (*San Francisco Call* 1895c). How could the Batchelders and other Bay Area residents diagnose their children? One of the surest signs of nervousness, the *San Francisco Call* advertisement advised them, was picky eating (*San Francisco Call* 1895c). The audience for Paine's Celery Compound, in short, was everyone.

We have no historical record of the way in which the Batchelder family in particular understood and used Paine's Celery Compound. But its presence in the family

pharmacopoeia suggests that its premise—that something about their experience of modern life, even in the rural context, felt draining or even overwhelming—resonated with Edgar and Emeline Batchelder. They might have noticed a concerning lack of vitality in their children, Albert, Lucy, and Edgar Jr., who may have displayed telltale symptoms identified by advertisements in Bay Area newspapers: lack of appetite, for example, a pale face, or “declining” spirits—criteria so broad as to encompass a wide variety of childhood behaviors and appearances (*San Francisco Call* 1895c). In acquiring Paine’s Celery Compound, and monitoring themselves and perhaps their children for signs of the modern nervous affliction, the Batchelders were also participating in a broader culture of self-diagnosis and treatment. Their confidence in diagnosis was probably reinforced by the tangible feeling that Paine’s Celery Compound (and the alcohol it contained) caused in the body: a sense of relaxation, of contentment, of calm, and perhaps of confidence in the face of a changing world.



Figure 32. Contemporary advertisement for Paine's Celery Compound in the *San Francisco Call* (*San Francisco Call* 1895c). Image in public domain, accessed via California Digital Newspaper Collection, Center for Bibliographic Studies and Research, University of California, Riverside, <<http://cdnc.ucr.edu>>, accessed October 19, 2016.



Figure 33. Paine's Celery Compound bottle from the Searsville dam-keeper trash pit, recovered from Level 6, a portion of the trash pit corresponding to the Batchelder occupation. Photo courtesy of Heritage Services, Stanford University.

Ethical Medicines

Four bottles recovered from the trash pit—three corresponding to the Duerst occupation, one to the Batchelder period—probably contained ethical medicines. Only one of these bottles featured distinctive embossing, however. It read: “U.S. / MARINE / HOSPITAL / SERVICE” (see Figure 34). The U.S. Marine Hospital Service (USMHS) provided medical care to American merchant marine servicemen, and USMHS hospitals were constructed in major port cities, including San Francisco. Melchior Duerst was not a member of the merchant marine, but the USMHS hospitals' national mission around this time was shifting to include care of immigrants, other vulnerable groups (such as Native Americans), and individuals suffering from chronic or transmissible disease (N. E. Tutorow 1996, 162). By 1902 the government acknowledged this shift by changing the

institution's title to the Public Health and Marine-Hospital Service; in 1912 it became, simply, the Public Health Service, which in turn gave rise to today's Public Health Service, National Institutes of Health, and Centers for Disease Control and Prevention, all overseen by the Surgeon General, the historic title of the U.S. Marine Hospital administrator (Smillie 1943, 926; N. E. Tutorow 1996, 166). So the bottle's presence in the trash pit presents something of a mystery and raises several interesting questions. Did the Duerst family acquire the bottle and its former contents directly from the Presidio USMHS? If so, what chronic or transmissible disease (or other affliction) in the family was serious enough to warrant a trip to San Francisco for special care, or at the very least, for a special prescription? Consumption, which I speculate could have inspired the Duerst's purchase of Hall's Balsam for the Lungs, was certainly a disease serious enough to fall within the Marine Hospital's purview. If this were the case, however, we might expect to have found more clearly consumption-linked patent and/or ethical medicine bottles in the trash pit (then again, the family might have disposed of these bottles outside of the trash pit). Another possibility is that the bottle traveled with Melchior or Frieda Duerst from their original point of immigration into the United States, because the Public Health Service oversaw the health assessment of newly arrived immigrants (Smillie 1943, 927–28). Unfortunately, there are no known surviving historical records to help us narrow down what medication filled the Duersts' Marine Hospital bottle, nor the circumstances under which they acquired it. The bottle body is just over eight centimeters tall (the neck was broken off and was not recovered); the square base is three-and-a-half

centimeters on a side. The volume of the bottle is embossed at the bottom of one face: “75 C.C.,” standing for 75 cubic centimeters of liquid.

Level 10 of the trash pit produced an aqua bottle characteristic of a type of ethical medicine container known as the “French square” (Lindsey 2016c). This square-based bottle is more than 12 centimeters tall and 4 centimeters on each side. Although the corners of the square cross-section are not noticeably beveled, this bottle is consistent with other characteristics of ethical medicine “French square” bottles, including a “tooled” finish and specific proportions (Lindsey 2016c). A “tooled” finish means that the finish was created in the factory by reheating the mouth of the bottle using a specialized tool to shape and smooth it (Lindsey 2016b). Second, the ratio of body height to neck height (9.4 centimeters to 2.9 centimeters) is between three and four, typical of ethical medicine bottles (Lindsey 2016c). There is no liquid or residue remaining in the bottle, nor any embossing or other indication as to what it once held.

Finally, two identical aqua bottles characteristic of ethical medicine containers were recovered from dam-keeper trash pit Levels 10 (corresponding to the Duerst occupation) and 5 (corresponding to the Batchelder period). The bottles are both 17.5 centimeters tall with a rectangular base measuring nearly 6 centimeters by 3 centimeters. The bottles’ aqua color and “tooled” finishes are consistent with ethical medicine bottles from the turn of the twentieth century (Lindsey 2016c). There is no embossing to indicate where these bottles may have been purchased or what they contained. Their presence in the trash pit

suggests, however, that both the Duersts and the Batchelders consulted with a physician who prescribed a medication for their complaint.



Figure 34. U.S. Marine Hospital Service bottle, left, and two potential ethical medicine bottles, center left and center right, from Unit 8 Feature 8, Level 10, corresponding to the Duerst family occupation period. Possible ethical medicine bottle, right, from Unit 8 Feature 8, Level 5, corresponding to the Batchelder family occupation period. Photos courtesy of Heritage Services, Stanford University.

Bay Area Medical Practices

Although the archaeological and historical record of the dam-keeper families' medical practices is limited, our understanding of them can be enriched by placing what we know within the broader regional and national context. Comparing the dam-keeper findings to the archaeological results of the Cypress Project in Oakland and the West Approach Project in San Francisco—which examined contemporary home sites—we see that the families' choice of medicine reflected more general trends in self-treatment among

working-class Bay Area residents, as well as possible differences in medical practices among those of immigrant status, like the Duersts.

The Cypress Dig in Oakland recovered 500 patent medicine bottles from 87 features corresponding to 80 home sites (Gutman 2004, 190–91). The Cypress Dig publication of results does not include explicit analysis of patent medicine use, but it does provide some relevant discussion and data, which I will discuss shortly. The West Approach Project, which looked at late-nineteenth-century San Francisco households from across the socio-economic spectrum, found that patent medicine use was strongly correlated with lower socio-economic class (M. Praetzellis 2009, 129–35). In fact, out of all the artifact types represented in the archaeological data, patent medicine was the artifact type most strongly related to household status (M. Praetzellis, Praetzellis, and Owen 2009, 410, 412, 414). The middle and upper classes, by contrast, were increasingly skeptical of patent medicine; as the professionalization of medicine accelerated around the turn of the twentieth century, the wealthier and better educated turned away from patent medicine, which they tended to view as hoaxes (Larsen 1992; Larsen 1994).

For now, the projects' shared archaeological team has yet to publish a more detailed analysis of the types of patent medicine found in Oakland and San Francisco. It would be interesting to know, for example, of those patent medicine bottles recovered, what percent were recovered from poor, working-class, middle-class, and wealthy residences, respectively. The numbers of deposits and the average number of artifacts recovered differ between the two projects—the Cypress Project excavated more features, while the

West Approach Project recovered more artifacts per feature—complicating comparisons (Meyer 2009, 242). It would also be interesting to know whether there were particular types of patent medicine found exclusively at particular categories of home site and not at others.

More than a Bottle: Class, Immigration, Race, and Gender

Medicine bottles represented more than the substance they once held. They were also situated in social relationships and discourses related to socio-economic class, gender, and racial and ethnic relationships. Although we have no known historical record of the Duerst or Batchelder families' beliefs about these subjects, we do know that for most of their contemporaries, disease was not a neutral concept: it was viewed as a product of potent social forces. Gender influenced the way in which people interpreted disease: turn-of-the-century doctors saw some afflictions as unique products of sexual organs and sex-based differences in personality and constitution. Women were generally considered more prone to weakness of mind and body, and many medical professionals believed that their sexual organs gave rise to unique disease pathologies, particularly hysteria. At the same time, the ideal woman ran her household efficiently and energetically, and she was expected to serve as home doctor and nurse. These expectations, I will argue, probably shaped the daily lives of both Frieda Duerst and Emeline Batchelder, and the way in which healthcare choices were made and implemented within the family home. Race, class, and immigration status, meanwhile, also profoundly shaped the interpretation and treatment of disease. Outsider status—including identity as a racial or ethnic minority,

immigration status, and lower-class economic standing—was often interpreted by wealthier contemporaries as an indicator of possible moral and physical disorder and even contagion.

One useful point of comparison for any discussion of class and health at Bay Area sites like the Searsville dam-keeper house and the Cypress and West Approach Projects is a study of poor, mid-to-late nineteenth-century Irish Americans in New York City conducted by the archaeologist Stephen Brighton. Brighton found a correlation between patent medicine use, class, and cultural assimilation: the more assimilated and/or wealthy the individual, the less likely he or she was to turn to self-medicating with patent medicine rather than consulting a physician, a phenomena that Brighton referred to as the “material manifestation of alienation” (Brighton 2008, 142; Brighton 2004). Lower socio-economic classes—a designation that often overlapped significantly with racial, ethnic, and immigrant status—were more likely to try to treat their own maladies with patent medicine, which were frequently narcotic (Brighton 2008; Fike 1987, 3–4). Use of patent medicines was both a financial choice, and a moral one—the latter in the sense that users of patent medicines might choose to self-medicate to avoid the judgment or criticism of physicians and moral reformers (Brighton 2008, 142). Other archaeological analyses of patent medicines at contemporary American sites found the same pattern: the greater the number of patent medicine bottles, the greater the distance between the disposers and recourse to medical professionals, including both private doctors and public dispensaries and hospitals (Ford 1994; Larsen 1994; Sullivan 1994; Cabak, Groover, and Wagers

1995; Kraut 1995a; Veit 2013). Of course, as Brighton points out, race, ethnicity, disease, and socio-economic status were entangled concepts in nineteenth-century America, so to talk about one is necessarily to speak to the others (Brighton 2008, 146).

Scientific advances of the late nineteenth century brought better understanding of the microscopic bacteria and viruses that caused disease (Tomes 1990; Tomes 1999). Ironically, being able to ascribe the cause of disease to these vectors did not absolve the sufferers from responsibility. To the contrary, disease often took on an increasingly moral valence: nineteenth-century medical reformers began to argue that diseases of the poor—like their poverty—were a consequence of impoverished men and women's own bad choices (Tomes 1990; Duffy 1992, 96, 99; Howson 1993, 142–43; Rosenberg 2009, 133). As many archaeologists and historians have pointed out, one of the reasons that immigrants and lower-class Americans increasingly looked to self-treatment with patent medicine was to avoid the moral condemnation and public judgment that was increasingly associated with their afflictions (Howson 1993, 142–43; Rosenberg 2009, 133; Veit 2013, 45). Consistent with Brighton's findings at nineteenth-century Irish immigrant sites in New York City, both the Cypress and West Approach Projects in Oakland and San Francisco, respectively, found that households of lower socio-economic status tended to use and discard more patent medicine bottles than higher status households (M. Praetzellis 2009, 132).

Race, health, and disease were also entangled concepts in the Bay Area during the Duerst and Batchelder families' residences at the dam-keeper site. Locals associated

some of the worst diseases with racial minorities. The Marine Health Service Hospital, the source of the Duerst family's bottle of unidentified medicine, was on the front lines of the emergence of the bubonic plague in western North America (N. E. Tutorow 1996). Doctors from the U.S. Marine Service Hospital in San Francisco expected that the plague would appear in their city, after outbreaks in Hong Kong (1894), Bombay (1896), and Honolulu (1899) (Echenberg 2007, 215). On March 6, 1900 (during the Batchelders' time at Searsville), a Chinese man was found dead in a basement in San Francisco's Chinatown, his body exhibiting the plague's characteristic buboes (Echenberg 2007, 214). Members of the city's Board of Health convened in an extraordinary midnight session and ordered the Asian residents in the 12 city blocks of Chinatown quarantined (Echenberg 2007, 215–17). Whites who found themselves in Chinatown when the cordon went into effect the next morning, however, were allowed to depart (Echenberg 2007, 217). We have no historical record of the racial beliefs of the Duersts or the Batchelders, but we can turn to the most common attitudes evident in white Bay Areas contemporaries to speculate about the dam-keeper families' perspectives on race and disease.

Many Caucasian residents of the Bay Area, as well as national commentators, expressed no surprise that the plague had emerged in Chinatown: anti-Chinese attitudes were rampant in the state of California, and many Californians considered the Chinese unclean and more prone to disease (Hart 1987, 93–94; Burchell 1980, 136; Kazin, Edwards, and Rothman 2011, 281–82). Census takers often assumed that Chinese females who spoke little English (and therefore could not communicate their family

status) were prostitutes and therefore a public health concern; census employees repeatedly wrote some variation on “Wife?/Prostitute” in the “occupation” category (Peffer 1999, 98–99). In the 1870s, white San Franciscans had rioted against Chinese immigrants, in one case attempting to burn the docks of a steamship company known to transport Chinese newcomers, and in another notorious instance destroying significant parts of Chinatown and killing over 20 Chinese immigrants (Hart 1987, 94). Chinese and Japanese children were forced to attend segregated schools in San Francisco (Hart 1987, 245). On the federal level, discrimination was embedded in Exclusion Acts (1882, 1892, and 1902) that prohibited most “Oriental” immigration. This bias was given a scientific basis: many of the medical decision-makers held that rice-heavy Asian diets were lacking in protein, which made Asian populations more susceptible to the plague (Echenberg 2007, 215; Risse 2012, 28–29).

While we cannot know for sure what attitudes and beliefs the Duersts and Batchelders held toward local racial minorities when it came to health, this historical context allows us to speculate that they, like many Bay Area contemporaries, may have believed that Chinese and other racial minorities were a source of disease. Prior to the outbreak of plague, local Chinese residents were frequently blamed for other disease outbreaks, such as smallpox, leprosy, and syphilis (Kraut 1995b, 81–83). One San Francisco city health official blamed the severity of the 1876–77 smallpox outbreak on thousands of “unscrupulous, lying and treacherous Chinamen who have disregarded our sanitary laws, concealed and...[are] concealing their cases of small-pox [*sic*]” (Dr. J. L. Meares, quoted

in Kraut 1995b, 82). Chinese homes, health officials hypothesized, were cradles of disease on account of their lack of cleanliness and suspect corpse-handling rituals (Kraut 1995b, 82). The dam-keeper families may have kept their distance from Chinese locals, particularly during the bubonic plague years of the first decade of the twentieth century.

* * *

The archaeological and historical analyses I have presented thus far provide a framework in which to analyze the patent medicine use of the dam-keeper families. While the dam-keeper data set comprises only two family data points, and thus cannot alone establish a broader pattern of behavior, it is interesting to observe that the families' pattern of patent medicine use revealed by the archaeological data are consistent with the broader contemporary Bay Area and national patterns discussed above, which show that self-medication with patent medicines was more frequent among immigrant communities and those with lower incomes (two demographics with significant overlap). Most of the medicine-related artifacts found at the dam-keeper dig site were found in levels associated with the Duerst occupation (8 of 12 items, all patent medicine bottles). Acknowledging that the sample is extremely small and limited, we can nonetheless observe that this trend is consistent with the association found at other sites—both in the Bay Area and nationally—between immigrant status and self-medication practices, with immigrants more likely to use patent medicines to self-treat rather than visiting local doctors. Both Duerst parents, in contrast to the native-born Batchelders, were immigrants from Switzerland. While both heads of household held the same position at Searsville,

California-born Edgar Batchelder was paid 25 percent more money for doing the same job (San Francisco Board of Supervisors 1897; Spring Valley Water Company (San Francisco, Calif.) 1906). This difference is perhaps partially attributable to rising wages, although more so to his greater seniority within the company.

Native-born Americans like the Batchelders were more likely to avail themselves of medical professionals and less likely to use patent medicine (Bonasera and Raymer 2001; Brighton 2008). Indeed, relatively few patent medicine bottles were found in the trash pit in levels corresponding to the Batchelder occupation. Yet, the dearth of patent medicine bottles in the Batchelder layers was not apparently counterbalanced with a corresponding number of ethical medicine containers. Indeed, of the four possible candidates for ethical medicine containers, determined using archaeologist Bill Lindsey's criteria (Lindsey 2016c), three were found in layers of the trash pit associated with the Duerst family, including the most likely of the four, the U.S. Marine Hospital Service bottle (see Figure 34). The smaller number of both patent and ethical medicine bottles in the Batchelder layers may be the result of simply fewer overall medicinal purchases. Two other possibilities are important to recognize, however: such bottles, being highly personal, could have been disposed of in another location apart from the trash pit (such as a privy, which was not located), or the family may have used patent medicine items that left no trace in the trash pit (such as medicines packaged in cardboard or paper) or whose traces were not identified as medicinal bottles (because they were too highly fragmented, for example).

There are no known surviving historical records to indicate whether or not either family visited doctors or other medical professionals, such as dentists. The presence of ethical medicine bottles in both the Duerst and Batchelder layers of the dam-keeper trash pit, however, suggests that both families did at least occasionally visit professionals with the capacity to prescribe ethical medicines. The Palo Alto-Stanford University-Mayfield area at this time was home to at least a half-dozen doctors, dentists, and druggists, who regularly advertised in the *Daily Palo Alto* (as the *Stanford Daily* was formerly named) (*Daily Palo Alto* 1895; *Daily Palo Alto* 1897b; *Daily Palo Alto* 1901). Additionally, Robert Tripp, proprietor of the Woodside Store, studied dentistry in Massachusetts and performed dental procedures in a small room adjoining the store as the need arose (Woodside Store History 2015). Stanford University acquired Cooper Medical College to be the Stanford School of Medicine in 1908, although it was not until 1959 that the school moved from its facilities in San Francisco to the Stanford campus (Bartholomew, Brinegar, and Nilan 2001). The dam-keeper families may also have consulted popular home medicine books, such as *The Cottage Physician for Individual and Family Use*, which adopted an authoritative, scientific tone to describe diseases and injuries in scientific terms, while offering accessible home remedies such as changes to diet, breathing fresh air, or swimming in the ocean (Gutman 2004, 175; *The Cottage Physician for Individual and Family Use* 1898, 140). No historical record or archaeological remnant of such a book survives for either family, however.

Case Study: Tuberculosis

One of the most frightening diseases during the dam-keepers' lifetimes was tuberculosis (TB), which contemporaries commonly referred to as consumption, on account of the dramatic weight loss experienced by the afflicted. (Tuberculosis is a bacterial infection of *Mycobacterium tuberculosis*, usually spread via coughing or sneezing, which causes lesions and tissue damage primarily in the lungs (see Madkour 2003; especially Espinal and Raviglione 2003; and Akhtar and Al Mana 2003).) One of the patent medicine bottles excavated from levels associated with the Duerst family—Hall's Balsam for the Lungs—was advertised as an effective treatment for consumptive symptoms; Ayer's Cherry Pectoral, which was among the Duersts' Woodside Store purchases but not their trash deposit, also claimed to be able to cure "consumption in its early stages" (*San Francisco Call* 1890a; *San Francisco Call* 1891b; Tripp 1907). We have no surviving historical records to indicate whether or not any Duersts (or Batchelders) suffered from TB, but the presence of TB-associated medicines suggests that it was a possibility in the Duerst household. In the mid-nineteenth century, approximately 40 percent of deaths in the United States were due to TB; by the time the dam-keeper families arrived at Searsville, that number was down to twenty percent of deaths, but it was still the number one cause of death in the United States (Byerly 2013, 7; J. W. Leavitt and Numbers 1997, 5). In Oakland and San Francisco, too, it was the leading cause of mortality (Oakland, Calif., Board of Health 1897, 22; Craddock 2000, 30).

California was an appealing destination for men and women with consumption, because experts and common wisdom alike advised that an open, outdoor lifestyle—so characteristic of the American West—might improve or even cure the condition (Rothman 1994). Here, again, we have no surviving historical or archaeological evidence to indicate what motivated either Melchior or Frieda Duerst to immigrate to California. We do know that the influx of consumptives into the state around the turn of the twentieth century caused alarm and heated debate, with some politicians and medical experts recommending exclusion of migrant consumptives, regulation of those already in the state, deportation of the indigent afflicted, and criminalization of “carelessness with tuberculous sputa,” which is to say spit (Bridge 1903).

By the dam-keepers’ era, the fact that tuberculosis was transmissible was widely known, and its cultural meaning and moral associations were shifting. While consumption in the early Victorian era was often presented in literature and other cultural discourse as an ennobling affliction that heightened spiritual and aesthetic sensitivities, as the twentieth century dawned it was beginning to become associated with immigrants and the poor, as well as with an immoral lifestyle, due to the discovery that sexually transmitted diseases and drinking alcohol seemed to make individuals more susceptible to contracting the disease (Osler 1910, 371; Diedrich 2007, 8; Byerly 2013, 8). Smoking also weakened the lung’s ability to resist the bacterium, although the practice of smoking did not have the same negative moral valence as other TB risk factors, such as alcohol and sexually transmitted diseases (Tomes 1999, 127–28). Both dam-keepers were

smokers (see Chapter 4). While this made both more susceptible to the TB bacillus, it would also have produced some symptoms in common with the disease, particularly a cough (Idrees, Wali, and Al-Amoudi 2003, 387; Zumla and Grange 2003, 456).

The desperation with which the dam-keepers' Bay Area contemporaries pursued a cure is amply illustrated by the archaeological analysis of a home site of a consumptive Oakland resident excavated by the Cypress Project, which produced 20 patent medicine bottles, most of them associated with tuberculosis. While the head of the household tried many all-purpose cure-alls, including bitters and sarsaparilla, he favored a product called Shiloh's Consumption Cure. Not only did Shiloh's fail to cure the disease, it may even have hastened his demise: notable among its ingredients was the poison hydrocyanic acid (M. Praetzelis 2004, 64–65). If TB did haunt the Duersts' male head of household, the potential progress of the disease was cut off by Melchior Duerst's early and unexpected death after falling from the face of the dam.

Rural Disease and Medicine

The rural location of the dam-keeper's house affected the health of its inhabitants. Although the home was situated near a large water source, the Searsville reservoir was notoriously dirty, full of noxious sediment from upstream (Scott 1927). The dam-keeper families depended on a small, reliable spring on the opposite side of the dam for drinking water because the water in Searsville Lake was not potable. Although inconvenient, the spring was beneficial in two regards: it was not shared with other people, and it was physically protected from potential sources of disease, such as outhouses or the effluvia

of urban development and industry. Water-borne diseases such as dysentery, cholera, and typhoid fever sickened hundreds of San Franciscans each year (P. K. Brown 1899, 274–76; California State Board of Health 1909, 19–20, 23–24; Craddock 2000, 97).

Searsville Reservoir's still water and marshy surroundings served as a breeding place for mosquitoes, vectors for diseases like malaria and yellow fever (P. K. Brown 1899). The Woodside Store records show that the Duersts purchased an insect gun and insect powder in November 1894, indicating that insects were a problem at the beginning of the winter wet season (Tripp 1907). The relatively low population density of the rural area around Searsville meant that the dam-keeper families were less susceptible to outbreaks of infectious disease. San Francisco, by contrast, suffered an outbreak of the bubonic plague in the years 1900-04, in which 113 individuals died (Echenberg 2007, 213–43). None of the patent medicine bottles recovered from the trash pit claimed to treat any of these diseases. A search of local newspapers in the California Digital Newspaper Collection and the *Daily Palo Alto* databases returns no record of death due to plague, malaria, or yellow fever in the Searsville area.

At the same time, their rural location meant that the dam-keeper families were further from trained medical personnel in the event that medical attention was required. Of the nine members of the Duerst and Batchelder families, two died while in residence. In addition to Melchior Duerst, who fell from the dam face and was not found until after he had been dead for many hours, Emeline Batchelder died from complications of childbirth in March 1903 (*San Francisco Call* 1897a; McReynolds and Trindle 2000). It is not clear

whether a physician attended her either during labor or afterward, as her condition deteriorated. Her death was not remarked upon in local newspapers, possibly due in part to the high rates of death related to childbirth at the turn of the twentieth century (MacGregor 1998, 37–38).

Some patent medicines, such as Vaseline, were particularly associated with rural America. An all-purpose first aid item, Vaseline was most commonly used to treat physical complaints associated with an active, outdoor lifestyle. Vaseline on a sunburned face, the company promised Bay Area consumers, would leave the sufferer “as fresh as a daisy” (*Sacramento Daily Record-Union* 1894a). For a “real cut, with profuse bleeding,” application of clean cotton with Vaseline could obviate the need for “adhesive plaster” (*Marin Journal* 1901b). This solution replaced specialty first aid equipment with “what is certainly to be found in every farmer’s family” (*Marin Journal* 1901b). Vaseline was not only recommended to cure ailments of the body, however. It also served innumerable functions around the California home, including preventing eggs from spoiling, removing and preventing rust on cut steel, breathing new life into old leather book bindings, and even tracing the paths of bullets (*Los Angeles Herald* 1901; *Amador Ledger* 1909; *Daily Alta California* 1888d; *Sacramento Daily Record-Union* 1890). The two Vaseline bottles recovered from the trash pit were both in the levels associated with the Duerst family.

* * *

Although analysis of the dam-keeper site alone cannot establish broader relations among socio-economic class, ethnic and immigrant status, and medicinal practices in

nineteenth-century California, it can suggest interesting avenues for future, broader comparative archaeological studies of rural versus urban Californians at the turn of the twentieth century. Were there any differences, for example, in disease status and/or medicinal practices between rural versus urban members of the Californian working class? Between 1870 and 1910, doctors in the United States tended to gravitate toward wealthy cities and away from poorer, rural areas (Starr 1982, 125). Thus, one might hypothesize that even wealthier rural inhabitants might use more patent medicines than their urban counterparts, although this effect would certainly be mediated by developments in transportation and the quality of roads.

One might also ask if there were differences in medical practices within the working class, predicated on immigration status, race, ethnicity, urban versus rural location, and/or income? The medical practices of ethnically Chinese migrants in the San Jose and San Francisco Chinatowns, for example, would provide an interesting locus of analysis. Were California disease patterns and medical practices, both rural and urban, representative of larger national trends? The data provided by the Cypress and West Approach Projects as well as the dam-keeper site suggest that differences in Bay Area medical practices between the wealthy and the poor and working class did follow the larger national trend in which lower incomes were associated with higher use of patent medicine and lower use of paid doctors and “ethical” prescription medicine. That this was also true of California families more generally during this period seems a plausible hypothesis due to the fact that doctors often required payment in advance—payment that people of lower

socio-economic status simply could not afford. Nonetheless, differences between West and East Coast cities, educational opportunities, the availability of doctors, as well as the more rural character of California, might yet produce interesting contrasts with the American Midwest and East.

Medicine and Gender

Patent medicines frequently promised a universal cure; as such, they rarely distinguished between the medicine's effects on men versus women, lest a differential undermine the powerful claim to universality (Starr 1982, 127–28). Nonetheless, some patent medicine products did target customers by gender. These typically reflected and reinforced gender stereotypes. Preservation of the physical appearance of the feminine ideal was a common selling point. Dr. Rose's French Arsenic Complexion Wafers—whose consumers were repeatedly assured of its completely harmless nature—advertised the arsenic wafer's time-reversing “wizard's touch” and “magical” powers (Sears, Roebuck and Company 1897, 38). Dr. Rose's French Arsenic promised to fix “pinched features,” “angular” form, and “even the coarsest and most repulsive skin and complexion, marred by freckles,” turning them into “the perfection of womanly grace and beauty” (Sears, Roebuck and Company 1897, 38). Male customers, a less successful demographic, were given a perfunctory nod: “Used by men, the favorable results are the same” (Sears, Roebuck and Company 1897, 38). No artifacts associated with the medical beauty industry were found at the dam-keeper dig site. The Cypress and West Approach Projects found that the prevalence of personal grooming items (including hair combs,

toothbrushes, perfume bottles, and cosmetics) was lower in areas of lower socio-economic status (M. Praetzellis 2009, 132–35).

Victorian American women, anthropologists Carroll Smith-Rosenberg and Charles Rosenberg observe, were “product and prisoner of [their] reproductive systems” (Smith-Rosenberg and Rosenberg 1973, 335). This was because nineteenth-century science saw a strong connection between female physiology and idealized female traits: submissiveness, gentleness, passivity, domesticity, and nurturing (Larsen 1994). Female medicines, like Dr. Pierce’s Favorite Prescription and Lydia E. Pinkham’s Vegetable Compound, addressed problems stemming from the “delicate womanly organs” and “womb troubles” (*San Francisco Call* 1900b; *San Francisco Call* 1895d; Schulman 2014, 22–24). Such problems were frequently attributed to female “hysteria,” a catchall nineteenth-century diagnosis. By the time of Frieda Duerst and Emeline Batchelder, hysteria had come to encompass just about every female complaint imaginable, including pain in the neck, knees, back, breast, and head; nausea and numbness; problems with taste, touch, smell, and sight; depression, narcissism, gullibility, mercurial behavior, and both sexually promiscuous and sexually frigid attitudes or behavior (Smith-Rosenberg 1986, 201–4). What made hysteria a female phenomena was its ostensible connection to the reproductive system—yet there was also a sense that hysteria might be an “ideational” disease stemming from a woman’s lack of rationality, or from a desire for attention and sensation-seeking, a kind of fraud perpetrated on her family, friends, and physician in order to get out of traditional women’s work while also forcing others to

attend to her words and whims (Trowbridge 2015, 121–23; Smith-Rosenberg 1986, 204–5).



Plaque XX.

ATTITUDES PASSIONNELLES

SUPPLICATION AMOUREUSE

Figure 35. The alleged physical manifestations of hysteria were influentially published in a series of photographs made by the French physician Jean-Martin Charcot in the late 1870s. Here, a woman is shown in "amorous supplication," a stage in the hysteric's physical manifestation of disordered desire (Bourneville and Régnaud 1878, Plate XX). Charcot's photographs and drawings were supposed to capture visual facts, but they were complex products of his own cultural construction of hysteria. As Georges Didi-Huberman has observed, the photographs were far from objective. Charcot sexualized hysteria by posing his patients in provocatively loose clothing, pulling their blouses from their shoulders, and loosening their hair, all in bed. Under threat of punishment, they were required to perform their own hysteria (Didi-Huberman 2004).

Reformers and intellectuals considered working class and poor Victorian-era women like Frieda Duerst and Emeline Batchelder particularly prone to hysteria, on account of their relative lack of education, harder workdays, and allegedly baser impulses; wealthy women were more likely to be diagnosed with a more refined disease known as neurasthenia, which consisted of most of the same symptoms, but without connotations of moral or intellectual inferiority (Trowbridge 2015, 122). None of the identifiable medicine bottles associated with either the Duerst or the Batchelder occupation were specific to hysterical complaints. Nonetheless, the concept of hysteria was a background to their lives, and speaks powerfully to the wider social expectations, constraints, and contradictions through which the women and girls of the Duerst and Batchelder households navigated their lives. Women were expected to inhabit the character of ideal Victorian femininity: submissive, emotional, and nurturing. Yet as I have shown, these same traits, when taken to an extreme, were the basis of hysterical diagnoses in Victorian America (Smith-Rosenberg 1986, 198). The ideal woman in the cultural context in which Frieda Duerst and Emeline Batchelder lived, therefore, needed to be submissive enough to make husbands and male contacts feel needed, but not so submissive and demanding as to become a burden. Motherhood, after all, required self-reliance, responsibility, and efficiency in the care of children. Assuming their household roles generally conformed to that of rural female contemporaries, Frieda and Emeline were expected to serve as the household nurse and physician, in addition to running the household, cooking, and making clothes (Smith-Rosenberg 1986, 199).

Medicines—whether patent or prescribed, or for adults or children, women or men—were often administered by women. In the Bay Area, like the rest of the country, women served as primary family caretakers (Gutman 2004). Although women's approaches to care differed by social class (for example, in the use of patent versus prescribed ethical medicines), the amount of time and effort they put into it varied less so—wealthy women rarely hired nurses to attend to sick relatives, choosing instead to see to it themselves, although many had the benefit of household help to lessen the burden elsewhere (Smith-Rosenberg and Rosenberg 1973, 354; Gutman 2004, 195–96). In the dam-keeper households, by contrast, Frieda Duerst and Emeline Batchelder would have had to tend to their children's illnesses—a baby's colic, an infant's cough or cold, or a toddler's scraped knee, for instance—as well as their husbands' injuries—perhaps a turned ankle from a late-night walk to check the water flow over the dam, or hand injuries associated with making repairs (Spring Valley Water Company (San Francisco, Calif.) 1913b).

Many female-oriented patent medicines also reinforced the social message that child-bearing and care were a woman's proper preoccupation (Larsen 1994, 72–73). One of the most well-known child medicines marketed to mothers was Castoria (Lockhart et al. 2014). The dam-keeper site produced three Castoria bottles, all from the trash pit: two in levels associated with the Duersts, who had two children, and one bottle in levels associated with the Batchelders who had three children. Dr. Pitcher's Castoria had been developed as a more pleasant alternative to castor oil, a commonly used but unpleasant laxative (Pitcher 1868). Castoria claimed to treat “Constipation, Sour Stomach,

Diarrhoea, Worms, Convulsions, Feverishness and Loss of Sleep,” particularly in children (*San Francisco Call* 1891c; *San Francisco Call* 1906d). Also allayed were “Sour Curd... Wind Colic... teething troubles... constipation and flatulency” (*Marin County Tocsin* 1895; *San Francisco Call* 1906c). In the nineteenth and early twentieth centuries, childhood digestive problems like constipation, diarrhea, and an upset stomach elicited fear and anxiety in parents. Intestinal disorders, including parasite infection, were a leading cause of death in infants and small children at the time (Reinhard 1994, 66; Levenstein 2003, 128–29). Accordingly, the Duersts and Batchelders would have watched a child’s developing stomach ache with concern (*The Cottage Physician for Individual and Family Use* 1898, 121).

Advertising for Castoria did more than tout its broad efficacy, it also portrayed Castoria as a positive presence in mothers’ lives: Castoria was “the Children’s Panacea – the Mother’s Friend” (*San Francisco Call* 1891c). Castoria was “a purely vegetable preparation” with apparently nothing to hide—the ingredients were printed on the label (*Healdsburg Tribune* 1896). Furthermore, the government-issued patent was invoked as evidence that the compound was “absolutely harmless” (*Healdsburg Tribune* 1896). By contrast, other popular remedies for children’s stomach complaints and general pain, such as “Mrs. Winslow’s Soothing Syrup,” had a high morphine and alcohol content (*San Francisco Call* 1906d; Gutman 2004, 195).

Perhaps the most ubiquitous marketing device was a simple four-line verse, which filled out column space in publications from the evangelical Anglican journal *The Churchman* to the *San Francisco Call* to *Harper's Weekly*:

When Baby was sick, we gave her Castoria.
 When she was a Child, she cried for Castoria.
 When she became Miss, she clung to Castoria.
 When she had Children, she gave them Castoria.
 (*Harper's Weekly* 1891; *San Francisco Call* 1892a; *The Churchman* 1895)

The advertising verse portrayed four stages in a woman's life. As a baby, she was incapable of making her own decisions, so her parents gave her Castoria to treat the maladies that afflict newborns. As a girl, she seemed to choose Castoria herself, a testament to its efficacy (or at least to its comforting familiarity). When she came of age but was not yet married, Castoria provided a source of stability (and regularity) in uncertain surroundings. When she was finally married with children of her own, she repeated the process anew, choosing Castoria for her children, who could not make decisions for themselves. It is possible that Emeline Batchelder might have lived the life described in the poem. Whereas Frieda Duerst was born in Switzerland, Emeline Batchelder was born in the United States to immigrant parents in 1871, three years after the patent for Castoria was granted (United States Federal Census 1900; United States Federal Census 1910).

Yet the proper use of medicine—and its association with feminine virtue and ideal motherhood—could be subverted in hidden ways. Some women in the Bay Area subverted the moral medicinal use of patent medicine, finding the consumption of certain

types of high-alcohol concoctions a socially invisible way of indulging without the judgment often delivered against female drinkers (Gutman 2004, 189). Bitters—which the Duerst household purchased—often had a higher alcohol content than wine (Gutman 2004, 189).

Castoria was not the only patent medicine that was billed as safe for children, although it was the only one used by either dam-keeper family to be marketed specifically for use in children. Numerous cure-alls for adults were also advertised as safe for the young. In particular, both Ayer's Cherry Pectoral and California Syrup of Figs, which the Duersts purchased at the Woodside Store, and Paine's Celery Compound, which the Batchelders used, were advertised as safe for the whole family (*San Francisco Call* 1890d; *Daily Alta California* 1884; *San Francisco Call* 1894a).

Medicines directed specifically to men, meanwhile, were most often framed in terms of restoring vigor or manhood (*Sacramento Daily Union* 1882b; Sears, Roebuck and Company 1897, 33; *San Francisco Call* 1905b). Some offered a few vague symptoms, such as "Premature Decay, Nervous Debility, Lost Manhood, etc." (*Sacramento Daily Record-Union* 1882b). Dr. Chaise's Nerve and Brain Pills meanwhile offered a vast grab-bag of symptoms, including not only feelings of "low spirits, nervousness, weariness, lifelessness," but also "headache, blurring of sight, specks floating before the eyes, . . . slow circulation of blood, cold feet, . . . drowsiness after meals, but nervous wakefulness at night, languor in the morning, and a constant feeling of dread, as if something awful was going to happen" (Sears, Roebuck and Company 1897, 33). All claimed to offer a way

for men to regain the strength, energy, and virility of youth. When strength, energy, and virility were found lacking among middle- or upper-class city dwellers, these symptoms coalesced under a diagnosis: neurasthenia.

Neurasthenia, like hysteria, was part of the “price of progress”: doctors believed that the rapid pace of city life and the changes remaking society were directly responsible for the neurasthenic disease course (Gosling 1987, 9). There is no equivalent in medicine today, and at the time the symptoms were diverse and diffuse, encompassing everything from a vague feeling of stress and tiredness, to more extreme neuroses, and a rainbow of symptoms in between: headaches, depression, difficulty sleeping, indigestion, and even a sense of simply not living up to one’s potential. In contrast to hysteria, however, neurasthenia was a “respectable” disease, in no small part because medical experts considered it primarily a condition affecting wealthy men (Gosling 1987, 9–10). Some theorists regarded neurasthenia as a consequence of cultural evolution outpacing individual, physical evolution: the modern man became a neurasthenic when the nervous vitality of his brain was overtaxed by his pursuit of America’s glittering intellectual and cultural possibilities (Gosling 1987, 11). No artifacts related to neurasthenia were found in the dam-keeper trash pit. The absence of neurasthenia-related medicines comes as no surprise, both because neurasthenia was viewed as an affliction of higher socio-economic classes, and because outdoor labor and the rural lifestyle were seen as natural antidotes (Gosling 1987, 11–13). Nonetheless, the presence of Paine’s Celery Compound in the Batchelder trash pit deposit—advertised by its maker as a cure for nervousness brought

on by the overwhelming pace of modern life—suggests that one or more members of the family may have found the demands of contemporary society physically or emotionally taxing.

Conclusion

For Frieda and Melchior Duerst, Edgar and Emeline Batchelder, and the Duerst and Batchelder children, medicine bottles carried with them more than simply the liquid inside. Although we have no surviving record of the families' internal beliefs and attitudes about health, the archaeological remains of their medical practices, considered within the larger regional and national context of cultural biases and meanings surrounding the body and disease, provide a speculative window into their experience of the body, the treatment of its disorders, and their attitudes toward disease in society more generally. We can speculate that the Duersts and Batchelders, like many of their contemporaries, viewed disease as a consequence of both personal choices and broader cultural circumstances. For example, they may have seen the increase in nervous disorders and exhaustion as a consequence of cultural and economic change brought by rapid industrialization and urbanization. They may have viewed disease outbreaks in densely packed cities as the responsibility of those who were afflicted—the impoverished residents' cramped, squalid living conditions that put them at high risk of infection were the result of their own choices. The families may have viewed some diseases as a consequence of racial or ethnic difference. San Francisco's Chinese population was often the scapegoat in the event of a disease outbreak, from leprosy to smallpox to bubonic

plague. Yet for both families, negative biases toward immigrants (in the Duerst's case) or the working class may have informed their own health choices: the Duersts in particular used a great many more patent medicines than ethical medicines prescribed by doctors, a fact consistent with the hypothesis that as immigrants they may have used patent medicines not only to save money, but also to avoid moral condemnation.

The patent medications found in the dam-keeper trash pit suggests that both families suffered from headaches and constipation, as well as digestive complaints, including those of infant children. Both families treated these conditions with popular patent medicines—Bromo-Seltzer and Castoria. Yet the characteristically broad ambit of most patent medicines means that we cannot be sure what specific affliction the medicines present in the families' trash deposit were purchased to treat. At times, the possibilities represented by a single medication contrast sharply: Hall's Balsam for the Lungs, for example, purchased by the Duersts, could be used to treat something as minor as a cough, and something as severe and life-threatening as consumption (tuberculosis). The broad and often ambiguous swath of "symptoms" that patent medicine purveyors claimed to treat, meanwhile, medicalized common, everyday experiences like tiredness, creating a new market for medicines that promised to restore users to their peak form, real or imagined. Paine's Celery Compound, for instance, used by the Batchelders, treated the nervous disorders of hectic Gilded Age life, whose telltale symptoms included frustration, exhaustion, and anxiety.