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Canning foods and selling modernity: the canned food industry and consumer culture, 1898-1945

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CANNING FOODS AND SELLING MODERNITY:
THE CANNED FOOD INDUSTRY AND CONSUMER CULTURE,
1898-1945

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of History

by

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ABSTRACT

At the turn of the twentieth century, Americans feared commercially canned foods. From the Spanish American War until well into the 1920's, canned foods received a barrage of media attacks and accusations of unhealthiness, lack of cleanliness, and a lack of transparency and regulation in processing. Moreover, as gastrointestinal distress was quite prevalent among American society, many Americans feared that it was commercial foods that were making them sick. By the time Americans were coming home from World War II, the climate of opinion concerning commercially canned foods had changed, and this was in large part due to the unyielding fight from commercial canners to refashion their own image and create a lasting consumer market for their products. At the same time, the story of canned foods' rise from menace to staple of American diets is also a story of how science became embedded in American culture and how Americans became more trusting of experts and professionals. More than a history of an industry, this study attempts to place canned foods in a much larger discussion of the legitimizing power of science, the authority of experts, and American society's attempts to deal with modernity and a rapidly changing world.

INTRODUCTION: CANNING FOODS: THE TRANSFORMATION OF CANNED GOODS FROM THREAT TO NECESSITY

At the turn of the twentieth century, canned foods had garnered a decidedly unfavorable reputation among the American public. In a letter to the *New York Times* in 1899, concerned citizen George A. McLane argued that “[t]here have been so many reports of poisoning from the use of various canned foods that it is urgent that something be done. . . to prevent the further loss of life.”¹ Part of this was legitimate—industrial canning in the late nineteenth century was not necessarily a sanitary endeavor, and newspapers were flooded with stories of unsuspecting consumers who met their death at the hands of “ptomaines,” mysterious toxins that caused gastrointestinal distress at best, and death at worst. By the 1910’s and 1920’s, scientists had identified the bacteria *B. botulinus* as the cause of botulism, a food poisoning with marked characteristics of infection such as muscle atrophy and convulsions, loss of sight, speech, and hearing, and even death. Scientists had first identified botulism in tainted sausage, but it quickly became associated with improperly packed canned goods. Situated within a climate of concern for the purity and sanctity of foods—Upton Sinclair’s *The Jungle* was published and became an instant sensation in 1906—canned foods were a prime target because they were processed outside of the watchful eyes of the consumer. From the beginning, food manufacturers had to convince grocers and consumers to trust that their products were wholesome, tasty, and of a high quality, since as experts explained, “The taking of the work away from the home and away from observation. . . has developed a lurking suspicion that possibly some of the material used and the care taken in preparation are not all they should be.”² Though most of the cases of botulism

¹ George A. McLane, “Danger from Canned Goods,” *New York Times*, March 8, 1899.

² Ann Vileisis, *Kitchen Literacy: How We Lost Knowledge of Where Food Comes From and Why We Need to Get it Back* (Washington, DC: Island Press, 2008), 77.

reported came from foods canned at home, it was commercially canned foods that were the prime target of skepticism because as the National Cannery Association (NCA) admitted in the 1910's, the industry itself had not done a good enough job educating the public about the sanitation and wholesomeness of the industrial canning process.

During the interwar period, the NCA implemented an aggressive advertising and educational campaign with the intention of not only mitigating any mishandling of canned foods during the canning process, thereby hoping to eradicate botulism, but also focused on making industrial canning a transparent process that would show American consumers (mostly women) that commercially canned foods were safe. The NCA started its own official inspection service and constructed research facilities headed by chemists and bacteriologists, which solidified the relationship between science and industry. To educate Americans, the NCA gathered psychological and statistical information from major American advertising firms who researched why women bought certain foods and why they put other products—perhaps a can of beans—back on the shelf. While advertising may have focused directly on consumers, the NCA also had to battle the influence of home economists, who during the interwar period were attempting to establish themselves as the ultimate conduit between the consumer and the manufacturer. Home economists, also influenced by a beleaguered USDA that encouraged home canning, especially during World War I and the Depression, both utilized the efficiency of commercially canned foods, but also used home canning as a major part of its general curriculum.

This study attempts to tease out these complicated relationships that resulted in a post-war boom in convenience foods, ushering in a real shift in the American diet, where generations of Americans were raised on TV dinners, 5-can composed vegetable salads, and boxed cereal. Before World War I, canned foods were looked at with a skeptical eye—consumers believed

they were expensive, tasteless, nutritionally void, and probably rancid. After World War II, canned foods became a multi-billion-dollar industry and American consumer culture went through a monumental shift from a place of widespread distrust of packaged foods to wholesale trust of the canned foods industry. Dr. Albert A. Schaal, the resident physician and contributor to *Good Housekeeping* argued that advanced canning methods were “the most significant scientific advancement” of all time, and had not only revolutionized and homogenized the American diet, but also gave American civilization the boost to become a leader in world affairs.³ Americans across class lines—but especially the middle class—were convinced that canned foods were part of a “normal,” decidedly American diet. Menus became streamlined and canned foods were an acceptable ingredient in their own right. Americans also became more concerned about convenience, and canned foods were the logical answer to harried housewives. Every issue of *Good Housekeeping* after World War II boasted hundreds of recipes featuring canned foods, the savior of the busy housewife, who never knew when the boss was coming over for dinner, or when Billy’s baseball team would stop by, famished after an afternoon practice. Canned foods were perfect for any occasion: weeknight dinners, Sunday potlucks, afternoon tea with the girls, bridge or poker night, or weekend sleepovers, and it was recommended that every homemaker equip her family with a pantry full of canned vegetables, meats, fruits, and condiments. Not only were they efficient—canned foods were also nutritious, ideal for young children and keeping all members of the family out of the perils of malnutrition and the diseases that came with it—scurvy, rickets, and pellagra, for example. Canned foods were also mainstays in all of the housewife’s favorite traditional recipes. Countless time-honored favorites were reformulated in the pages of women’s magazines and cookbooks to incorporate these labor-saving additions. To achieve this, canned foods had to undergo a major rebranding, and

³ Albert A. Schaal, “The Question Box,” *Good Housekeeping*, November 1948, 16.

Americans had to be convinced that safety, nutritional value, efficiency, and convenience were necessary factors that decided what products to bring in a modernizing kitchen.

The story of American society from the turn of the nineteenth century to 1950 is one of anxiety, reform, homogenization, war, depression, and renewal or rebirth. Anxiety over the pangs of modernity—mass production, urbanization, advances in transportation, new forms of media, the electrification of the country, and new social norms—brought about an unsettling dis-ease among Americans who longed for the settled, more predictable world they believed, whether it ever existed or not, had been the characteristics of American society.⁴ Many historians agree, especially concerning the first thirty years of the twentieth century, that American society faced a crisis of social dislocation—from waves of immigration to a loss of masculinity with the disappearance of the Western frontier.⁵ The responses to these and other various crises were multifaceted and at times contradictory. Some Americans sought solace in the rhetoric of Progressive reform and through the “uplifting” work of settlement houses, others hoped to banish foreigners or punish those responsible for vice and un-American beliefs.⁶ At the

⁴ T. J. Jackson Lears, *No Place of Grace: Antimodernism and the Transformation of American Culture* (Chicago: The University of Chicago Press, 1994). William Leuchtenberg, *The Perils of Prosperity, 1914-1932* (Chicago: The University of Chicago Press, 1993).

⁵ Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: The University of Chicago Press, 1996). Lawrence Goodwyn, *The Populist Movement: A Short History of the Agrarian Revolt in America* (New York: Oxford University Press, 1978). Sharon E. Wood, *The Freedom of the Streets: Work, Citizenship, and Sexuality in a Gilded Age City* (Chapel Hill, NC: The University of North Carolina Press, 2005). Nan Enstad, *Ladies of Labor, Girls of Adventure: Working Women, Popular Culture, and Labor Politics at the Turn of the Twentieth Century* (New York: Columbia University Press, 1999). Marjorie Spruill Wheeler, *One Woman, One Vote: Rediscovering the Women's Suffrage Movement* (Troutdale, OR: NewSage Press, 1995). Alan M. Kraut, *Silent Travelers: Germs, Genes, and the Immigrant Menace* (Maryland: The Johns Hopkins University Press, 1995).

⁶ Gabriel Kolko, *The Triumph of Conservatism: A Reinterpretation of American History, 1900-1915* (New York: Glencoe, 1963). Robert H. Wiebe, *The Search for Order: 1877-1920* (New York: Hill and Wang, 1967). Jackson Lears, *Rebirth of a Nation: The Making of Modern America, 1877-1920* (New York: Harper Collins, 2009). Michael McGerr, *A Fierce Discontent: The Rise and Fall of the Progressive Movement in America, 1870-1920* (New York: Oxford University Press, 2005). Lori Ginzberg *Women and the Work of Benevolence: Morality, Politics, and Class in the Nineteenth Century United States* (New Haven, CT: Yale University Press, 1992). Robin Muncy *Creating a Female Dominion in American Reform, 1890-1935* (New York: Oxford University Press, 1994). Jan Wilson

same time, a culture of modernity was steaming ahead at top speed, emphasizing the appetizing ideals of scientific advancement, consumer culture, Hollywood glamour, and whiteness.⁷

Many scholars have considered these issues, but few have focused on the role that food items played in the development of these themes. Katherine J. Parkin has unpackaged the effects of gendered advertising of food items in *Food is Love: Advertising and Gender Roles in Modern America*. In her analysis of hundreds if not thousands of advertisements, Parkin found that advertisers marketed food “almost exclusively to women,” and used messages of love, insecurity, power, health, and deference to their husbands to circumscribe women with a fixed notion of their own femininity while at the same time trying to convince women to purchase their products.⁸ Parkin argued that food was indeed a tool of conformity and control in a world of unyielding change.⁹

In *97 Orchard: An Edible History of Five Immigrant Families in One New York Tenement*, museum director Jane Ziegelman investigated the roles that the food played among five families who made their home in tiny tenements on the Lower East Side of New York City. Food was a reminder of the trials of the old world. It was also a tool of reformers and settlement

Doolittle, *The Women's Joint Congressional Committee and the Politics of Maternalism, 1920-1930* (Champaign, IL: University of Illinois Press, 2007).

⁷ Jackson Lears, *Fables of Abundance: A Cultural History of Advertising in America* (New York: Basic Books, 1994). William R. Leach, *Land of Desire: Merchants, Power, and the Rise of a New American Culture* (New York: Pantheon, 1993). Jennifer Frost, *Hedda Hopper's Hollywood: Celebrity Gossip and American Conservatism* (New York: NYU Press, 2011). David Roediger, *Working Towards Whiteness: How America's Immigrants Became White; The Strange Journey from Ellis Island to the Suburbs* (New York: Basic Books, 2006). Matthew Frye Jacobson, *Whiteness of a Different Color: European Immigrants and the Alchemy of Race* (Cambridge: Harvard University Press, 1999). Arthur I. Miller, *Einstein and Picasso: Space, Time and the Beauty that Causes Havoc* (New York: Basic Books, 2002). John P. Herron, *Science and the Social Good: Nature, Culture, and Community, 1865-1965* (New York: Oxford University Press, 2009); Katharine Kish Sklar, *Florence Kelley and the Nation's Work: The Rise of Women's Political Culture* (New Haven, CT: Yale University Press, 1997).

⁸ Katherine J. Parkin, *Food is Love: Advertising and Gender Roles in Modern America* (Philadelphia: University of Pennsylvania Press, 2006), 8-9.

⁹ Parkin, 10-11.

house workers to Americanize these seemingly backwards immigrant families.¹⁰ Through their interactions with the women of the settlement house movement, immigrant families learned about the preparation of food, as well as new findings in proper nutrition, sanitation and disease prevention, and overall hygiene. Mixing recipes with stories of ethnic heritage, Ziegelman's work demonstrates the cultural value of food for immigrants trying to navigate a strange urban environment. Similarly, Hasia R. Diner's *Hungering for America: Italian, Irish, & Jewish Foodways in the Age of Migration* documents how immigrants used food and a new style of cooking to create new social bonds within and across ethnic communities.¹¹ Similarly, in *We are What We Eat: Ethnic Food and the Making of Americans*, Donna R. Gabaccia illustrates how food was the ideal method for transforming the identities of those who came to America, at the same time shaping the identities of native-born Americans who partook in the consumption of variations of ethnic cuisine.¹² For Gabaccia, food was a sort of cultural pathway for affirmation of old and new identities, and it served as a tool for Progressives to make-over these immigrant communities and "create a scientific, healthful, and national cuisine" that was decidedly American.¹³

Home economists played a major role in making food a tool for reformation and Americanization, and much has been written in recent years exploring the ways in which these women wholeheartedly took on this job. Laura Schapiro's *Perfection Salad: Women and*

¹⁰ Jane Ziegelman, *97 Orchard: An Edible History of Five Immigrant Families in One New York Tenement* (New York: HarperCollins, 2010), 22-23.

¹¹ Hasia R. Diner, *Hungering for America: Italian, Irish, & Jewish Foodways in the Age of Migration* (Cambridge, Harvard University Press, 2001), 4.

¹² Donna R. Gabaccia, *We Are What We Eat: Ethnic Food and the Making of Americans* (Cambridge: Harvard University Press, 1998).

¹³ Gabaccia, 128.

Cooking at the Turn of the Century, takes a look at the early days of home economics and the Boston Cooking School, which sought to bring science into the kitchen and make a place for women among the hard sciences in colleges, universities, and high schools around the country.¹⁴ Her analysis suggests that domestic scientists, as these women called themselves, were bent on establishing their own legitimacy, highlighting this importance by arguing that “the development of the human race is largely dependent upon food.”¹⁵ In a similar vein, Megan J. Elias argues in *Stir it Up: Home Economics in American Culture*, that home economists were part of the larger discourse of reform that took issue with “mass production, alienation, and urbanization,” which “appeared to be unstoppable trends.”¹⁶ What resulted was a bevy of female experts who were equipped with the authority of science. The new science of domesticity was efficient and structured around principles that could be tested in a laboratory.¹⁷ Carolyn M. Goldstein argues in *Creating Consumers: Home Economists in Twentieth-Century America*, that the main purpose of home economists was to create a “rational consumer,” one that on the one hand attempted to better the lives of homemakers across the country, but at the same time direct their purchases towards manufactured goods and specialty services, since researchers had concluded that women made the majority of all household purchases.¹⁸ Janice Williams Rutherford showed how one such professional home economist, Christine Frederick, took the science of domesticity to the

¹⁴ Laura Shapiro, *Perfection Salad: Women and Cooking at the Turn of the Century* (New York: The Modern Library, 2001).

¹⁵ Shapiro, 147.

¹⁶ Megan J. Elias, *Stir it Up: Home Economics in American Culture* (Philadelphia: University of Pennsylvania Press, 2008). See also Sarah Stage and Virginia B. Vincenti, eds., *Rethinking Home Economics: Women and the History of a Profession* (Ithaca, NY: Cornell University Press, 1997).

¹⁷ Elias, 11.

¹⁸ Carolyn M. Goldstein, *Creating Consumers: Home Economists in Twentieth-Century America* (Chapel Hill, NC: The University of North Carolina Press, 2012), 6-8.

consumer products industry to help further the transformation of homemaking into something that could be perfected by science.¹⁹ Through the work of home economists, housework had effectively changed from an “art” based on tradition to a science that utilized the latest in scientific research.

Harvey Levenstein has been quite prolific in his study of food and how it has been used by members of society in a myriad of ways. In *Revolutions at the Table: The Transformation of the American Diet*, Levenstein explores the ways that Americans changed what they ate based on external influences, such as the introduction of packaged foods, concern about a malnutrition scare, new research in the importance of vitamins and minerals in preventing disease, and food faddists who took advantage of Americans’ fears and touted various and sundry ways of eating.²⁰ In *Paradox of Plenty*, Levenstein examines malnutrition scares during the Great Depression, the promise of new packaged foods, special foods for infants and toddlers, the importance of food as a weapon in World War II, and the trials and tribulations of a nation addicted to fast food in the late 1980’s and early 1990’s.²¹ His most recent work, *Fear of Food: A History of Why We Worry about What We Eat*, recounts a number of food scares, including food adulteration and poisoning, and a fear of a lack of vitamins.²² The main theme of Levenstein’s work is analyzing the ways in which businesses and politicians attempted to convince consumers to listen to

¹⁹ Janice Williams Rutherford, *Selling Mrs. Consumer: Christine Frederick and the Rise of Household Efficiency* (Athens, GA: University of Georgia Press, 2003).

²⁰ Harvey Levenstein, *Revolutions at the Table: The Transformation of the American Diet* (New York: Oxford University Press, 1988).

²¹ Harvey Levenstein, *Paradox of Plenty: A Social History of Eating in Modern America* (Oxford: Oxford University Press, 1993).

²² Harvey Levenstein, *Fear of Food: A History of Why We Worry About What We Eat* (Chicago: The University of Chicago Press, 2012).

experts and professionals and change their food habits lest they become the victims of real or purported dangers.

On the subject of germs and food poisoning, Nancy Tomes has addressed some of the ways in which fears of food poisoning, especially in canned foods, helped inform the motivations of reformers and home economists to Americanize immigrants and bring the science of bacteriology to the immigrant mother.²³ Part of this education stemmed from the goals of home economists to bring cleanliness and sanitation to tenement kitchens, which ultimately reflected their fear that immigrants and the poor were carriers of germs and diseases.²⁴ Tomes traces how the germ theory of disease transmission became a part of public discourse, and in turn spurred the “‘golden era’ of the American public health movement, which coincided with the Progressive Era.”²⁵ In a sense, my work fills in the gaps in Tomes work by digging deeper into the fear of food poisoning and how canned foods overcame the odds and American canned food manufacturers actually succeeded in shifting a negative public perception into one of acceptance.

This dissertation traces how canned foods went from being an unknown evil on the grocer’s shelves at the turn of the twentieth century to a staple in the pantry of post-World War II Americans. I examine the ways in which this transformation by canned foods can be used to understand how the growth of several overall themes, such as the rise of consumer and science culture, reform movements, and homogenization, influenced American society. Chapter One describes canned foods’ reputation from the late 1800’s and the Spanish American War canned meat scandal. This public court of inquiry investigating whether various canned meat

²³ Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge: Harvard University Press, 1998).

²⁴ Tomes, 148.

²⁵ Tomes, 6-7.

manufacturers willingly sold the U.S. Army tainted or “embalmed” meat was a public spectacle, and ignited the passions of many Americans who were appalled at the indecency of the canned foods industry. I also explore several other public relations nightmares—like the canned olive scare, an overwhelming fear of “ptomaine” death, and Upton Sinclair’s *The Jungle*—that served to bring the canned foods industry to its knees time and time again.

Chapter Two examines how science became the fighting force that would save canned foods from becoming a gastronomic relic. The professionalization of the field of bacteriology, as well as the findings of chemists and physicians helped legitimize the process of canning and ground it in sound science. Though skeptical of the practicality of having researchers and scientists on staff, canners rushed to join the National Canners Association and reluctantly opened up to the possibility that they had a lot to learn from the laboratory. The National Canners Association latched on to this promise of science, and hoped that through consumer education they could refashion the industry into one of efficient modernity, and an industry that prized sanitation and health.

Chapter Three follows the canners through the first phase of their educational campaign—the task of informative labeling. In many ways, the label was the first chance for canners to convince consumers to bring their can home with them. An uninformative or confusing label would not result in sales, and even the colors, fonts and, images used could prove to be detrimental to canners. Canners eagerly sought refuge in science, adopting the quantitative methods of labeling analysis and the psychology of advertising to guarantee that no space on the can was wasted and more American women would choose their product. Women responded, wanting more informative labeling and expecting their voices to be heard, thereby encouraging

the development of relationships between manufacturers and consumers. Cannerymen hoped that these relationships would be formed by home economists.

Chapter Four illustrates the many ways that home economists were not the ideal transmitters of information concerning canned foods because home economists were involved in their own struggle for a unified voice in the Progressive Movement. Cannerymen had hoped that home economists would educate consumers about the safety, economy, and wholesomeness of canned foods. Home economists, instead, advocated the use of home canning to save consumers money, give them peace of mind about the quality of their foods, and as a tool to Americanize immigrant populations. Commercially canned foods were seen as expensive for both immigrant families and native born. Speaking in the language of thrift, home economists could not reconcile the cannerymen's wants with the needs of their population. Moreover, home economists were more concerned with how to handle the diets of immigrant and poor populations, debating whether educators should teach them American ways, or should they, as scientists, attempt to preserve as much of the cultural identity of immigrants as possible? Home economists, therefore, were not reliable promoters of the cannerymen's unified message.

The final chapter argues that it is through the women's magazine *Good Housekeeping*, that the canned foods industry was able to overturn decades of poor publicity and reeducate the prejudiced mind of the American people. *Good Housekeeping* attacked the problem in every way possible—by educating through the columns and articles written by physicians and experts, open dialogue between readers and the magazine through the “Question Box” feature, and by color advertisements that emphasized the infallibility of science and the ultimate health and safety of canned foods. This all-encompassing undertaking served to seamlessly and effortlessly reshape the minds of readers and give them the sense that canned foods had changed for the

better. Cannerys used elaborate text and image heavy ads to create a “tableaux” for consumers to refer to when they pondered the benefits and safety of commercially canned foods. Advertising, more than the scientists, home economists, and industry experts, developed the market for canned goods among a highly skeptical public. As a result of this monumental effort, by the end of World War II, practically every home had a can-opener and a bevy of recipes at hand to turn their pantry of canned foods into delectable bites. Ultimately, the history of the canned foods industry in the first half of the twentieth century illustrates the growth and power of a consumer culture that embraces science and technology as well as advertising to sell the American housewife modernity, one can at a time.

CHAPTER ONE: DEFENDING THE CAN: COMBATTING THE NEGATIVE IMAGE OF CANNED FOODS

I wrote that book sometimes blinded with my own tears. . . . it was such a terrible story.

—Upton Sinclair, on writing *The Jungle*¹

“I can’t eat the canned meat,” the red-headed Kentucky volunteer explained as he tossed his ration of canned beef into the brush. “If you are a baby, you had better not come to the war. Eat it and be a man,” the commander of the Rough Riders, Lieutenant Colonel Theodore Roosevelt commanded. The young man begrudgingly picked up a hunk of the stringy, greasy meat, supplied by Armour & Company, and immediately vomited.²

In the weeks and months following the return of troops from Cuba and Puerto Rico with the end of the Spanish-American War, stories about the quality of rations—especially the canned and refrigerated beef that made up the bulk of the daily ration—permeated the American media. At the turn of the century, the American diet was in transition—mass production had introduced new pre-made, processed culinary options for the average American family, such as canned meats and vegetables, and pre-made crackers and cereals, and innovations in transportation brought goods from all over the country to the table. Commercially tin- canned foods, packed across the country in massive factories, were a hard sell because the customer could not see the contents. From the beginning, food manufacturers had to convince grocers and consumers to trust that their products were wholesome, tasty, and of a high quality, since as experts explained, “The taking of the work away from the home and away from observation. . . has developed a lurking suspicion that possibly some of the material used and the care taken in preparation are

¹ Upton Sinclair, “Reminiscences about Some of his novels and about his Political Career,” (Typescript, Oral History Program, Claremont Graduate School, Claremont, California, 1963), as quoted in James Harvey Young, *Pure Food: Securing the Federal Food and Drugs Act of 1906* (Princeton: Princeton University Press, 1989), 224.

² *Food Furnished by Subsistence Department to Troops in the Field*, Part I, 56 Congress, One Session, Senate Doc. 270, 1100-1107, as quoted in James Harvey Young, *Pure Food*, 138.

not all they should be.”³ Consumers were concerned about the quality of manufactured foods, and many agreed that taste could not be guaranteed. Moreover, consumers feared packaged foods, as newspapers ran story after story of Americans becoming ill from food poisoning, pointing the finger at canned foods, especially. Manufacturers used artistic labeling and at times whimsical, descriptive advertising to convince customers to purchase their products, but a series of public relations disasters beginning with the media frenzy surrounding the rations issued during the Spanish-American War forced canned food manufacturers on the defensive and made this task appear insurmountable. The canned foods industry was at the mercy of a consumer market that doubted that canned foods were a reliable and healthy addition to their pantries. These issues came out in the official testimony from canners, physicians, soldiers, and factory workers at the turn of the century.

According to official reports from the War Department, from May 1, 1898, to April 30, 1899, almost 5,500 men died of disease and 968 men were “killed in battle or died of wounds, injuries or accident” as a result of serving in the Caribbean.⁴ While there was evidence of typhoid and pneumonia in the hot and humid training camps in the South, such as Jacksonville, FL and Chickamauga, Georgia, what became most troubling were reports that the meat supplied to the troops by Armour & Co., Swift & Co., and Libby McNeill made soldiers physically ill because it lacked nutrient value at best, or was putrid at worst.⁵ Under the urging of Secretary of War Russell Alger, President McKinley set up a commission to investigate the reports which

³ Ann Vileisis, *Kitchen Literacy: How We Lost Knowledge of Where Food Comes From and Why We Need to Get it Back* (Washington, DC: Island Press, 2008), 77.

⁴ Edward F. Keuchel, “Chemicals and Meat: The Embalmed Beef Scandal of the Spanish-American War,” *Bulletin of the History of Medicine* 48, no 2 (Summer 1974): 249.

⁵ Keuchel, 251.

convened in September of 1898 and concluded in December.⁶ According to historians, it was the testimony of Major Nelson A. Miles at the end of December that was the most damaging, because he declared that the meat was “embalmed,” and had been injected with some secret chemical that was making the health of the soldiers deteriorate.⁷ The Commissary General, Charles Patrick Eagan, was so infuriated with Miles’s testimony that he personally attacked Miles on the stand, which earned him a court-martial and gave the case added sensationalism. Some newspapers even began to refer to the case as “America’s Dreyfus Affair.”⁸ While this may have renewed the public interest in the court proceedings, what was most damaging to the long-term reputation of canned goods was the testimony that emerged from the second court of inquiry, which began on February 9, 1899 and ended on April 29. It was this session that foreshadowed the issues that would plague the canned-food industry for the next forty-plus years despite the supposed consumer-protection “win” of the Pure Food and Drug Act of 1906—namely, a fear of food poisoning and lack of trust in the quality control of the canning process.

“It is customary to hear complaints. Men complain that there is something wrong, and as a rule it is corrected as far as possible,” explained Major General Nelson A. Miles in a court of inquiry drawn up in February of 1899 to investigate food given to soldiers in Cuba and Puerto Rico during the Spanish-American War.⁹ Soldiers were complaining about their rations—canned and refrigerated beef— which had been supplied to them by Armour and Swift through a contract with the federal government. Headed to Santiago, Puerto Rico from Charleston, South

⁶ Ibid.

⁷ Keuchel, 252.

⁸ Ibid, 253.

⁹ *Foods Furnished by Subsistence Department*, Part I, 13.

Carolina, troops refused to eat the meat rations supplied to them, and instead “lived on coffee and crackers.”¹⁰ Rae Weaver, a journalist by trade, of the Wisconsin National Guard documented the conditions of his company in his journal. His account of training and the food in Tennessee, Georgia, and South Carolina was quite favorable, albeit hot and humid—“over 100 degrees in the shade”—but once the company set sail for Puerto Rico, the situation turned.¹¹ Weaver’s company disembarked from Charleston on July 20, 1898, and within three days the health of those on board their ship, *La Grande Duchess*, had deteriorated. On July 23, he remarked that the “rations since we have been at sea are something terrible. The canned beef issued to us is very poor. It is making all the men sick. . . .”¹² By Monday, July 25th, he reported that “about one-half of Co. K are seasick and of the 1,500 men on board our transport, all are exhausted with hunger. The coffee is like lye, the meat spoiled and the canned to-matoes (sic) cannot be cooked.”¹³ The results of insufficient rations (and a rocky sea) had weakened the troops significantly, and though they hoped to be fed better once they landed in Ponce, Puerto Rico, the “supper consisted of nothing but the fearful rations we had been given on board.”¹⁴ Luckily, the men were able to forage, barter and at times just take food—several times troops shot goats and cows which they readily skinned and cooked—but this did not prevent them from going to bed hungry after dining on “four hardtack each, one spoon full of beans, and one-half cup of coffee.”¹⁵

¹⁰ Ibid.

¹¹ Sean Patrick Adams, “Hardtack, Canned Beef, and Imperial Misery: Rae Weaver’s Journal of the Spanish-American War,” *The Wisconsin Magazine of History* 81, no 4 (Summer 1998): 252.

¹² Adams, 253.

¹³ Adams, 254.

¹⁴ Adams, 255.

¹⁵ Adams, 260.

Miles admitted that he really did not take their complaints seriously until he came back to the States and the soldiers who had returned were too weak to walk three or four miles in a celebratory parade. The presiding general over troops who returned to Montauk, New York, claimed that “only 50 per cent of the men were able to march.”¹⁶ This was quite striking to Miles, who immediately called for an investigation of the rations provided. The Court of Inquiry also interviewed Lieutenant Colonel William Van Horn, who also noted that his men complained about the food rations, especially the beef, and grew increasingly sick as their time in Cuba lengthened. “[The canned roast beef] did not seem to be spoiled,” he explained, [yet] the men were all becoming sick. . . . I don’t know that they ever attributed it to anything other than the climate, the rainy season, and so on. While there was a great deal of complaint about the meat, I never knew of sickness being attributed to the meat question.”¹⁷ Van Horn admitted that the soldiers detested and rejected the meat, which they typically ate straight out of the can when they absolutely had to eat it, yet he did nothing about it. A similar testimony was made by Lieutenant Colonel Charles W. Minor—soldiers complained about the beef and their health declined—though Minor actually reported the complaints to an inspector, but he remarked that the meat did not appear to be spoiled or “decayed or anything of that kind, as far as I know.”¹⁸ These testimonies, and the testimonies of other officers in the Court of Inquiry, pointed to the “tastelessness,” “stringiness,” and seemingly lack of nutritional value of the overcooked, dry

¹⁶ *Foods Furnished by Subsistence Department*, Part I, 14. According to Weaver’s diary, his company was deemed fit enough to march upon their return to Beaver Dam, Wisconsin in November. See Adams, 266.

¹⁷ *Foods Furnished by Subsistence Department*, Part I, 17.

¹⁸ *Foods Furnished by Subsistence Department*, Part I, 28. Rear Admiral John G. Walker, who led men in the exploratory expedition in Nicaragua in 1897 were also supplied with canned meat, and Walker declared that there were no complaints about the condition of the canned rations. *Foods Furnished by Subsistence Department to Troops in the Field*, Part II, Record of a Court of Inquiry, 56th Congress, 1st Session of the Senate, Document No. 270, Washington: Government Printing Office, 1900, 1498.

canned beef which resulted in their men refusing to eat the rations.¹⁹ In addition, officers reported that they never received any special preparation instructions for the canned beef and did not even think about heating up the canned meat before consumption.²⁰ For several hundred pages of testimony, men from the highest ranks of the US Army testified that from their own experience, the meat was edible.²¹ Though he admittedly only tasted the meal and did not consume an entire bowl of prepared beef stew, Captain Henry L. Ripley assured the court that canned roast beef was “mixed with potato and onions, of which we had plenty of at the time, and made a very palatable dish. I was messing with my own troop at the time and used it myself the same as the men did.”²² Captain R. Page Wainwright testified that though his men were sick with diarrhea, he believed that the cause stemmed from malaria not the meat.²³ Major and Commissary of Subsistence George W. Ruthers provided the court with his own personal records of the ration inventory he compiled while stationed in Jacksonville, Florida and in Savannah, Georgia, which was a departure point for soldiers headed to Cuba and Puerto Rico. In his testimony, Ruthers explained that he secured refrigerated and canned meat from both Armour and Swift, and upon his personal inspection, the refrigerated beef did not appear to be embalmed,

¹⁹ *Foods Furnished by Subsistence Department*, Part I, 32.

²⁰ *Foods Furnished by Subsistence Department*, Part I, 8.

²¹ Theodore Roosevelt also testified in this session, remarking that while stationed in Tampa, he “ate a mouthful or two of it myself there, and while I did not think it was good from the can I then opened, that can had no putrid smell, and there was nothing to make me feel that I had to take any positive action,”—this after one of his Rough Riders, a man named “Ash” from Kentucky vomited in front of Roosevelt after being bullied into eating the canned meat. His opinion changed after his experiences in Cuba, because it soon became obvious that the men detested the meat, as he “never heard anyone. . . among all of the officers to whom I spoke and among all the enlisted men that occasionally spoke to me, I never heard anyone speak of it save as an unfit ration.” *Foods Furnished by Subsistence Department*, Part II, 1101-1102. According to Roosevelt, on the way home his men could not eat the canned beef nor the “what you might call embalmed beef” because it was unfit for consumption and an “utterly unwholesome ration for troops.” 1105, 1107.

²² *Foods Furnished by Subsistence Department*, Part I, 219.

²³ *Foods Furnished by Subsistence Department*, Part II, 1094.

or “treated chemically,” and he instructed each regiment to report any problems with the canned beef, and “no complaint was made.”²⁴ Ruthers did, however, add that “the canned roast beef I found spoils just about like any other canned food—peaches or apples, or pears or tomatoes. The only difference is that one can when it is spoiled smells terribly. . . . A room of this size packed full of it to the ceiling, with two or three cans spoiled, would make one think the entire lot is rotten.”²⁵ Based on his tallies, 2,726 pounds out of 562,628 pounds of canned beef, both Armour & Co. and Libby & McNeill, were spoiled.²⁶ Still, this was a very small percent, and Ruthers maintained that he never heard any complaints coming from troops who made their way to the Caribbean and were issued canned beef, adding that the quality of the cans sent to war were “excellent.”²⁷

Ruthers, however, never actually went to Cuba or Puerto Rico. Quartermaster-Sergeant E. F. O’Sullivan went to Cuba with Company F, of the Ninth Massachusetts Infantry, and testified that he opened all of the canned rations for the men in his company. “In opening the cans,” he began, “there seemed to be a semiviscous liquid floating in them with a tallow odor. . . . it was nauseating to myself, and I had a fair appetite. . . . Of course the debilitated effect of the climate did something toward the men’s illness, but the use of that ration of beef tended toward diarrhea.”²⁸ As for the refrigerated beef, once it arrived in Cuba, O’Sullivan and a cook, who was a Boston butcher, unrapped the parcels and the cook commented immediately, “That is embalmed beef.” O’Sullivan testified that the cook, who had died and therefore could not be

²⁴ *Foods Furnished by Subsistence Department*, Part I, 557-558.

²⁵ *Foods Furnished by Subsistence Department*, Part I, 558.

²⁶ *Ibid.*

²⁷ *Foods Furnished by Subsistence Department*, Part I, 558, 563.

²⁸ *Foods Furnished by Subsistence Department*, Part I, 574.

summoned to testify, explained that all butchers knew the difference between fresh and chemically treated meat. The beef had a “deathly odor,” though he was sure it was not due to the meat being spoiled.²⁹ Moreover, Sergeant Edward Mason testified that while he was commissary-sergeant in Tampa, an unnamed representative from both Armour & Co. told him specifically that the meat was “chemically treated,” and that it had “spoiled.”³⁰ Similarly, Captain D. H. Baughton, who took the Third Cavalry to Cuba, testified that canned beef was “absolutely unfit as a ration.”³¹ In his opinion, the canned beef had “very little nourishment in it, and the fatty portion [was] absolutely repulsive.”³² Dr. William G. Willard concurred. He testified that “the canned roast beef, so called, was never fit for a ration, and it was especially unfit for men in the condition of all the troops coming back from Cuba. Their digestive organs had been thoroughly deranged by repeated attacks of malaria and dysentery. . . and yellow fever.”³³ His argument, then, was that because of the volatile climate in the Caribbean, the stomachs of the soldiers were too weakened to digest the canned meat properly. Colonel Henry L. Turner remarked that “it nauseated me; I could not eat it. I tried to eat it, but I could not eat it. I tried to live on it. . . . The canned roast beef, as I saw it and sampled it, was utterly unfit for a ration.”³⁴ When he stopped eating the beef, his gastrointestinal symptoms, including diarrhea, stopped.³⁵

²⁹ *Foods Furnished by Subsistence Department*, Part I, 575.

³⁰ *Foods Furnished by Subsistence Department*, Part II, 1007.

³¹ *Foods Furnished by Subsistence Department*, Part I, 867.

³² *Foods Furnished by Subsistence Department*, Part I, 868.

³³ *Foods Furnished by Subsistence Department*, Part II, 1021.

³⁴ *Foods Furnished by Subsistence Department*, Part I, 872.

³⁵ *Foods Furnished by Subsistence Department*, Part I, 874.

Dr. John Bliss Shaw, of Joliet, Illinois, who served in Puerto Rico in the Third Illinois Volunteer infantry, uttered the dreaded condemnation of “ptomaine poisoning” in his testimony. It was his opinion that the men who came down with debilitating sickness in his regiment were sick with ptomaine poisoning. According to Dr. Shaw, the extreme heat of the tropics could immediately cause ptomaine germs to grow in the meat in a matter of minutes.³⁶ Because of the putrid condition of the canned beef, Dr. Shaw demanded that all the canned beef be plunged in boiling water, which created “a mass that was disgusting to the senses. The men had a very impolite term for it. They called it “son of a bitch,” he explained.³⁷ He urged his commander to stop issuing the beef, but it was to no avail—the commissary, a Captain Piper, assured Shaw that the meat was suitable, according to Shaw’s testimony.³⁸ The doctor also reported that his men came in contact with both typhoid and pneumonia en route to the Caribbean, but that it was the rations that lead to the deterioration of his company.³⁹ Dr. B. F. Pope, who accompanied troops to Cuba, also testified that ptomaines formed in cans immediately after opening, or sometimes “ptomaines may be in existence before the can is opened.”⁴⁰ The news media latched on to the testimony of Dr. William H. Daly, (and the testimony of other physicians, military generals, and members of the infantry) who testified that he was told by unnamed sources from the chemical

³⁶ *Foods Furnished by Subsistence Department*, Part I, 805.

³⁷ *Foods Furnished by Subsistence Department*, Part I, 808.

³⁸ *Foods Furnished by Subsistence Department*, Part I, 811.

³⁹ *Foods Furnished by Subsistence Department*, Part I, 816.

⁴⁰ *Foods Furnished by Subsistence Department*, Part II, 1273. Other physicians, like Dr. Philip F. Harvey, argued that it was malaria, overeating, heat, and lack of exercise and vegetables that caused the illnesses. Dr. Charles Heisman reported that at the veterans hospital at Montauk Point, none of the men he saw were sick because of the rations. In his opinion the soldiers suffered from typhoid and malaria. *Foods Furnished by Subsistence Department to Troops in the Field*, Part II, 1302; 1308. Testimony from Dr. Henry Birmingham, who was the physician in Ponce, Puerto Rico, confirmed the reports of the previous physicians concerning typhoid and malaria. 1313.

industry that the “best customers were beef packers.”⁴¹ Dr. Daniel A. Curry concurred with Daly, and argued that based on tests he conducted on the beef in Jacksonville, the meat “showed a decided reaction to the test for salicylic acid.”⁴² Clearly, based on this testimony it appeared that meat canners were using chemicals to alter their processed meats, which was unsettling to American consumers.

As the court of inquiry went down the ranks, however, the story echoed that of O’Sullivan and Shaw and became more damaging for canned foods. First Sergeant Howard Alexander, captain of Company N, reported that pretty much his entire company complained about the canned roast beef. “It seemed to be very bad. . . .” he explained, “It caused the men, more or less, to be sick at their stomachs. In many cases it caused sickness and vomiting.”⁴³ While he did not personally complain about the rations—because it was “no use”—and he did not claim that the canned beef appeared to be “spoiled,”—because he did not open any of the cans he was personally issued—he did know that the taste was very bad and “over two-thirds” of the nearly fifty men in his company were debilitated with “vomiting, and the men suffered with bowel complaint.”⁴⁴ When asked if another sort of illness could have caused these maladies among the men, such as malaria, Alexander replied: “I couldn’t say, sir; I don’t know whether it was that or not. I judge the meat had something to do with it, because it was very bad.”⁴⁵ It is

⁴¹ *Foods Furnished by Subsistence Department*, Part II, 1361. For a sampling of these reports, see: “Army Beef Report is Made Public,” *New York Times*, May 8, 1899. “Beef Made Troops Ill,” *New York Times*, March 3, 1899. “The Army Meat Scandal,” *New York Times*, February 1, 1899. “Sickened by Army Beef,” *New York Times*, March 16, 1899. “The Army Court of Inquiry,” *New York Times*, March 22, 1899.

⁴² *Foods Furnished by Subsistence Department*, Part II, 1414.

⁴³ *Foods Furnished by Subsistence Department*, Part I, 232.

⁴⁴ *Foods Furnished by Subsistence Department*, Part I, 234.

⁴⁵ *Ibid.*

unlikely that the men would have recognized spoiled meat, though, because the canned meat itself did not have to be profusely putrid in order to harbor deadly botulinus bacteria.

Sergeant Nicholas Buckage, of Company F, testified that the men in his company “claimed that there was none of it [canned beef] good—that it was all spoiled.”⁴⁶ Over half of the men in his company were sick for their tour. Sergeant Webster Allen Hatcher, Company D, stated that the canned roast beef “looked bad when you opened it; it didn’t taste good when you tried to eat it, and it didn’t seem to do any good when you had eaten it. If anything, it would make you rather sick at your stomach.”⁴⁷ Hatcher also reported his findings to the same inspector, Major Walter Reed, to which Lieutenant Colonel Minor reported his complaints.⁴⁸ According to Hatcher, Reed “made the notes.”⁴⁹ Sergeant John White, also of Company D, testified that the canned beef he was issued was also inedible. “I threw it away. It smelled bad,” he explained. “If I was to go to work to tell you honestly, it was all bad. Every bit of that canned roast beef was all bad. . . . I saw lots of men open it and throw it away.”⁵⁰ Their experience, as well as the experiences of six other men they served alongside in Cuba and Puerto Rico, was put to the test by an experiment devised by Dr. W. C. Borden, who compiled four trays of cold canned beef and another four in stew form, still warm. Two of the plates were from the stock that went to the islands during wartime. Dr. Borden, a surgeon, set up the table to see whether they could identify the meat they had been issued.⁵¹ Each of the men made their selections, and

⁴⁶ *Foods Furnished by Subsistence Department*, Part I, 245.

⁴⁷ *Foods Furnished by Subsistence Department*, Part I, 254.

⁴⁸ *Foods Furnished by Subsistence Department*, Part I, 345.

⁴⁹ *Ibid.*

⁵⁰ *Foods Furnished by Subsistence Department*, Part I, 259.

⁵¹ *Foods Furnished by Subsistence Department*, Part I, 335.

were cross-examined after being reminded that they were under oath. The men were asked to make a decision based on appearance, but a few of them tasted the meat. In cross-examination, Hatcher claimed that the beef on display was not like the meat they were provided with in Cuba, and argued that he did not get sick because he did not eat the meat.⁵² According to the court, the meat selected for this trial was from the same stock used during the war.

Men from lower ranks were also asked to testify beginning on Thursday, March 2, 1899. First-class private Clarence Walters of New York City recalled that “the beef I had hold of was spoiled after being opened for a few moments. It contained worms. . . . I was sick the entire voyage after the first day’s experience with the beef,” and he assured the court that he never got seasick.⁵³ He also testified that none of the cans that were open in his presence were “normal.”⁵⁴ Private G. W. Stubblebine, a clerk from New York City reported that the canned beef was tolerable in the first few days of his deployment, “but after five or six rations of it we began to feel that there was something wrong with it; it was nauseating. . . . I vomited three times before I came to that conclusion.”⁵⁵ Stubblebine, admittedly new to eating canned meat, explained that his company heated up the meat with vegetables to no avail—the meat tasted the same and induced vomiting immediately.⁵⁶ Similarly, Guy T. Viskniskki, who worked in the newspaper industry in Philadelphia complained that he could not eat the stew made from canned beef because “every time I ate of the stew, I say, it made me deathly sick, and I never tackled it after

⁵² *Foods Furnished by Subsistence Department*, Part I, 344.

⁵³ *Foods Furnished by Subsistence Department*, Part I, 408.

⁵⁴ *Foods Furnished by Subsistence Department*, Part I, 409.

⁵⁵ *Foods Furnished by Subsistence Department*, Part I, 451-453.

⁵⁶ *Ibid.*

that.”⁵⁷ R. C. Miller, a machinist from New York City, testified that the meat had a foul smell, and that “after the cook was through with the part that was not going to be cooked, and that was given to the Cubans. At first they accepted it, but after a while they wouldn’t eat it. . . . I have seen a friend of mine open a dozen cans at a time trying to get good ones. They were covered with little black spots.”⁵⁸ When asked if the cans were “tainted,” Miller affirmed, “Yes, sir; that is what I would call putrid, rotten meat. That is what I call it. It was.”⁵⁹ Clearly, for the men who experienced debilitating sickness first hand, the quality of the stringy canned beef seemed like a logical cause of their illness. In their diaries, in official court testimony, and undoubtedly in stories told back home in the pubs and around the family hearth, the volunteers who served in the Spanish-American War confirmed the fears that Americans had of commercially canned foods.

The court also entertained testimony from the canned food industry. Arthur Meeker, the general manager of Armour & Company testified to the handling and packing of the meat, which he provided in a lengthy and gruesome account of how cows were slaughtered, how the meat was inspected, and then how the meat for refrigerated beef was stored and kept cool, while the beef to be canned was sent to a separate room for processing. Meeker then described the canning process, assuring the court that the beef was tinned, sealed, and “cooked or roasted or sterilized for about two hours at a temperature of 220 degrees. Our experience has proved that that time and temperature are requisite for proper sterilization, to enable the meat to keep, to kill the bacteria that are in all flesh.”⁶⁰ Holes were then poked into the can to release “water,” which

⁵⁷ *Foods Furnished by Subsistence Department*, Part I, 459.

⁵⁸ *Foods Furnished by Subsistence Department*, Part I, 463.

⁵⁹ *Foods Furnished by Subsistence Department*, Part I, 465.

⁶⁰ *Foods Furnished by Subsistence Department*, Part I, 383. The commission later interrogated Gustavus S. Swift, the president of Swift & Co., who testified mostly about the appropriation and conditions of the government

Meeker claimed created an important vacuum, and then the hole was soldered, the can cooled, and the product was then readied for shipping a day later.⁶¹ Admitting that he was “not a practical chemist,” Meeker claimed that this process would guarantee safe meat, so much so that “it is used largely in the summer . . . because it is not necessary to have a fire, it being already cooked and ready for the table.”⁶² The issue that became especially alarming for Americans, however, was that Meeker admitted that he could not confirm that the canned food process at Armour & Co. was inspected, though the slaughtered animals were inspected immediately before and after by the USDA’s Bureau of Animal Industry.⁶³ Dr. W. West Devoe, the head Inspector of Animal Industry, described the USDA’s system of inspection which included veterinary inspectors, who were trained veterinarians, and examiners, who were without degrees but rather came from the ranks of the “packing house men” and knew how to identify unfit carcasses.⁶⁴ Dr. Devoe assured the court that no meat could make its way to the fridge or the canning room without inspection, going so far as to say that it was impossible, but admitted that the quality control of the meat was out of their hands after slaughter.⁶⁵ Representatives from Swift & Co.,

contract, as well as the lack of chemical preservatives used in the refrigerated beef. He did, however, admit that borax was used in pork shoulder that was sent overseas. 754-762.

⁶¹ *Foods Furnished by Subsistence Department*, Part I, 383.

⁶² *Foods Furnished by Subsistence Department*, Part I, 385, 387.

⁶³ *Foods Furnished by Subsistence Department*, Part I, 391. Edward Keuchel, “Chemicals and Meat: The Embalmed Beef Scandal of the Spanish-American War,” in *Bulletin of the History of Medicine*, 42 no. 2 (Summer 1974) 263.

⁶⁴ *Foods Furnished by Subsistence Department*, Part I, 618-619.

⁶⁵ *Foods Furnished by Subsistence Department*, Part I, 622.

as well as Libby, McNeill & Libby concurred that their companies used the same slaughtering and packing processes, and the meat was only inspected before and after slaughter.⁶⁶

The problem was that though the USDA designed the inspection process with the intention that an inspector or examiner would be on the killing floor at all times, in some cases it was not possible. The court called assistant inspector H. B. Paxson to the stand, who worked in the slaughterhouses of Lipman, Libby, and Swift. According to Paxson, he was the only inspector on the floor at all times—he was without a stock examiner and thus the entire inspection operation was solely his responsibility.⁶⁷ Paxson explained that observing the killing could take anywhere from four to twelve hours. “For instance,” he explained, “on Mondays probably only four hours will be devoted to it; on Tuesdays it might be ten hours.”⁶⁸ When asked how many hours of the ten he would be on the floor, Paxson recalled that half would be spent observing the slaughter, and the other would be “a good bit in resting up.”⁶⁹ The court never followed up on this oversight—how could the entire process be thoroughly inspected and it be impossible for unfit meat to make it to processing if he was without an assistant and only spent half the time inspecting? He also remarked that some packinghouses stored “piles of salt

⁶⁶ *Foods Furnished by Subsistence Department*, Part I, 586-587, but there isn’t a report included about what they found. The court also toured Kansas City, Mo packinghouses. 896. The court also repeatedly asked the canners about the quality of the meat that was used for canning, but they assured the court that the canned meat was the same quality as the refrigerated, and that they didn’t use the designation “canner” for certain meat. The testimony of George B. Van Norman, who worked at the Union Stockyards in Chicago, however, stated that poor meat was designated as fit for canning, and every animal is inspected by a USDA inspector. 774-782. William D. Miles, of the Armour Packing Company, Kansas City, MO, testified that “canned roast beef is made from a very poor grade of lean beef” 898, but not the “poorest grade.” The poorest grade were used in corned beef and barreled beef. 905. According to his testimony, Armour Packing Company sold 1,350,000 lbs of beef to the US government. 899.

⁶⁷ *Foods Furnished by Subsistence Department*, Part I, 639.

⁶⁸ *Foods Furnished by Subsistence Department*, Part I, 642.

⁶⁹ *Foods Furnished by Subsistence Department*, Part I, 642.

and borax,” though he never inquired about what the borax was used for.⁷⁰ Clearly, the inspection process was heavily flawed. Further, testimony from cannery workers like H. L. Antone, a foreman at Armour Canning Company was also damning. Antone testified that though the meat was repeatedly inspected throughout the canning process—when placed in the can, when capped, after washing, and then labeling—if a can failed inspection but the contents of the can were declared okay, the meat was reused and re-canned—even if the can was “leaky.”⁷¹ The packers then assembled case packs of the meat, and affixed the government stamp bearing their inspector’s name, though the inspector never set foot into the cannery.⁷²

Though industry executives reassured the court that preservatives were not used in canning meat, the testimony of others, like Dr. E. P. Murdock, who worked for the Chicago Health Department, suggested otherwise. He related to the court an independent examination of canned beef that he inspected in June of 1898. Based on his observation, the canned beef contained salt and saltpeter, which “must have been in that beef before the boiling was completed, because it completely saturated the fiber of the meat and hardened it.”⁷³ Dr. Murdock argued that these preservatives made the meat lose its nutritional value. Later in his testimony, Dr. Murdock explained that he also conducted a somewhat bizarre experiment on refrigerated meat that had been brought to him “in little tin boxes” by “a gentleman who did not

⁷⁰ *Foods Furnished by Subsistence Department*, Part I, 645-646. Another inspector, W. A. Bruette, who at the time was an inspector at Swift, also testified that the packinghouses he worked at stockpiled large quantities of borax, but he never looked into what it was for since his jurisdiction was the slaughterhouse floor only, and at times slaughtering took place without an inspector being on the floor. 646-659. Dr. George Lytle, inspector at Swift and Libby reported that sometimes up to fourteen hours would pass without an inspector present. 667-675. Dr. W. D. Bigelow, chemist with the USDA testified later that borax, and even formaldehyde, but not salicylic acid, was safely used in several food preparations, including milk, sausage, and wine. *Foods Furnished by Subsistence Department*, Part II, 1638-1643.

⁷¹ *Foods Furnished by Subsistence Department*, Part I, 910; 913-914.

⁷² *Foods Furnished by Subsistence Department*, Part I, 911-912.

⁷³ *Foods Furnished by Subsistence Department*, Part II, 1041, 1043.

state from whence it came.” In this meat, which he opened upon receipt, he found both boracic acid and salicylic acid, which he “advised against the use of it as a preservative of nutritive material, especially meat, because it would delay digestion. . . . and become nauseating.”⁷⁴ He had no idea if the meat came from the Government, or if it came from canners. When asked about the unknown gentleman, Dr. Murdock explained that he did “not believe a scientific man expects to go into these supposable things. We only make our examinations as to facts laid before us.”⁷⁵ The court also entertained testimony from the former bellman of the Hotel Morrison in downtown Chicago. The bellman, Mr. V. M. Fleishman, recalled that a patron requested that Fleishman accompany him to the stockyards. Fleishman said that he was the one who carried the tin boxes to Armour & Co., and that the mysterious man (Fleishman could not remember the man’s name) was not wearing a uniform, though he told Fleishman that he was “either quartermaster or quartermaster-general”—had set up an experiment in meat preservation.⁷⁶ As a result of this line of questioning, the court summoned one of the chemists with Armour & Co., Albert George Manns, who assured the court that salicylic acid was never used in their canned meat, though borax was used for meat that was sold in foreign markets.⁷⁷

The news media both contributed to the frenzy surrounding the investigation, but also served as a witness on the stand representing the people of the United States who claimed they had evidence that the canning industry was disingenuous. For example, Sidney Reid, a New York reporter for the Associated Press testified that he actively pursued an interview with General Miles, who first claimed that the meat in the Caribbean was “embalmed,” because “the

⁷⁴ *Foods Furnished by Subsistence Department*, Part II, 1042.

⁷⁵ *Foods Furnished by Subsistence Department* Part II, 1044.

⁷⁶ *Foods Furnished by Subsistence Department*, Part II, 1039-1040.

⁷⁷ *Foods Furnished by Subsistence Department*, Part II, 1077.

whole country was anxious to hear from him.”⁷⁸ Reid testified about his interview with Miles, explaining to the court that Miles expressed that “Every part of the country has contributed to the mass of correspondence which I have received in reference to the beef served to our soldiers.”⁷⁹ By getting out the story that played out during the court of inquiry, both Miles and Reid were both answering the demands of the public and providing a public forum for what everyday Americans assumed to be true about canned foods.

In this particular court of inquiry, nearly all of the obstacles that canning manufacturers would have to overcome in the first half of the twentieth century were present—a lack of transparency in the canning process, no real inspection/oversight in the canning process, the supposed lack of nutrition and safety in canned foods, poor quality and taste, and misleading labeling. Though some historians argue that the Pure Food and Drug Act of 1906 “helped give homemakers a welcome sense of security about manufactured products,” and according to industry leaders the Act “represented the first step towards breaking down the ancient prejudice against canned foods,” it did not result in a marked increase in consumer confidence.⁸⁰ Sales still lagged for years, and stories of ptomaine poisoning still made headlines in the papers—people were afraid of what was in the can, and a series of unfortunate events after the Spanish American War scandal plagued the industry. The media explosion of yellow journalism at its finest had found its test-case for concrete protective legislation that hoped to ensure an American right to pure, safe food.

⁷⁸ *Foods Furnished by Subsistence Department*, Part II, 1516.

⁷⁹ *Foods Furnished by Subsistence Department*, Part II, 1515.

⁸⁰ Vileisis, 133. F. C. Wheeler, “National Bureau to Correct Trade Abuses,” *Canning Age* 1, no. 5 (May 1920): 6.

The Pure Food and Drug Act of 1906 was a triumph for Americans who were concerned about the safety and real contents in their patent medicines and commercially prepared and packaged foods. Consumer groups, women's organizations, associations of chemists and physicians, and even manufacturers all banded together to fight unscrupulous manufacturers who were poisoning the American people. Probably the most sensational aspect of the Pure Food and Drug Act was the work of muckraker Upton Sinclair, who spent nearly fifty days in the stockyards of Chicago in 1904 and compiled his findings in his best seller *The Jungle*, published in book form in February of 1906.⁸¹ Again, what Sinclair found was similar to what came out in the Court of Inquiry: inspectors who were too "casual" and "distracted," thus allowing poor carcasses into the line, "[m]eat that had turned sour was rubbed with soda to remove the smell," and "spoiled hams were treated again with a stronger pickling compound" to disguise the putrid taste, and canned meat was made from cows that were "old. . . crippled. . . diseased," and meat that "had tumbled out on the floor, in the dirt and sawdust, where the workers had tramped and spit uncounted billions of consumption germs."⁸² According to historian James Harvey Young, it was *The Jungle* that "spurred a mighty reaction in the body politic that, in four months, led to the enactment of two laws," putting a fire under President Theodore Roosevelt that moved him from "revelation to legislation" and even causing Dr. Harvey Wiley to admit that it was the meat issue that "at last aroused public support for pure-food legislation."⁸³ At the heart of the Act was a recognition of the need for consumer education and adequate information on all packaged goods, which would help to guarantee that "if the consumer was adequately informed, he could

⁸¹ Young, *Pure Food*, 222-224.

⁸² Young, 224-225.

⁸³ Young, 229; 235; 253.

protect himself against deception, even against danger.”⁸⁴ Legislation determined what was a “food,” what was a “drug,” the meaning of “adulteration,” and the meaning of “misbranding,” or “deceptive labeling.”⁸⁵ Labeling needed to include the appropriate weights and measures for the product, as well as use geographic terms that were factual for the product in question—the manufacturer of a canned fish in Baltimore could not claim it was another kind of fish found off the Pacific coast, for example—and labels had to use appropriate colors and images that were not misleading and that made consumers think that the can in question was a brand of product that it was not.⁸⁶ As we will see in later chapters, the issues spelled out in the legislation were not eradicated, and it would take subsequent additional legislation to help limit abuses of language, weight, and quality.

Despite the Pure Food and Drug Act, which should have eased the minds of consumers, a survey of the stories of ptomaine poisoning in the *New York Times* from 1899 to 1925 suggests a widespread fear of food that gripped American diners and made them think twice about the meals they ingested everyday. Headlines like “Ptomaine Poison Fatal: Child Dies After Great Suffering,” “Family Poisoned at Dinner,” “One Dead, Six are Ill From Poisoned Dinner,” “Canned Peaches Fatal,” and “Ptomaines Kill 3 in Family” were quite commonplace, along with stories of huge banquets, socials, family reunions, and the canteens at hospitals and homes for the aged and mentally disabled that turned bad after scores of outbreaks.⁸⁷ Ptomaine poisoning

⁸⁴ Young, 264.

⁸⁵ Young, 265-266.

⁸⁶ Ibid.

⁸⁷ I have listed here a sampling of the over 600 entries in the *New York Times* concerning “ptomaines” from 1899 to 1925. “Ptomaine Poison Fatal,” *New York Times*, December 11, 1900. “Family Poisoned at Dinner,” *New York Times*, January 24, 1904. “One Dead Six Ill From Poisoned Dinner,” *New York Times*, April 25, 1904. “Canned Peaches Fatal,” *New York Times*, March 18, 1907. “Ptomaines Kill 3 in Family,” *New York Times*, August 28, 1905. See also “500 Persons Poisoned,” *New York Times*, March 14, 1908. “Poison in Veterans’ Food?” *New York Times*, April 9, 1900. “300 Motorists Poisoned,” *New York Times*, June 10, 1908. “Poison 60 at Church Fair,” *New York*

was a classless and common health concern, as evidenced by the wide variety of victims. It was reported that Madison Square Garden actor Hugo Toland contracted ptomaine poisoning and was put on a 3-day milk diet to regain his health.⁸⁸ At the steamy Washington D.C. summer party of Nevada Senator William M. Stewart fifty attendees came down with ptomaine poisoning, “one after another they fell to the ground-writhing in agony.”⁸⁹ Straw-goods import magnate and head of J. S. Plummer & Company Charles Burr died of eating poisoned clams at a Mystic Shriners meeting in the summer of 1905.⁹⁰ While out camping outside of Ithaca, New York, forty men from Cornell University became sick with what was thought to be ptomaine poisoning, but “because the men had eaten no canned meats,” doctors concluded it was instead contaminated water that caused the gastric distress.⁹¹ Similarly, the rowing team at Yale sadly “lost a day’s rowing” due to ptomaine poisoning.⁹² 300 female students at Mississippi State College were the victims of poisoning from chicken salad, causing the college to call “every Columbus physician” to the school to aid in this large outbreak.⁹³ The daughter of actress and singer Lillian Russell, Dorothy Russell, was rushed to the Good Samaritan Hospital in Cincinnati, Ohio in September of

Times, February 25, 1910. “65 Doctors Made Sick,” *New York Times*, April 18, 1913. “30 Poisoned by Ptomaines,” *New York Times*, July 24, 1913. “Ptomaine Poisoning at Bedford,” *New York Times*, August 30, 1920. “Starving Family Ptomaine Victims,” *New York Times*, January 15, 1921. “2 Now Dead in Poisoning,” *New York Times*, February 01, 1921. “Ptomaine Hit Congregation,” *New York Times*, March 22, 1922. “Hundreds of High School Students Made Ill by Ptomaine Poisoning After School Lunch,” *New York Times*, October 15, 1922. “Poison at Jackson Feast,” *New York Times*, February 01, 1923. “Ptomaines Make 90 Hotel Guests Ill,” *New York Times*, September 05, 1923. “Food Poisons 25 Co-eds,” *New York Times*, March 11, 1925.

⁸⁸ “Actor Toland Poisoned,” *New York Times*, September 4, 1903.

⁸⁹ “Senator’s Guests Poisoned,” *New York Times*, August 13, 1903.

⁹⁰ “C.S. Burr Dies of Ptomaines,” *New York Times*, July 27, 1905.

⁹¹ “Forty Cornell Students Ill,” *New York Times*, June 17, 1905.

⁹² “Yale’s Oarsmen Poisoned by Fish,” *New York Times*, June 10, 1915. “Poisoning Attack Impairs Yale Crew,” *New York Times*, June 18, 1915.

⁹³ “Chicken Salad Poisons 300 Girl Students,” *New York Times*, February 13, 1922.

1907 because she was “seriously ill from ptomaine poisoning.”⁹⁴ The former Governor of New Jersey James H. Peabody and his entire family fell ill due to ptomaine poisoning and “not to a plot” as some readers of their sickness may have believed.⁹⁵ Composer John Phillip Sousa was forced to find a replacement for a concert he was scheduled to lead in Chicago after he was stricken with ptomaines “after a meal of hearty prairie chicken.”⁹⁶ Tim Hurst, “one of the best-known sporting men in the country,” a retired umpire and referee died as a result of ptomaines, while boxing champion Jack Dempsey also fell to the illness.⁹⁷ Managing Editor of the *New York Tribune*, George McLeod Smith died after struggling with ptomaine poisoning for a week.⁹⁸ Making front-page headlines, physicians in 1907 believed that then Secretary of War William Howard Taft, who was known to over-indulge, was a victim of ptomaine poisoning “after a long series of banquets,” but he was diagnosed with acute indigestion instead.⁹⁹ This misdiagnosis was quite common; it was falsely believed that novelist Jack London died of ptomaine poisoning, and even in the mysterious death of President Warren G. Harding in 1923, ptomaines were suspected.¹⁰⁰ Because the symptoms of food poisoning mimicked so many other conditions and the safety of foods could not be ensured even after the passage of the Pure Food and Drug Act, food was often the source of blame.

⁹⁴ “Dorothy Russell Ill,” *New York Times*, September 20, 1907.

⁹⁵ “Peabody Had Ptomaine Poisoning,” *New York Times*, January 20, 1906.

⁹⁶ “Sousa is Seriously Ill,” *New York Times*, November 29, 1907.

⁹⁷ “Tim Hurst, Sports Character, Dead,” *New York Times*, June 05, 1915. “Dempsey Here, Ill, Anxious to Fight,” *New York Times*, April 24, 1925.

⁹⁸ “George M. Smith of the Tribune Dies,” *New York Times*, November 23, 1920.

⁹⁹ “Taft Collapses After a Review,” *New York Times*, June 15, 1907.

¹⁰⁰ “Jack London Dies Suddenly on Ranch,” *New York Times*, November 23, 1916. “Harding Has Attack of Ptomaine Poison,” *New York Times*, July 29, 1923. “President Harding Dies Suddenly,” *New York Times*, August 4, 1923.

While newspapers latched on to the sensationalism of ptomaine poisonings from the turn of the century to the 1920's, the repeated use of canned foods for the soldiers heightened America's concern about the safety of its food supply. After the Spanish American War canned foods debacle, reports continued to surface of soldiers becoming sick from eating government issue meals. In 1902, the *New York Times* reported that 115 men training at the Naval Academy in Annapolis had filled the beds of the Academy's hospital because of ptomaine poisoning, though the Academy had not "ascertained definitely what article of food contained the ptomaine."¹⁰¹ On the other side of the United States, soldiers in Presidio, California became ill after eating at a celebratory luncheon honoring their high marks during target practice. The canners themselves visited the front to investigate accusations of poisoning.¹⁰² With the US entry into World War I, Americans began to express their concerns that the camps and the standard of care for American soldiers was not up to par. People complained that it did not make sense for the military to "take the healthy boys from communities, put them in camps, where they are not prepared to receive them, and let them get sick, as that doesn't hasten the end of the war."¹⁰³ A soldier stationed in San Antonio, Texas, wrote in to Nebraska Senator Gilbert Hitchcock claiming that conditions at the San Antonio base were so bad that the men either "didn't get enough to eat," or were stricken with ptomaine poisoning, causing even the "good, big-hearted, patriotic enlisted men cuss and damn the Government" in such a manner that he was certain that "investigation would be stimulated."¹⁰⁴ An attorney from Deming, New Mexico wrote in to Minnesota Representative A. J. Volstead complaining that dry and dusty Camp Cody was an

¹⁰¹ "Naval Academy Illness," *New York Times*, December 13, 1902.

¹⁰² "25 Soldiers Poisoned," *New York Times*, September 16, 1910.

¹⁰³ "Indorse Demand for War Reforms," *New York Times*, January 27, 1918.

¹⁰⁴ Ibid.

appaling location for a military camp, adding that he “cannot comprehend how experienced men with the best interest of the country at heart could have selected such a location for an army camp; certainly a well-planned German scheme could not have better served the enemy.”¹⁰⁵ Men were sick with pneumonia and other unidentified stomach aches and headaches, and many believed that medical treatment at these camps was grossly inadequate, with some calling the treatment of the soldiers “medical abuse.”¹⁰⁶ Life on the ships and away from the home camps was not necessarily any better. The destroyer Gilmer, en route to the United States from Denmark suffered an outbreak of ptomaine poisoning “attributed to preserved food.”¹⁰⁷ In fact, conditions were believed to be so poor and canners were so afraid of another scandal reminiscent of the Spanish American War that the National Canners’ Association, which was formed in 1907, investigated concerns and sent industry representatives to the front in Europe to inspect the canteens and interview soldiers.¹⁰⁸ According to Earl Chapin May in *The Canning Clan: A Pageant of Pioneering Americans*, as a result of this trip the NCA was able to exonerate canned foods, and sent their findings to various media outlets in an attempt to quell the suspicions.¹⁰⁹ The NCA demanded that the newspapers issue corrections to the libelous stories, but the damage was already done. This was a tough blow to the National Canners’ Association, and to the canning industry as a whole, because canners, like other American industries, had

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ “Ptomaine Illness on Warship Attributed to Preserved Food,” *New York Times*, September 21, 1920.

¹⁰⁸ Earl Chapin May, *The Canning Clan: A Pageant of Pioneering Americans* (New York: The Macmillan Company, 1937), 337.

¹⁰⁹ “National Canners Disprove Poisoning by Canned Foods,” *American Food Journal* 12, no. 12 (December 1917): 682.

overwhelmingly supported the war effort by producing more to feed the soldiers than the homefront.

In 1919, botulism outbreaks sent the California canned olive industry to its knees, and with it brought about increased concerns about the safety of industrial foods. According to Judith Taylor, in her book *The Olive in California: History of an Immigrant Tree*, an “epidemic of botulism occurred in 1919 and was traced to the consumption of canned California ripe olives,” which became a “veritable disaster” for the canned foods industry.¹¹⁰ The outbreak began, as Taylor illustrates, at a country club in August, 1919 outside of Canton, Ohio. The menu was extensive, including “turkey, potatoes, corn, stuffing, tomatoes dressed with mayonnaise, crackers, rolls, and ice cream,” in addition to canned olives.¹¹¹ Researchers concluded that “the only people who became ill were the ones who had eaten the canned ripe olives” from the hors d’oeuvres spread.¹¹² Further interviews with victims found that “several commented that the olives had not tasted quite as they had expected and yet they ate them.”¹¹³ Researchers tested the olives in a laboratory, then gave samples of the olives to animal test subjects, and all the animals died from poisoning.¹¹⁴ As the tallies of sick and dead in California and across the nation mounted, the NCA and the California Olive Association began investigations into what went wrong in the canning process, only to find that the canners had practiced “deplorable laxity” in the sterilization and temperature regulation of their products, causing the state of California to issue a mandatory inspection process that would be paid for

¹¹⁰ Judith Taylor, *The Olive in California: History of an Immigrant Tree* (Berkeley: 10 Speed Press, 2000), 167.

¹¹¹ Taylor, 170.

¹¹² Ibid.

¹¹³ Taylor, 171.

¹¹⁴ Ibid.

through a tax on canneries, but the damage had already been done.¹¹⁵ Americans were again increasingly hesitant to purchase processed goods, lest they too become victims to a lax, unregulated industry.

In fact, the canning industry had such a hard time recovering from the bad press about the olives that the National Canners' Association created its own quality investigation lab in 1913 and in 1918 spent over \$60,000 in a Harvard University study to investigate ptomaine and food poisoning in canned foods. Scientific reports sent to the media, such as the Harvard Study, were unable to undo years of negative publicity. Consumer questionnaires assembled by the Blackman-Ross advertising agency and hired by the NCA in 1919 showed that homemakers by and large believed that canners processed dirty and rotten food, causing a number of diseases, including the flu and cancer.¹¹⁶ They also believed that canned foods were indigestible. The tide did not turn for canned food manufacturers until the association launched a massive rebranding campaign in the early 1920s that targeted women's magazines and home economists and included an aggressive educational advertising campaign that outlined a new labeling and self-inspection system that would ensure quality control. Most importantly, canners emphasized how modern technology had transforming the traditional "art" of canning into an ordered, sanitary, and expert-driven scientific field, underscoring how the canning industry epitomized modernity. Their ads assured women that canned foods were safe, affordable, nutritious, and asked women to consider "the next time you call your grocer on that modern miracle, the telephone, and ask him to include in your next order, that other modern miracle, a can of vegetables."¹¹⁷ By

¹¹⁵ Taylor, 175.

¹¹⁶ "The Canner's National Advertising Campaign," *Canning Age* 1, no. 1 (January 1920): 8.

¹¹⁷ "The Canner's National Advertising Campaign," 9.

appearing to make their processes transparent, canners embraced the culture of science and used its authority to save the industry from the specter of death and sickness that haunted canned foods since the Spanish-American War scandal.

It was not just commercially canned foods, however, that were believed to be dangerous and a risk to the health of American families. Since the 1850's and the introduction of Mason Jars for home use, women were canning their own fruits and vegetables at home through several different kinds of canning processes. Open kettle canning, the earliest form of home canning, was typically used for acidic fruits and vegetables. This process was simple, and the steps included cleaning and slicing the fruit (or tomatoes), cooking the fruit with sugar, and then pouring the cooked mixture into clean, sterilized jars, making sure to pack the jars so as to remove all air bubbles.¹¹⁸

In 1915, the USDA and state extension services began promoting the Cold-Pack method of home canning, whereby home canners could pack cold fruits and vegetables, after blanching them in some cases, into sterilized containers and then cooking the jarred items in a tub full of hot water for a certain period of time.¹¹⁹ According to Mary B. Hughes, this method was “the simplest, most up-to-date method of canning fruits and vegetables,” and it was “indorsed [sic] throughout the country by canning experts and practical housekeepers.”¹²⁰ This process was a bit more involved, since it required homemakers to purchase a basin or tub large enough to submerge several quart sized jars—though most homes were already outfitted with a laundry

¹¹⁸ Fannie Farmer, *The Boston Cooking-School Cook Book* (Boston: Little, Brown and Co., 1921): 578.

¹¹⁹ Rae Katherine Eighmey, *Food Will Win the War: Minnesota Crops, Cooks, and Conservation during World War I* (St. Paul, MN: Minnesota Historical Society, 2010), 91. Farmer, 583. Iowa State College of Agriculture and Mechanic Arts Extension Service, *Home Economics Bulletin: Number 31—Canning by the “Cold-Pack” Method*, Ames, Iowa, 1922.

¹²⁰ Mary B. Hughes, *Everywoman's Canning Book: The A B C of Safe Home Canning and Preserving by the Cold Pack Method* (Boston: Whitcomb & Barrows, 1918), 1.

basin that held between 10 and 20 gallons of water— and because the process was approved for non-acidic vegetables and in some cases even meat products and soups, officials recommended certain time requirements for both blanching and cooking the jars.¹²¹ Canners had to keep a constant eye on the water to make sure it kept boiling, and women were instructed to “[c]ount the time for processing from the minute you hear the water boiling and bubbling. . . . [and] do not let the fire get low and the water stop boiling, for good material is ruined by careless processing.”¹²² Still, though the entire process took hours of structured boiling, experts claimed that the process was “so simple a child could do it.”¹²³ In *Food Will Win the War: Minnesota Crops, Cooks, and Conservation during World War I*, historian Rae Katherine Eighmey found that home economics students and clubs taught the Cold-Pack method and held canning contests. According to Eighmey, Boys and Girls Club members gave demonstrations of canning at the Minnesota State Fair, with winners “judged best in skill, speed and cleanliness,” who had “the best flavor, texture, and appearance.”¹²⁴ Oven Preparation was a variation of this Cold-Pack method where the wash basin was placed in the oven for the duration of the cooking time.¹²⁵

The problem was, however, that the cold-pack method was not fool proof. Careless or distracted canners could at best lose their entire product because of improper processing, or at worst could sicken or kill their entire family. As Mary Hughes explained, “[e]very piece of fruit or vegetable, no matter how fresh, will have on its surface tiny, invisible microorganisms. . . .

¹²¹ Farmer, 587-588.

¹²² Hughes, 3.

¹²³ Eighmey, 92.

¹²⁴ Eighmey, 92.

¹²⁵ Maria Parola, *Canned Fruit, Preserves and Jellies: Household Methods of Preparation*, (Chicago: The Saalfeld Publishing Company, 1917).

[and] if living organisms remain in the jars, they increase rapidly, causing food to decay and spoil.”¹²⁶ At the same time women were told both that home canning was dangerous if women were not educated and careful enough with their cooking times and temperatures, and also that home canning was still safe and easy, provided that home canners followed the explicit instructions of home economists and other experts.

Out of the woodwork came chemists, bacteriologists, physicians, nutrition experts, and home economists who were bent on finding out exactly what foods and food products were safe and whether home canning truly was a fruitful endeavor. In the 1920’s, Americans were still getting sick from eating both their favorite foods and the bevy of fruits and vegetables that experts like Mary Hugues claimed were instrumental in preventing “eighty-five per cent of all human ailments.”¹²⁷ Hughes and other professionals recommended that women either can enough of their own vegetables “so that the family will have a jar of fruit and a jar of vegetables every day when fresh supplies cannot be obtained,” or that they purchase such commercially canned vegetables during the winter months rather than going without the vitamins and minerals found in produce.¹²⁸ To be sure, scholars like Harvey A. Levenstein have deemed the period of 1915-1930 to be the era of “The Newer Nutrition,” an off shoot of what nutrition scientist Elmer McCollum’s called “the Newer Knowledge of Nutrition,” in which physicians and researchers found that vitamins and minerals were critical in warding off certain diseases and sicknesses.¹²⁹

¹²⁶ Hughes, 4.

¹²⁷ Hughes, 7.

¹²⁸ Ibid.

¹²⁹ Harvey A. Levenstein *Revolution at the Table: The Transformation of the American Diet* (New York: Oxford University Press, 1988), 147-148. For more about McCollum, see Harvey A. Levenstein, *Fear of Food: A History of Why We Worry About What We Eat* (Chicago: The University of Chicago Press, 2012), 79-93. For more on this culture of vitamins, see Rima Apple, *Vitamina: Vitamins in American Culture* (New Brunswick, NJ: Rutgers University Press, 1996).

As a result, it was clear to the professionals that science would be the savior of the American people—it would make their food supply safe and ensure that each plate of beef tongue and mashed potatoes, with a side of canned string beans, was nutritious and could be eaten without anxiety.

CHAPTER TWO: FIGHTING FEAR WITH SCIENCE: SCIENTIFIC INVESTIGATIONS INTO THE CANNING PROCESS

There is no higher art than that which tends toward the improvement of human food.

—Henry Ward Beecher, *American Food Journal*

In 1926, Chicago Health Commissioner H. N. Bundesen contributed an insightful article about the American public's obsession with health to *Canning Age*, the industry journal for canned food manufacturers. In "A Health Commissioner's Views on Canning," Bundesen was puzzled that "the canning industry isn't a success."¹ "The greatest asset in life," he argued, "is health. There is nothing more important in the world to you than your health."² After World War I, the American canning industry set out to make commercially canned goods synonymous with good health by producing products that were both safe from the threat of food poisoning, and full of life-giving vitamins and minerals. The industry joined forces with scientists—bacteriologists, chemists, and nutritionists—in order to develop concrete scientific evidence and establish the scientific authority that they could use to re-educate Americans about the benefits of a diet that included canned foods. Canners wanted to use the findings of experts to their advantage, and highlight the healthfulness and safety of canned foods in various media outlets. Getting researchers and scientists on board was of paramount importance. "We hear many lecturers telling us about the importance of food; how necessary it is to eat vegetables," Bundesen explained.³ At this time, the American public was faced with a barrage of health claims and concerns about lack of vitamins and minerals in the diet, a problem that could only be rectified if Americans ate more produce. Americans were also inundated with "big headlines in

¹ H. N. Bundesen, "A Health Commissioner's Views on Canning," *Canning Age* 7, no. 6 (May 1926): 501.

² Ibid.

³ Ibid.

the newspapers,” of botulism outbreaks, with people jumping straight to the conclusion that “one shouldn’t eat canned stuff because of the danger of getting botulism.”⁴ “What is the canning industry doing to advertise health?” he asked.⁵ He himself had admittedly spoken out against the health of canned foods, only to become reeducated once he “looked up literature like McCollum’s and similar books by scientists who really know.”⁶ Bundesen’s evolution from a skeptic to a believer in the nutritional value of canned foods was precisely the same type of transformation that the National Canners Association needed the American public to experience. Bundesen closed with an exasperated plea to canners: “If you know these things why don’t you tell the world about them so that the world will know them? And if you don’t know them why in the hell don’t you get into a business that you know something about?”⁷

First, canners needed to focus in on the issue of food poisoning, which it did with the assistance of a new field of research, bacteriology. The Society of American Bacteriologists (SAB) was founded in 1899 as a means to separate bacteriologists from the umbrella of the American Public Health Association and therefore give them a more autonomous and focused platform from which to impart discoveries and issues within the realm of microbiology. In his address given at the first conference of the SAB, MIT professor William Sedgwick, one of the founders of the organization and its president, marveled at how scientists demystified the “magic, mystery, [and]...alchemy” of the “microscopic world [that] still sat in the shadow of

⁴ Bundesen, 502.

⁵ Ibid.

⁶ Bundesen, 502. This McCollum is Elmer McCollum, the biochemist who was responsible for the “newer knowledge of nutrition.”

⁷ Ibid.

darkness,” and replaced it with scientific law.⁸ The first volume of the *Journal of Bacteriology* was published in 1916, and its first article was, again, an introduction to the field by Dr. Sedgwick. In his “The Genesis of a New Science—Bacteriology,” written to legitimize the new journal, Sedgwick addresses the practical implications of studying microscopic bacteria. “[T]he revelations of the microscope and the lessons of bacteriology,” he began, “have so direct, so intimate, and so fateful association with almost every aspect of the conduct of our daily and personal life—with food and drink, with health and disease, with life and death—that they gain in intimacy what they lose in grandeur.”⁹ While other scientific fields may have brought to light the mechanizations of life on a large scale, bacteriology was almost more important because it shed light on the invisible. Most importantly, however, was bacteriology’s promise of ensuring that a modern, industrialized America could be one of health.

The scientific and medical community, along with the general public, was greatly concerned with food poisoning, especially since in many cases food poisoning was a largely preventable illness. Many segments of the medical community took part in the discussion of the effects of the illness and how to identify its symptoms, which oftentimes resulted in spirited debates over what food items were the real culprits. For example, the *American Journal of Pharmacy*, declared to be the “record of the progress of pharmacy and the allied sciences,” reprinted articles from the *Journal of the American Medical Association* (JAMA) concerning botulism because of its threat to America’s food supply. The short article, “Botulism: I,” which was essentially a compilation of articles concerning food poisoning throughout 1919 in the *JAMA* gave readers a concise overview of the illness and its causes but gave two sides to an

⁸ William T. Sedgwick, “The Origin, Scope and Significance of Bacteriology,” *Science* 13 (January 25, 1901): 122; 128.

⁹ William T. Sedgwick, “The Genesis of a New Science—Bacteriology,” *Journal of Bacteriology* 1, no 1 (January 1916): 4.

important debate on whether was the risk of botulism more prevalent in home canning or commercial canning. The debate in the *JAMA* was between Stanford University scientist Georgina S. Burke and Dr. John Weinzirl. Dr. Weinzirl argued that commercially canned goods were safe, based on research financed by the NCA at Harvard University under the direction of M. J. Rosenau. Weinzirl's entire piece was published in the *Journal of Medical Research* in January of 1919 and was his dissertation for his doctorate in Public Health. In his conclusion of the thesis, he affirmed that, "Food poisoning organisms such as *B. botulinus*, *B. enteritidis*, etc., are not found in commercial canned foods."¹⁰ Burke, however, saw this report as grossly negligent. She argued that "when Weinzirl says that '*B. botulinus* is not found in commercial canned food,' he means that it is not found in unspoiled factory canned foods. The consumer is likely to draw the conclusion that *B. botulinus* is never found in factory canned foods."¹¹ Burke, along with Ernest Dickson, had published "A Method of Isolating Bacillus Botulinus from Infected Materials," a result of research they conducted at Stanford in which they successfully isolated the bacteria *B. botulinus*, which they hoped would help future diagnoses.¹² Burke, as someone who worked closely with celebrated bacteriologist Ernest Dickson, saw evidence of infected commercially canned foods in their work. She cited several cases of which she had "personal knowledge," that were reported to the US Bureau of Chemistry, and admonished that it was "unfortunate that an expert working for the National Canners Association should not have heard of this case or, having heard of it, should ignore it."¹³ Her indictment of the Weinzirl

¹⁰ John Weinzirl, "The Bacteriology of Canned Foods," *Journal of Medical Research* 39, no. 349 (January 1919): 411.

¹¹ Georgina S. Burke, "Spoiled Canned Foods and Botulism," in *JAMA* 73, no. 14 (October 4, 1919): 1078.

¹² Ernest C. Dickson and Georgina E. Burke, "A Method of Isolating Bacillus Botulinus from Infected Materials," *JAMA* 71, no.8 (August 17, 1918): 518-521.

¹³ Burke, 1079.

report, and the Harvard investigation financed by the NCA was hard-hitting, but based on a rational outlook on the infallibility of industry. Still, the *American Journal of Pharmacy*, instead of issuing its own indictment of the canning industry argued that, “canned foods implicated in botulism poisoning shows that the spores of *B. botulinus* pass through the ordinary processes of household canning without destruction.”¹⁴ The canned foods industry needed a clear cause of food poisoning, and early investigations were lacking.

Further investigations, like the frequently cited *Food Poisoning* by bacteriologist Edwin Oakes Jordan, revealed that though “most attacks of food poisoning are usually of a slight and apparently temporary nature. . . the cumulative effect may be vicious.”¹⁵ Based on a 1913 report on mortality from the New York City Department of Health, the mortality rate was on the rise, and Jordan’s hypothesis was that food poisoning may have a more degenerative effect on bodily organs than researchers thought.¹⁶ In fact, he argued that outbreaks of food poisoning were being kept under wraps by the press, and based on his own research, he found evidence of several large unreported outbreaks. According to Jordan, “[p]robably several thousand outbreaks of food poisoning in families and larger groups, affecting at least 15,000-20,000 persons, occur in the United States in the course of a year.”¹⁷ Based on his analysis, almost half of the cases of food poisoning were from unidentifiable causes—of the 1,032 total cases from October 1913 to October 1915, “no cause” was documented for 445, and only 125 came from canned fish or

¹⁴ “Botulism,” *American Journal of Pharmacy* 92, no. 1 (January 1920): 28.

¹⁵ Edwin Oakes Jordan, *Food Poisoning* (Chicago: University of Chicago Press, 1917), 2.

¹⁶ Jordan, *Food Poisoning*, 3.

¹⁷ Jordan, 4.

canned vegetables.¹⁸ Canned foods, he believed, had a bad reputation that stemmed from “popular prejudice and tradition than of any careful inquiry.”¹⁹ In fact, Jordan turned to the National Canners Association for his evidence, using the NCA’s annual internal investigations of supposed canned food poisonings, none of which the NCA found to be “based on sound evidence.”²⁰ But the NCA was interested in new research that would potentially exonerate canned foods from the specter of botulism, and with the help of physicians and scientists in the 1920s waged its own war against the deadly menace.

“Food poisoning” in canned foods was not just restricted to bacterial poisoning. There was fear that both the receptacle the food was preserved in—tin especially—and the chemicals sometimes used in the canning process, like sodium benzoate, actually poisoned the food. Jordan acknowledged that even the smallest concentration of acid could break down tin, and that researchers had found evidence that the tin leached into the fruits and vegetables over time.²¹ Concern over tin leaching led some manufacturers to line their cans with enamel in order to reduce this, and Jordan noted that “[e]ach new irritant, even in small quantity, may add to the burden of organs already weakened by age or previous harsh treatment.”²² For Jordan, only the old and sick should be concerned about the leaching of tin in canned foods. He saw no cause for alarm over the vessel itself.

¹⁸ Jordan, 5. Information comes from Table I “Food Poisoning in the United States, October, 1913, to October, 1915.”

¹⁹ Ibid.

²⁰ Jordan, 8.

²¹ Jordan, 29.

²² Jordan, 30.

Food preservatives, according to Jordan, were a bit more controversial. In 1908, the well-respected Chief of the USDA's Chemistry department and later contributor to *Good Housekeeping*, Dr. Harvey W. Wiley, believed that sodium benzoate caused "a very serious disturbance of the metabolic functions, attended with injury to digestion and health." Research done over the next five years disproved Wiley's assertions, as scientists found that it took large doses of sodium benzoate to produce any noticeable deleterious effects.²³ Still, Jordan was cautious, and argued that even longstanding preserving spices such as cinnamon and cloves could potentially be harmful if used repeatedly over time.²⁴ His concern was that abandonment of moderation had long-lasting effects. "For aught we now know to the contrary," he argued, "the relatively high death-rates from degenerative changes in the kidneys, blood vessels, and other organs may be in part caused by the use of irritating chemical substances in food."²⁵ Still, Jordan was more concerned with the use of tin and chemicals in food preservation because it might have a cumulative effect on the body. Avoiding these body contaminants was easy—in the absence of prohibitory laws, those concerned were instructed to consume "food as far as possible in a fresh condition."²⁶

Avoiding bacterial contamination in food was a bit trickier—oftentimes, consumers would have no idea which meal or foodstuff was the culprit. If a consumer did take care to avoid canned food at home, meals eaten away from the home were problematic and suspicious because the diner would not necessarily know how the food was prepared. What was even more frightening, however, was that major communicable diseases could be caught through food—

²³ Jordan, 34-35.

²⁴ Jordan, 37.

²⁵ Jordan, 39.

²⁶ Jordan, 40.

tuberculosis, typhoid, cholera, diphtheria, scarlet fever—not just lesser-threatening “paratyphoid” illnesses which resulted in severe gastro-intestinal distress followed by recovery.²⁷ “The best established case of poisoning by means of bacterial products taken in with the food,” Jordan noted, “is the serious malady known somewhat inappropriately as botulism.”²⁸ Botulism, however, could be avoided by proper preparation. According to Jordan, “[p]ractically all the reported cases of botulism have been caused by food which has been given some sort of preliminary treatment, as smoking, pickling, or canning, then allowed to stand for a time, and *eaten before cooking*.”²⁹ For intoxication to occur, Jordan argued that “a rather unusual set of factors must co-operate.” He concluded that first, the bacteria had to be actually present in the food in question. Second, the preparation of the food would have to be insufficient to destroy the bacteria. Third, this food that was improperly prepared would have to be held at a shorter amount of time than recommended and “under the right conditions of temperature and lack of oxygen.”³⁰ Finally, consumers would have to consume the food without cooking the food before serving.³¹

In other words, for Jordan, there needed to be a confluence of circumstances for botulism to be a threat at the average American’s dinner table. Commercially canned foods were less

²⁷ For more on communicable diseases and food, see Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge: Harvard University Press, 1998).

²⁸ Jordan, *Food Poisoning*, 86. Jordan remarks that “botulism” was an inappropriate name because the term “Botulus” is Latin for sausage, though botulism was not only found in sausage. According to Jordan, German writer Justinus Kerner coined the term after several outbreaks in Germany in the late 19th-early 20th centuries and traced the illness back to bad sausage. Jordan, 86-88. The official naming of the bacteria was done by Van Ermengem, a Belgian scientist who named the bacteria *B. botulinus*. Jordan, 92. For more on the scientific history concerning the early days of botulism, see Ernest Dickson, *Botulism: A Clinical and Experimental Study* (New York: The Rockefeller Institute for Medical Research), 1918.

²⁹ Jordan, 93-94. Italics in original.

³⁰ Jordan, 94.

³¹ Ibid.

likely to produce such results according to Jordan, but because of the lack of adequate technology in the typical home, these conditions were often found in home food preservation.³² Another much referenced investigation done by Stanford physician Ernest C. Dickson and published by the Rockefeller Institute for Medical Research in 1918, *Botulism: A Clinical and Experimental Study*, verified Jordan's hypothesis concerning home canning.³³ Like Jordan, Dickson found that official reports of botulism cases were scarce in the United States, but he believed that many more people actually experienced infection but were misdiagnosed. Part of this was because botulism could have been confused with other illnesses, like polio, syphilis, poisoning from ingesting wood alcohol or rotten fish, and even hysteria.³⁴ In most cases, victims did not have the severe gastrointestinal distress, but instead went straight to aural or muscular symptoms, including loss of vision, involuntary muscle movements and spasms, as well as rapid degeneration of muscular strength, and loss of vocal abilities.³⁵ Oftentimes, investigators would only suspect botulism or food poisoning when animals also died from eating the same food. For example, Dickson summarized a case of poisoning from 1907 in California in which two people and 9 chickens died from eating contaminated pork and beans. According to Dickson, their symptoms were not gastrointestinal—two men who got sick but recovered had marked difficulties seeing because of double vision and ptosis, or droopy eyelid, and they gradually lost

³² Jordan, 95.

³³ Ernest Charles Dickson, MD. *Botulism: A Clinical and Experimental Study* (New York: Rockefeller Institute for Medical Research), 1918.

³⁴ Dickson, *Botulism*, 49-50.

³⁵ Jordan and Dickson speak of this. Dickson, *Botulism*, 39-46. Reports of motor and speech difficulties from food poisoning were reported in popular medical weeklies like *Medical Record*, which posted (and was reposted in state medical journals across the country) an investigation by W. S. Bryant who documented two such cases. See W. Sohier Bryant, MD, "Deaf-Mutism and Ptomain Poisoning" *Medical Record*, 68, no. 8 (August 19, 1905), 292-295.

muscular fitness and motor skills.³⁶ The outbreak was reported as botulism not only because of the symptoms reported by the men which were typical symptoms of the infection, but because the animals died as well, which helped to rule out other causes. Similarly, Dickson compiled the records of an outbreak in March of 1915, also in California, where visually rotten canned apricots were served at the dinner of a family of five—the family reportedly threw out the half of the jar that was obviously rotten, but ate the rest of the jar. Three adults survived, while the two children under age 10 died, and an autopsy was inconclusive. It was the death of 7 chickens and the paralysis of the family dog, which also ate the contaminated apricots that led Dickson and others to determine that the cause of death was botulism.³⁷

Because of the difficulty of diagnosis, Dickson's research found that there were 64 official cases of botulism reported in the United States from approximately 1883 to 1918, resulting in 41 deaths.³⁸ Treatment for the infection at the time of publication, according to Dickson, was abysmal, since "the percentage of fatal cases is as great today as it was 50 years ago, and we know very little more concerning treatment than did the physicians of that time."³⁹ In a report published in the *American Journal of Public Health* in 1924, Dr. J. C. Geiger, an epidemiologist with the US Public health Service and professor at the University of Chicago, reported that number of botulism cases had increased to 129 reported outbreaks with 435 people becoming infected and 290 dying from food poisoning.⁴⁰ The inability to successfully treat the

³⁶ Dickson, *Botulism*, 15.

³⁷ Dickson, 23-24.

³⁸ Dickson, 51.

³⁹ Dickson, 52.

⁴⁰ J. C. Geiger, "The Status of Bacterial Food Poisoning in the United States," *American Journal of Public Health* 14 no. 4 (April 1924): 303.

infection, coupled with the fact that thousands of cases and outbreaks went unreported annually made botulism a formidable threat to public health. Dickson recounted the details of six cases of botulism in his report, all in California and from 1915 and 1916, and concluded that not only was botulism common—especially on the West coast—but that home canning was the culprit.⁴¹ For Dickson, “the method which is usually employed in canning vegetables and fruits at home is not efficient. . . . [because] the average housewife knows nothing concerning the habits of bacteria or of the significance of the spores in spore-bearing bacteria; and she has no conception of the importance of thorough sterilization.”⁴² Home canning simply could not heat the jar hot enough to kill bacteria, and the average homemaker could not get her utensils totally sterilized. Research into a 1927 case of botulism in California concerning Bartlett pears found that “[n]o boilers or containers large enough to sterilize properly any number of jars were found in the house; it is highly probable that the open kettle or hot-pack method was used for the preservation of the fruit.”⁴³ These methods were more traditional, and therefore were greatly problematic. In fact, in his conclusion, Dickson asserted that “the methods which are usually employed in the home-canning of vegetables and fruits are unsafe. . . .”⁴⁴ and “a campaign of education should be instituted in order that all who practise (sic) the home-canning of fruits and vegetables may be informed of the danger of infection with *Bacillus botulinus*.”⁴⁵ Dr. Geiger’s findings were concurrent with Dickson’s. In his report, the outbreaks in 1922 and 1923 mostly came from

⁴¹ In his short survey, he also found three different strains of *B. botulinus*. Dickson, 54.

⁴² Dickson, *Botulism*, 96.

⁴³ K. F. Meyer and J. B. Gunnison, “Botulism Due to Home Canned Bartlett Pears,” *Journal of Infectious Diseases* 45 no. 2 (August 1929), 136.

⁴⁴ Dickson, *Botulism*, 106.

⁴⁵ *Ibid.*

home canned foods, mostly green beans and corn, while only 3 cases came from commercially canned foods.⁴⁶ Did this mean, however, that new safer techniques of home canning should have been employed, or was it just that homemakers should know how to identify spoiled and potentially dangerous food? What Geiger had found was that even homemakers using the new “cold pack” method frequently promoted by women’s magazines and home economists could not guarantee a safe product. In his research, four individuals (three men and a “girl”) consumed cold pack canned green beans of which the “taste, odor, and appearance were stated to have been normal,” and all of the men died of botulism.⁴⁷ It appeared that not only did the newer techniques of canning fail, but perhaps even more troubling was that one could not always tell if the canned foods were spoiled by inspection. As far as these scientists were concerned, no home-canned foods were safe.

The USDA disagreed. In May 1909, the USDA published the eleven-page Farmers’ Bulletin 359, “Canning Vegetables in the Home,” compiled by J. F. Breazeale of the USDA’s Chemistry Bureau (Vegetable Physiological Chemistry division). This brochure was written “especially for the information of the farmers’ wives,” who were responsible for putting up surplus for later in the year.⁴⁸ Breazeale, and by extension the USDA assured the homemaker that she could “run a miniature canning factory in her kitchen,” instead of leaving “her most wholesome and nutritious vegetables to decay in the field, under the impression that it is impossible to keep them.”⁴⁹ In the pages that follow, Breazeale revealed to the farm wife, in

⁴⁶ Geiger, “The Status of Bacterial Food Poisoning in the United States,” 303.

⁴⁷ Geiger, 308.

⁴⁸ J. F. Breazeale, “Canning Vegetables in the Home,” *United States Department of Agriculture Farmers’ Bulletin* 359, May 1909, 2. *Scientific American* reprinted the Bulletin in September of 1909. See *Scientific American* Supplement 68, no. 1758 (September 11, 1909), 164-166.

⁴⁹ Breazeale, *Farmers’ Bulletin* 359, 5.

simplified terms, the science behind “the whole secret of canning,” which involved sterilization, boiling the vegetables several times, and keeping out air.⁵⁰ With this simple instruction, “she will be able with a little ingenuity to can any meat, fruit, or vegetable.”⁵¹ The bulletin heads off criticism of this lengthy process, arguing that while “this may seem new fashioned and unnecessary to some housekeepers,” especially those who would clamor “My grandmother never did this, and she was the most successful woman at canning that I ever knew,” previous generations of canners were not canning the “delicately flavored vegetables, such as lima beans, string beans, okra, asparagus, or even corn.”⁵² Most of the older generations of canners put up tomatoes, which were high in acid and therefore easier to can, and fruits, which could be protected from contamination by a high sugar content. In fact, according to Breazeale, “[e]very housewife knows how to can tomatoes.”⁵³ This knowledge of canning was so entrenched, especially on the farm, that Breazeale and the USDA had little doubt that most homemakers could can successfully. “If you follow the directions here given carefully, you will have no difficulty whatever,” he assured readers.⁵⁴ Breazeale did not, however, in all of his confidence in her canning abilities, instruct the canner of the dangers of food poisoning. Even under the last section, “CAUTIONS,” Breazeale did not reinforce the need for being safe for the health of her family, nor did he address the symptoms or identifying characteristics of contaminated food—in fact, he never did this. The only thing Breazeale was concerned with was that discarding his careful recommendations would lead homemakers to lose part of their surplus.

⁵⁰ Breazeale, 7.

⁵¹ Ibid.

⁵² Breazeale, *Farmers' Bulletin* 359, 8.

⁵³ Breazeale, 14.

⁵⁴ Breazeale, 16.

It was not just farm women who were still encouraged to safely can at home by representatives of the federal government and domestic science.. Girls attending high school across the US were also the targets of canning instruction. As historian Nancy Tomes has illustrated in *The Gospel of Germs: Men, Women, and the Microbe in American Life*, home economists were the bridge between the science of bacteriology and the everyday housekeeper. In these extension service and high school kitchens, “[t]he elaborate protocols of canning mimicked the world of the laboratory.”⁵⁵ In 1914, home economics and domestic science teachers Edith Hall Forster and Mildred Weigley published *Foods and Sanitation: A Text-Book and Laboratory Manual for High Schools*. Forster and Weigley attempted “by experiments and many applications, to give an understanding of the scientific principles underlying such concerns as sterilization, home sanitation, and the preparation of food, choosing a proper diet for a healthy family and to improve certain bodily conditions, and how to efficiently use costly fuel to save time and money.”⁵⁶ It was their hopes that girls could learn the principles of sanitation and cleanliness by doing, not necessarily by lecturing, and therefore noted that “the work on bacteriology and canning may be omitted if desired.”⁵⁷ Like the Farmers’ Bulletin, *Food and Sanitation* was more focused on the actual process of successful and safe canning and in the absence of proper bacteriological and chemical knowledge the science of canning was made superfluous. Of course, it only made sense that one of their sources for the section on home canning was Bulletin 359.

⁵⁵ Tomes, 149.

⁵⁶ Edith Hall Forster and Mildred Weigley, *Foods and Sanitation: A Text-Book and Laboratory Manual for High Schools* (Chicago: Row, Peterson and Company, 1914), 3.

⁵⁷ Forster and Weigley, *Foods and Sanitation*, 4.

Forster and Weigley provided 21 experiments for students ranging from tests to determine why food spoils and under what conditions, which temperatures to use to sufficiently kill molds and bacteria, and cost-effectiveness projects to determine whether canning at home was financially viable.⁵⁸ *Food and Sanitation*, though it provided ample detail about the growth of bacteria and ways to kill it, did not emphasize the danger of eating infected food. Much like the Farmers' Bulletin, *Food and Sanitation* focused on how to sanitize the materials used, but neglected to give students and teachers the realities of food poisoning. Most of the discussion of the "dangers" in canning food simply referred to losing the fruit. Forster and Weigley recommended that canning jars were overfilled since "not filling the jar to overflowing may be dangerous, so far as the keeping of the fruit is concerned."⁵⁹ *Foods and Sanitation* was recommended by Columbia University Teachers' College, and added to the useful appendix at the back of *Teaching Home Economics*, published in 1919 and written by Columbia professors, and advertised as the "comprehensive, practical, helpful pedagogical manual," for one of "the most vitally important subjects in the curriculum."⁶⁰

Scientific research, however, suggested that the popular methods of home canning were not up to par in regards to sanitation and ensuring a safe product. The Director of the Hooper Foundation for Medical Research at the University of California, Dr. K. F. Meyer, explained in *The Scientific Monthly* that "extensive experimentation over the course of many years" had resulted in safe commercially canned food, and all of the cases of botulism since 1925 were from "improperly prepared home-canned food."⁶¹ According to research done by the USDA for 1917,

⁵⁸ Forster and Weigley, 46-59.

⁵⁹ Forster and Weigley, 55.

⁶⁰ Books Advertisement, *The American School Board Journal* 59, no 5 (November 1919): 94.

⁶¹ K. F. Meyer, "Prevention of Food Poisoning," *Scientific Monthly* 40, no. 6 (June 1935): 565.

women canned over 850 million jars of food, compared to the canning industry producing over one billion cans that same year. Thus, the sanitation of home canned food was crucial because every single one of those 850 million cans were possible carriers of botulism or other food borne illnesses.⁶² L. D. Bushnell, professor in the Department of Bacteriology at Kansas State Agricultural College, tested the “cold shock” method and published his results in the *Journal of Industrial and Engineering Chemistry* in June of 1918. His report, “The Influence of Cold Shock in the Sterilization of Canned Foods,” found that plunging blanched vegetables in an ice-cold water bath was not an effective method of reducing the amount of time the vegetables needed to be heated to kill bacteria. He conducted his research in response to “Home Canning Club Instruction to Save Fruit and Vegetable Waste,” published by the Office of Farmers’ Cooperative Demonstrations in 1915. In a series of 13 experiments, Bushnell found that quick steam followed by the cold submersion showed “that spores are not devitalized by cold shock and that blanching for rather long periods followed by cold dipping does not aid in sterilization.”⁶³ In fact, his research suggested that foods spoiled more after they were blanched in the canning process.⁶⁴ His ultimate conclusion was that guaranteeing the purity of home canned goods was nearly impossible—at times, cans that possessed “no doubt, a few organisms” did not spoil, while others that were canned properly became rancid.⁶⁵ All he could recommend was the inclusion of a bit of acetic acid, which prohibit the growth of spores. Without some kind of acid—and again, this was why canning tomatoes was a largely successful venture—Bushnell

⁶² This figure is cited in J. C. Geiger, et al. “The Epidemiology of Botulism,” *Public Health Bulletin No. 127*, September, 1922, 102 (footnote).

⁶³ L. D. Bushnell, “The Influence of Cold Shock in the Sterilization of Canned Foods,” *Journal of Industrial and Engineering Chemistry* 10, no. 6 (June 1918): 433.

⁶⁴ Bushnell, 434.

⁶⁵ Bushnell, 436.

could not verify the safety of home canning and cast a critical eye towards the educational manuals produced by the federal government.

Fred W. Tanner, of the Department of Bacteriology at the University of Illinois argued that while “canning in the factory has never been on a sounder basis than it is today. . . . The situation for home-canned foods, however, is not so fortunate.”⁶⁶ Quoting fellow scientists and AJPH contributor Carl Fellers, Tanner indicted “[t]he canning guides, bulletins, circulars, and recipes distributed by state agencies, magazines, women’s clubs, and manufacturers of canning equipment,” for their “erroneous statements and faulty methods which have been directly responsible for several outbreaks of botulism.”⁶⁷ Tanner provided a table of botulism outbreaks over a four year period, from 1929 to 1933, a time period of growing poverty with the Great Depression and an increase home canning due to a need to conserve, and of a total of 44 documented outbreaks, only two came from commercially canned shallots and Antipasto, two Italian imports. 42 of the outbreaks came from a variety of home canned vegetables and meats.⁶⁸ Tanner’s vitriol was aimed at home economists, of whom he argued were poorly educated and were therefore the real criminals in this public health disaster. “If graduates of schools of home economics and others who consider themselves capable of recommending procedures for the home-maker do not recognize all bacterial knowledge,” he argued, “they should be forced to do so by those whose duty it is to conserve the public health,” adding that it “would be unfortunate to have to resort to legal procedures” to stop these abuses.⁶⁹ Home economists, he explained,

⁶⁶ Fred W. Tanner, “Home Canning and Public Health,” *American Journal of Public Health* 25, no. 3 (March 1935): 301.

⁶⁷ Tanner, 301.

⁶⁸ Tanner, 305-306.

⁶⁹ Tanner, 303.

“continue to give in courses and publications advice which is unsound,” and projected that the situation would not get better unless “misinformation is stopped at its source.”⁷⁰ He maintained that with the exception of the pressure cooker, no method of home canning had been shown to properly preserve non-acidic foods, with oven canning being the most dangerous because of the inability to regulate the temperature.⁷¹ Tanner claimed that only ten of forty-five states actually published bulletins that contained “sound bacteriological knowledge.”⁷² He added that the general fear of canned food—home canned foods—was “justified, for every year inadequately processed home-canned vegetables take their toll of human life.”⁷³

Ernest Dickson also came out against popular canning methods—especially the “cold-pack” method. Dickson published “Botulism, the Danger of Poisoning from Vegetables Canned by the Cold Pack Method,” in the *Journal of the American Medical Association*, arguing that even though this method was approved by the USDA, his research concluded that spores were not killed in the cold-pack process, and that the process was not a fail-safe sanitation method.⁷⁴ He also confirmed that “it is unsafe to eat or even taste home-canned products before they have

⁷⁰ Tanner, 312. Fellers was more gentle with the USDA and home economists, arguing that “much credit should be given to the Bureau of Home Economics, U. S. Department of Agriculture, for their courage in adopting safe and sane methods of canning and distributing them in bulletin form to replace former ones which were decidedly objectionable from a public health viewpoint. Carl Fellers, “Public Health Aspects of Food Preservation,” *American Journal of Public Health* 17, no. 5 (May 1927): 471. *Canning Age* also published addresses given by Fellers to the American Public Health Association on the subject of food poisoning and canned foods. See C. R. Fellers, “Canned Foods and the Public Health,” *Canning Age* 9, no.8 (July 1928): 612-613.

⁷¹ Tanner, 308. According to Ruth Cowan Schwartz, gas was most commonly used in cooking by around 1930, though millions of Americans still used coal and wood stoves. Less than one million households used electricity for cooking. See Ruth Cowan Schwartz, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* (New York: Basic Books, Inc., 1983), 91.

⁷² Tanner, 310.

⁷³ Tanner, 312.

⁷⁴ Ernest C. Dickson, “Botulism: The Danger of Poisoning from Vegetables Canned by the Cold-Pack Method,” *JAMA* 69, no. 15 (September 22, 1917): 966-968.

been boiled.”⁷⁵ Dickson also drew a direct correlation between the increase in cases of food poisoning and the increase in the prevalence of home canning during World War I for conservation measures.⁷⁶ Several journals reprinted Dickson’s controversial findings, and the article even found a small blurb in *The Journal of Home Economics*, whose editors responded by reprinting a USDA press release concerning the safety of canned foods.⁷⁷ Despite the suggested caution brought forth by concerned members of the scientific community, the USDA assured Americans that home canning was safe. The USDA sent out a press release in 1917 declaring that “There is no danger that the type of food poisoning known as ‘botulism’ will result from eating fruits or vegetables which have been canned by any of the methods recommended by the United States Department of Agriculture, *provided such directions have been followed carefully.*”⁷⁸ (emphasis mine). The methods, according to the USDA, were ultimately safe—backed by intensive scientific research, and detailed enough that any homemaker should have been able to successfully can fruits and vegetables with confidence. According to the USDA, “sterilization is accomplished by the following processes: cleansing, blanching, cold dipping, packing in clean, hot jars, adding boiling water, sealing immediately, and then sterilizing the sealed jars at a minimum temperature of 212 degrees Fahrenheit for one to four hours.”⁷⁹ Current research, however, actually suggested that the process was not that simple—the science behind the growth of bacteria was not that clear, and each seemingly necessary step in the canning

⁷⁵ E. C. Dickson, “Botulism: A Further Report of Cases Occurring in the Pacific Coast States,” *Archives of Internal Medicine* 22, no. 4 (October 1918): 495.

⁷⁶ E. C. Dickson, “Botulism: A Further Report,” 484.

⁷⁷ “Louise Stanley, “Recent Contributions to our Knowledge of Food Preparation: Canned Foods,” *Journal of Home Economics* 9, no. 12 (December 1917): 544-545. “Editorial: Home Canned Foods and Botulism,” *Journal of Home Economics* 9 no. 12 (December 1917): 578.

⁷⁸ “Home Canned Food Safe,” *American Journal of Public Health* 8, no. 3 (March 1918): 196.

⁷⁹ *Ibid.*

process outlined by the USDA was being looked at with skepticism by the larger scientific community.

Though he may have been at odds with the USDA, Dickson, as well as J. C. Geiger, the Epidemiologist of the US Public Health Service, and K. F. Meyer, of the University of California, were commissioned by the Surgeon General and the National Canners Association to compile a report discussing all aspects of botulism infection. Such a commission was necessary because “the need for a better understanding of the term ‘food poisoning’ . . . was indicated by the importance of assigning correct causes and the difficulty which had been experienced on account of confusion in diagnosis.”⁸⁰ In other words, so many cases of botulism and other food poisoning were going undiagnosed that it was impossible to actually determine the overall threat to the America public. In Public Health Bulletin No. 127, “The Epidemiology of Botulism,” these three scientists making up a “botulism commission,” synthesized current investigations of outbreaks and compiled the latest scientific research, ending with their conclusions and recommendations for food safety. They determined that all canned food should be boiled for 30 minutes or more after opening to kill the bacteria (which undoubtedly also killed any flavor as well) before consuming.⁸¹ “Botulism,” the scientists assured, “can be prevented, provided the public is fully acquainted with the facts. In this connection it is advisable not only to point out the sources and the character of the danger, but also to restore confidence in the use of canned foods.”⁸² Using scientific objectivity, Geiger, Dickson, and Meyer concluded that the only way to put a stop to reoccurring outbreaks was to educate consumers and homemakers in

⁸⁰ “Food Poisoning” in the *Annual Report of the Surgeon General of the Public Health Service of the United States*, Document No. 2918, Washington: Government Printing Office, 1922, 16.

⁸¹ J. C. Geiger, et al. “The Epidemiology of Botulism,” *Public Health Bulletin No. 127*, September, 1922, 101.

⁸² Geiger, “The Epidemiology of Botulism,” 102.

bacteriology—even an elementary understanding of the way that bacteria grows would help Americans plate healthy meals.

As far as the threat in commercially canned goods, the commission found that evidence of *B. botulinus* spores were rare, representing an “insignificant part” of the total cases of botulism, but that they where found was in lesser-grade canned goods.⁸³ Mainly, the scientists concluded, this came from canners who simply did not heat the foods up well enough during processing. Optimistically—probably because of their association with the NCA—the commission concluded that “the danger from this source has now been fully recognized and scientific canning methods are replacing empiricisms.”⁸⁴ They implied that industry standardization, which was at the same time being promoted by the NCA, would eradicate the threat of botulism in commercially canned goods altogether.

Among leaders in the American canning industry, publicized cases of food poisoning and stories of canned food contamination caused a public relations nightmare in the early twentieth century. Carl Fellers remarked that there was “a deep-seated prejudice against canned foods,” and that “[t]housands of cases of illness have been wrongfully attributed to them.”⁸⁵ According to the *American Food Journal*’s “Annual Canned Foods Review” for the year 1915, “there existed about the most depressed condition in the canned foods market ever known since the industry assumed a status of any commercial importance.”⁸⁶ Canned goods were as a whole not moving off of domestic shelves, causing local grocers to stop purchasing wholesale canned goods, and there was little overseas or South American demand, causing prices to drop. By the

⁸³ Geiger, 115.

⁸⁴ Geiger, 106-107.

⁸⁵ Fellers, “Public Health Aspects of Food Preservation,” 472.

⁸⁶ Canticle, “Annual Canned Foods Review,” *American Food Journal* 11, no 1 (January 1916): 22.

end of 1915, however, canners were more optimistic about future sales, hoping that a quick end to the war in Europe would bring more sales.⁸⁷ Part of this optimism came from new scientific research that suggested that the canning industry had improved sanitation and food processing by leaps and bounds, making their product seem exponentially more safe. Canners would need to disseminate this information far and wide in order to make the industry competitive again.

For canners, educating the consumer was the only answer to their problem. In April 1916, the Assistant Sales Manager for the American Can Company, George W. Cobb, urged the industry to work steadfastly in educating from the top-down: physicians, domestic scientists, newspapers, and the consumer. “We must remember that the so-called educated people of this country—your friends and mine—are ignorant in so far as canned foods are concerned,” he argued.⁸⁸ Cobb recommended canners promote the sanitation of the factory and the food itself, calling the modern process “evolutionary,” a natural product of American ingenuity.⁸⁹ Aggressive advertising, going as far as making sure that people who pass by the factory were aware of its positive attributes, perhaps through a sort of report card billboard, was his main educational tactic. “Advertising,” Cobb asserted, “like charity, begins at home.”⁹⁰ The most significant part of this focus on consumer education was for canners to focus on the superiority of commercially canned foods that was ushered in by the bacteriologists, chemists, physicians, and technological innovators that made efficient sanitation possible. Members of the public health community agreed. In “Advertising as a Force in Public Health Education,” Jules Schevitz argued that advertising was the perfect medium for the distribution of health

⁸⁷ Canticle, 23.

⁸⁸ George W. Cobb, “Educational Needs of the Canner,” *American Food Journal* 11, no 4 (April 1916):156.

⁸⁹ Cobb, 156.

⁹⁰ *Ibid.*

educational material because a health campaign was “essentially a selling campaign, the article we offer for sale being health.”⁹¹ There was a delicate balance, however, to be achieved in advertising for public health. Schevitz recommended that health care providers present “truthful information in attractive form; second, it must be so distributed that it will reach large numbers of people; and third, the distribution must be of such a nature that it will reach these persons at a time when they are in a mood to receive our message.”⁹² The printed advertisement, according to Schevitz, was the ideal medium for health advertising for it “possesses the qualities of novelty, attractiveness and cleverness,” and without these aspects, “our methods are wasteful and inefficient.”⁹³

Clearly, there were significant problems in the canning industry that would not be easily swept under the rug, and the canners looked to a well-known researcher to be their voice in these matters. Willard D. Bigelow, speaking before the American Public Health Association, laid out his concerns along with recommendations for canners to make changes to their processing to ensure a safer quality product. The National Canners Association employed Dr. Willard D. Bigelow as the head of their research lab. Bigelow had worked under Harvey Wiley in the USDA, and was one of the witnesses in the canned food scandal following the Spanish American War. For Bigelow, the main issue facing canners was sterilization and the capacity for industrial canners to develop a standardized process that would eliminate risk of contamination. Bigelow called for a comprehensive industry study to be done so that scientists and manufacturers could better understand the bacteriology of canned foods. He argued that “[the] question of canned

⁹¹ Jules Schevitz, “Advertising as a Force in Public Health Education,” *American Journal of Public Health* 8, no. 12 (December 1918): 916.

⁹² Schevitz, 918.

⁹³ Schevitz, 919.

foods as a possible source of food poisoning has received practically no attention at the hands of scientific men. Many statements regarding the matter have been made in the popular press. . . . [but] owing to the fact that canned foods are handled largely by machinery, there is not as great a chance of their being contaminated.”⁹⁴ Even though scientists had been studying food poisoning and bacteria, their findings were not being made part of the general social consciousness. He mentioned the fact that Dr. Milton Rosenau at Harvard University was heading one such study, but argued that further research was still needed. Because food poisoning was a public health issue, and was largely preventable, it was worthy of significant financial investment by canners and state departments of agriculture. In a later address, Dr. Bigelow took pride in the fact that “the old order in which the processing of canned foods was a matter of formula followed blindly is being replaced by scientific knowledge.”⁹⁵ Exact temperatures had replaced “the experience of practical workers,” which ensured streamlined production and less canning failure.⁹⁶ The laboratory of the NCA had performed studies on temperature and length of time for heat penetration in relation to the growth of spores and had distributed that information to all Association canners and in such journals as the *Journal of Infectious Diseases*.⁹⁷ Dr. Bigelow also argued that a more systematic method of labeling canned foods was needed, but the ultimate focus of his report was centered upon the imperative nature of more research and the distribution

⁹⁴ Willard D. Bigelow, “Problems of Canning Operations,” *American Journal of Public Health* 8, no. 3 (March 1918): 214.

⁹⁵ W. D. Bigelow, et al. “Revised Report of the Committee on Problems of Canning,” *American Journal of Public Health* 12, no. 7 (July 1922): 591.

⁹⁶ Ibid.

⁹⁷ Bigelow, “Revised Report,” 592.

of that research.⁹⁸ Bigelow wanted an end to the “exaggerated impression regarding the prevalence and danger” of botulism and food poisoning, adding that “the outbreaks that have occurred have been due to food canned in the home.”⁹⁹ For Bigelow, the culprit was clear. Scientific evidence had concluded that commercially canned foods were held at high temperatures for a longer period of time, and there was just no way for housekeepers to compete.

The National Canners Association took full control of this situation near the end of the World War I. First, the canners wanted to harness the power of science by joining forces with scientists, chemists, and bacteriologists to put canned food on the course towards recovery. In his address before the Food and Drugs Section of the American Public Health Association in October of 1917, Henry Burden proclaimed that “[t]he food canning industry of the United States has never been so efficiently organized to produce a maximum of satisfactory and scientifically supervised product as at the present.”¹⁰⁰ Burden estimated that nearly 70 percent of all the “hermetically sealed and sterilized foods produced yearly in the United States” were packed by a canner that was a member of the National Canners Association.¹⁰¹ As a result, it looked like all of the major canners were on board with making industry standards and quality control systems.

The NCA also financed (and promoted in both trade publications and food journals) a study to debunk the presence of ptomaines, or “putrid organic matter [specifically proteins] that

⁹⁸ Bigelow, “Problems of Canning Operations,” 215. More on the debate on food labeling will be found in Chapter 3.

⁹⁹ Bigelow, “Revised Report,” 593.

¹⁰⁰ Henry Burden, “Present Status of the Preservation of Food by Canning and Possibilities of Increase,” *American Journal of Public Health* 8, no. 3 (March 1918): 195.

¹⁰¹ Ibid.

has decomposed past the point at which it would be used as food,” once and for all.¹⁰² The problem, according to the editor of the *American Food Journal*, H. E. Barnard, was that physicians would label any kind of sudden onset gastrointestinal illness as one resulting from ptomaines, yet, “[c]anned goods are not ptomaine producers.” The NCA financed the study performed by Harvard researcher Milton Rosenau with a generous \$20,000/year for three years.¹⁰³ In 1919, Rosenau reported to the NCA that it was not ptomaines, but botulism that caused most typical canned good spoilage. According to *Saturday Evening Post* and *Canning Age* contributor James Collins, Rosenau called ptomaines “a myth. . . . Like “rheumatism,” it has served as a handy name for maladies that doctors did not understand until they had been studied more closely by scientists.”¹⁰⁴ In fact, Rosenau determined that “it has been impossible to find a poisonous ptomaine, and we believe there is no such thing as ptomaine poisoning in the sense in which chemists formerly understood that term.”¹⁰⁵ Rosenau then asserted that “canned goods are the safest foods that come to our table,” even though as Collins remarked, “[a]lmost as soon as Appert made it possible to put up food by his cooking and sealing method, the canner had to fight popular prejudice.”¹⁰⁶ The NCA ran with Rosenau’s endorsement, going forward in the

¹⁰² H. E. Barnard, “Facts and Fallacies About Ptomain Poisons,” *American Food Journal* 14, no. 4 (April 1919): 20. Of course, research in newspapers proves that despite Rosenau’s and the NCA’s attempts to kill off ptomaines, the American public would not forget. See Chapter 1.

¹⁰³ For more on Rosenau and this investigation into botulism, see Gabriella M. Petrick, “The Arbiters of Taste: Producers, Consumers and the Industrialization of Taste in America, 1900-1960,” PhD. Dissertation (University of Delaware, 2006), 28-31.

¹⁰⁴ James H. Collins, “Are Canned Foods Really Wholesome?” *Canning Age* 4, no. 9 (September 1923): 30. The American public still used ptomaine interchangeably with botulism and other food borne illnesses. Basically any stomach disturbance could be blamed on ptomaines, which were believed to be the compounds created with decomposition of food materials.

¹⁰⁵ Milton Rosenau, “Dr. Rosenau Finds no ‘Ptomaine’ Poisoning in Canned Foods,” *American Food Journal* 14, no. 6 (June 1919): 40.

¹⁰⁶ Rosenau, 41; Collins, 32. Nicholas Appert invented the process of canning for food preservation around the turn of the 19th century.

1920s with advertising and editorials that emphasized the sanitation and modern scientific processing of commercially canned goods, and at the same time discouraged home canning as unscientific and dangerous. In fact, as early as February 1921, Walter J. Sears, President of the NCA confidently announced in the *American Food Journal* that “progress made in bacteriology of canned goods now fully protects the consumer.”¹⁰⁷ But this was not actually the case according to the federal government. Later that year, R. E. Doolittle, Chief of the Central District of the US Bureau of Chemistry argued that “[i]t has been our experience that manufacturers and distributors of food products have little or no information concerning the danger of contamination of food products with the botulinus organism and a very vague idea of its dangerous character.”¹⁰⁸ Doolittle pushed for more government oversight and inspection of manufacturers, not trusting the canners to inspect their own products, despite the NCA’s assurances that canners were “devoted to bacteriology.”¹⁰⁹ In the same vein, Dr. J. C. Geiger, Assistant Surgeon General of the US concluded that “the commercial canning industry, which has for years labored with improved machinery, a trained personnel, and in many instances with scientifically controlled processes, has not entirely succeeded in obviating spoilage.”¹¹⁰

Canners also invested in scientific studies to investigate the vitamin and mineral content in canned foods. In fact, according to *Canning Age*, Americans were “living in an age when the popularity of food products is fixed in the laboratory,” meaning that the United States was in the

¹⁰⁷ Walter J. Sears, “Science and Our Food Supply,” *American Food Journal* 16, no. 2 (February 1921): 7.

¹⁰⁸ R. E. Doolittle, “The Problem of Botulism in the US,” *American Food Journal* 16, no. 11 (November 1921): 15.

¹⁰⁹ Sears, 7.

¹¹⁰ J. C. Geiger, “Underprocessed Canned Vegetables and Fruits the Most Frequent Cause of Botulism,” *American Food Journal* 16, no. 12 (December 1921): 21.

grips of a “Vitamin Age.”¹¹¹ Scientists, and by extension canners, were given the task of explaining to homemakers where canned foods fit on their table. Walter H. Eddy, a professor of chemistry at Columbia University and later contributor to *Good Housekeeping*, argued that vitamins were like a spark to gasoline in an automobile—“without the electric spark, gasoline is useless. . . . Food is the fuel that runs our human machines, but in the absence of vitamins it fails to function.”¹¹² Without vitamins, Americans risked malnutrition, and in the 1920’s and 1930’s, American society became practically obsessed with the vitamin content of foods.¹¹³ As Harvey Levenstein has explained, this obsession with vitamins stemmed from researchers who began to measure the height, weight, and growth of children, only to find that in New York City, for example, nearly 225,000 out of one million students were “undernourished.”¹¹⁴ Though vitamin and malnutrition research was still in its infancy, Eddy believed that “we are approaching the solution of that problem [malnutrition],” and that canned foods were a potent weapon in America’s arsenal against poor health. Editors of *Canning Age* hoped that the work of Eddy and other scientists would “prove that canned foods actually are superior to home-cooked foods,” and give the industry a tool “to silence its calumniators,” who had “slandered” canned foods.¹¹⁵ Eddy gave specific reports to canners. For example, he reported that in studies of the effects of canning on the vitamin content of spinach, his laboratory found “no evidence of destruction of

¹¹¹ Editor’s Note, “Food Value of Canned Vegetables,” *Canning Age* 7, no. 7 (June 1926): 566. See Also Rima Apple, *Vitamina: Vitamins in American Culture* (New Brunswick, NJ: Rutgers University Press, 1996).

¹¹² Walter H. Eddy, “The Nature and Importance of Vitamins,” *Canning Age* 6, no. 3 (February 1925): 253.

¹¹³ See also Harvey Levenstein, *Revolution at the Table: The Transformation of the American Diet* (New York: Oxford University Press, 1988). Harvey Levenstein, *Fear of Food: A History of Why We Worry about What We Eat* (Chicago: The University of Chicago Press, 2012).

¹¹⁴ Levenstein, *Revolutions at the Table*, 113-114.

¹¹⁵ Eddy, “The Nature and Importance of Vitamins,” 253.

any appreciable magnitude . . . by processing. . . both home-cooked and canned spinach provided almost equally good protection in amounts equivalent to 26 milligrams of raw product.”¹¹⁶ Research coming out of laboratories in California found that “as far as the nutritive value is concerned. . . there is very little difference between the chemical composition of the fresh and the canned article. . . . As regards mineral matter and protein and other nutrients the difference is immaterial.”¹¹⁷ Other studies done by Eddy concluded that “[w]hen canned under the proper conditions at the peak of their richness in vitamins, canning seems to be a method of preserving these vitamins for a long time.”¹¹⁸ This is a hint at future efforts to standardize canned food production, as researchers believed that a standardization in procedures would not only create a safer product, but also a more nutritious product. H. D. Brown, a contributor to *Canning Age*, argued that much of the “mineral constituents of canned foods may be lost by faulty canning operations,” and as such it was “essential to take all precautions possible to retain these valuable constituents in the finished product.”¹¹⁹ Publications like *Canning Age* urged canners to purchase books like H. C. Sherman and S. L. Smith’s *The Vitamins*, which according to the journal “tells what is known concerning these food factors and does it in such a way that one need not be a chemist or highly trained in order to follow the discussion.”¹²⁰ Canners needed to not only educate themselves in new canning techniques and bacteriological research, but they

¹¹⁶ Walter H. Eddy, “Influence of Cooking and Canning on Vitamin Content,” *American Journal of Public Health*, 15, no. 3 (March 1925): 231.

¹¹⁷ M. E. Jaffa, “The Place of Canned Foods in the Diet,” *Canning Age* 7, no. 8 (July 1925): 640.

¹¹⁸ “Canned Foods and Vitamins,” *American Journal of Public Health* 14, no. 7 (July 1924): 614.

¹¹⁹ H. D. Brown, “Food Value of Canned Foods,” *Canning Age* 7, no. 7 (June 1926): 567.

¹²⁰ “Good Book on Vitamins,” *Canning Age* 6, no. 11 (October 1925): 851.

also needed to be abreast of nutrition discoveries, which oftentimes was referred to as “[t]he confusing subject of vitamins. [sic]”¹²¹

Still, American canners remained optimistic that they could refashion canned foods in the image of science and modernity and reap the benefits.¹²² Reporting on the NCA meeting in January 1922 (also in attendance was the Canning Machinery and Supplies Association and the National Food Brokers’ Association), the February issue of the *American Food Journal* assessed that “[o]pinion was almost unanimous among the six thousand delegates,” that the worst was behind the industry, with “the stage...already set for a revival.”¹²³ Among a number of issues discussed at the conference, and subsequently published in the journal, were discussions that focused on the role of science in the consumer’s conception of canned goods. Walter G. Campbell, chief of the Bureau of Chemistry of the Department of Agriculture applauded how the enforcement of the Pure Food and Drug Act had “inspired confidence in the contents of the can,” and Charles H. Bentley, vice-president of the California Packing Corporation praised the NCA’s near eradication of the term “ptomaine poisoning,” a catch-all term used by doctors as “a convenient way to cover up their ignorance,” and used by newspaper reporters to attract

¹²¹ Ibid. This is not to say that canners were not a bit leery of giving up all of their authority to scientists and physicians. O. Fred Rost, the Director of distribution at McGraw-Hill Publishing Company argued in *Food Industries* that the American Medical Association’s “committee on foods,” which the AMA started in 1930 in order to “test food products for which certain health-giving qualities were claimed,” had gone too far in investigation and regulations. Rost feared “drastic demands” from these medical bodies which would result in “costly changes in brands, packaging, labeling, the scrapping of trademarked names possibly representing millions invested in goodwill and advertising may be urged.” O. Fred Rost, “Do the Food Industries Need Added Policing?” *Food Industries* 3, no. 8 (August 1931): 335. Rost saw the AMA getting out of control, “undertaking something entirely outside of its sphere.” Rost, 336. Canners had to some way balance their need for scientific legitimacy and control of their own industry.

¹²² The industry was also plagued with high transportation rates, unsteady prices, competition from lesser quality (and sometimes altered/contaminated) foreign goods, along with food poisoning scandals. “Canners Await Big Business Revival,” *American Food Journal*, 17, no 2 (February 1922): 7-14.

¹²³ “Canners Await Big Business Revival,” *American Food Journal* 17, no 2 (February 1922): 7.

readers.¹²⁴ In fact, NCA president Sears reassured attendees that the association's research facility was "constantly at work in co-operation [sic] with America's greatest scientists studying the bacteriological side of the canning industry to make canned goods pure and wholesome."¹²⁵ The key, however, was getting such information out there to the public.¹²⁶

In an attempt to get America's canners on board with the new canning techniques and temperature recommendations that came out of research taking place in various universities and laboratories across the country, industry journals like *Canning Age* published articles by scientists that explained how to implement these new findings in their canning operations. The editors of *Canning Age* also used their journal as a platform to talk directly to canners, arguing that though canners' distrust of chemists and bacteriologists was "partly justifiable" based not on "his integrity, but his ability to produce practical data," what was chiefly at play was a gross "misunderstanding" between the two parties.¹²⁷ To the manufacturer, the findings of food scientists were intriguing, but because the scientists were not as familiar with the actual inner-

¹²⁴ "Canners Await Big Business Revival," 8.

¹²⁵ "Canners Await Big Business Revival," 12.

¹²⁶ To achieve this, members of the NCA voted for a propaganda campaign called "Canned Foods Week." See Royal Clark, "Plans Completed for Canned Foods Week," *American Food Journal* 17, no 2 (February 1922): 31. Canning industry subscribers to the *American Food Journal* had to have noticed a significant change in the focus on the journal when Winifred Stuart Gibbs came on as an editor in May of 1922. The magazine never does a report about Canned Foods Week in the years that follow, and does not pay much more attention to the NCA at all. The magazine turns to focus more on dietetics and domestic science, and less focus on industry/NCA news. This is probably part of the magazine's demise in 1928 after merging with *Home Economist*. Things change in the journal even earlier, though, probably due to the change in editorship for 1917—original editor Herman Mevers passed the torch to Robert Gordon Gould at the end of 1916, and Gould immediately made his presence much more explicit (added an editor byline on the Table of Contents for himself) by printing his name under the expanded Editorial section where before the section was without authorship. Also in 1917 Helen Louise Johnson, Chairman of the Home economics committee of the General Federation of Women's Clubs joined as contributor, to give "[the manufacturer] an intelligent insight into what is expected of him in the way of a finished product." See "Helen Louise Johnson," *American Food Journal* 11, no 12 (December 1916): 600. By June of 1917, the journal was running articles in support of home canning, such as "Home Canning by the Cold Pack Method," *American Food Journal* 12, no 6 (June 1917): 319. This is directly at conflict with the previous issues of the journal that appeared to be heavily influenced by the NCA.

¹²⁷ "The Research Chemist," *Canning Age* 3, no. 1 (January 1922): 41.

workings of the factory he (or she) did not do a sufficient job of translating these findings to the factory floor. The article recommended that manufacturers be patient because the work of scientists would eventually result in a better quality product, since all canners knew that a decline in product quality was “quickly noticed and usually produces an unfavorable reaction on public psychology” that would take years for that manufacturer to overcome.¹²⁸ In a sense, canners could not afford to look the other way and dismiss the scientists’ message.

Canning Age published the address made by J. R. Estey, a member of the research division of the National Canners’ Association in an attempt to convince canners to trust researchers and scientists. The editors argued that “[t]he scientist is often good naturedly tolerated as a well meaning ‘nut’ by the practical canner,” so Estey hoped that his article would “enlighten” the canner about “how the scientist works out a problem of canning.”¹²⁹ In this article, written in plain language, Estey recounted the steps and techniques that he used to determine the cause of swelling in cans of tomatoes, a concern that should have been of “utmost importance,” to canners.¹³⁰ Once the discovery of the cause was made, the scientist then had to “go further and establish control measures for the prevention of a recurrence of the spoilage,” thereby giving his continued research a trajectory and purpose.¹³¹ He admitted that “fundamental scientific research often appears superfluous to laymen,” but for the practical canner, these discoveries were still important because they set in motion changes and improvements upon

¹²⁸ Ibid.

¹²⁹ J. R. Estey, “Bacteria and the ‘Practical’ Canner,” *Canning Age* 5, no. 6 (May 1924): 451.

¹³⁰ Ibid.

¹³¹ Estey, 452.

canning techniques and standards of operation.¹³² Science and the canning industry—for better or for worse— was intricately intertwined.

W. E. Elwell, President of the Maine Cannery Association, rhetorically asked an audience at the New England Division of the Associated Advertising Clubs of the World, “Are canned foods safe and wholesome?” His answer was a resounding yes: “This is no longer a doubtful question. On the whole, canned foods are cleaner, safer, and quite as wholesome as the same article offered for sale when exposed in a fresh condition in the open market.”¹³³ “It may be definitely stated,” he argued, “ that the preservation of foods for future consumption by human beings has progressed from an art to a definite science.”¹³⁴ With the assistance of chemists, biochemists, microbiologists, bacteriologists, and physicians, the National Cannery Association became equipped with scientific legitimacy that it could then use as an educational base to transform the reputation of commercially canned foods in American culture and at the same time denigrate home canning and render it a dangerous, archaic practice. The challenge, however, would be to harness this legitimacy as Jules Schevitz recommended, when consumers were in the mood to hear the message. Cannerymen used several avenues to set this mood—descriptive labeling, domestic scientists, and the woman’s magazine.

¹³² Ibid.

¹³³ W. E. Elwell, “A Canneryman Tells it to the Ad Men,” *Canning Age* 4, no. 11 (November 1923): 26.

¹³⁴ Ibid.

CHAPTER THREE: PROVIDING A WINDOW INTO THE CAN: LABELING AND THE MYSTERIOUS CONTENTS OF CANNED FOODS

Though the clothes don't make the man, Oft the label sells the can.

—R. J. Kittredge¹

“Canned goods sell through their reputation,” argued an anonymous contributor to the journal *Canning Age*, a new industry journal published “with the purpose in mind of providing an organ for the discussion and dissemination of problems which have not hitherto been covered in a comprehensive way,” in the article “Which Can Did Mrs. Brown Buy?”² “Food in an opaque container cannot be smelled, tasted, or examined in any way before purchase. What, then, influences the housewife to select one particular can in preference to another? For the initial sale, an attractive label or an attractive advertisement. . . . The repeat sale is made if the contents live up to its promise,” explained the article.³ The label was important in the 1920's, which *Canning Age* had dubbed “the era of packagization.”⁴ Harry C. Faulkner, former president of the National Food Brokers Association argued that unfortunately “canned foods and their preparation to us [the industry] may be obvious; but to the public they are mysterious. . . . Little is really known about the quality of canned foods, how they are produced and why they are as wholesome as real food, and not to be considered only a substitute.”⁵ Some contributors, such as *Saturday Evening Post* and *Scientific American* writer and contributor to *Canning Age* and “biographer” of the canning industry James H. Collins, argued that the canned food label could

¹ R. J. Kittredge, “The Label as the Lithographer Sees It,” *Canning Age* 6, no. 6 (May 1925): 506.

² “A Statement of Purpose, *Canning Age* 1, no. 1 (January 1920): 22.

³ “Which Can Did Mrs. Brown Buy?” *Canning Age* 3, no. 1 (January 1922): 19.

⁴ “What Puts the ‘Sales Appeal’ into Canned Foods?” *Canning Age* 8, no. 12 (November 1927): 875.

⁵ Harry C. Faulkner, “The Canner Must Follow Through to the Consumer,” *Canning Age* 9, no. 3 Convention Digest Issue (February 1928): 236.

be compared to advertising space in a popular magazine, and was by his estimate “fifty times as large as that of the Saturday Evening Post!”⁶ For Collins, not putting the appropriate information on labels was like throwing away thousands of dollars of advertising every year. He argued that every day newspapers across the nation published stories about “ptomaine poisoning by canned goods,” yet after an NCA investigation that exonerated canned foods is sent to said papers, “perhaps one paper in ten” reports that finding and perhaps “one person in the hundred” read the correction.⁷ This was a real problem, and Collins suggested that canners take the opportunity to print “an official uniform statement about the wholesomeness of canned foods” on their labels—the cheapest form of advertisement of what’s inside the can.⁸ As it stood for Collins, the canned food industry was bombarded with “fallacies” and “delusions” of ptomaine poisoning and lack of nutrient value, and merely stamping the can with the word “sanitary” was insufficient because “nobody has ever told [the housewife] what it means.”⁹ According to the estimates of *The Canner*, the weekly industry journal for canned food manufacturers, the 9 million-plus subscribers to women’s magazines “had been content to eat only two cans of canned foods a year.”¹⁰ Accordingly, United States canners determined that their “label says nothing,” and moreover the canner had no real idea at that point what the housewife needed to know about canned foods.¹¹ “To instruct the housewife how to use a product,” *Canning Age* contributor and

⁶ James H. Collins, “The Greatest Canning Waste,” *Canning Age* 3, no. 6 (June 1922): 21.

⁷ Ibid.

⁸ Ibid.

⁹ Collins, 42.

¹⁰ “Advertising the Seal in Earnest,” *The Canner* 49, no. 22 (November 27, 1920): 36.

¹¹ “The Housewife Speaks Her Mind to the Canner,” *Canning Age* 3, no. 7 (July 1922): 21. John T. Ogden, the editor of *Canning Age*, advertised in his editorial an article forthcoming in the August issue by Christine Frederick, who would be serving as the voice of housewives across the country. He added “Don’t miss this big constructive article.”

Secretary of the National Kraut Packers' Association Roy Irons argued, "is a process of education. . . . Today, they are in their new occupation of household and kitchen duties. They buy canned foods and without a chart or recipe, they proceed to create an edible dish. They fail."¹² The label, for Irons and others, was the key to educating housewives about the wholesomeness and usefulness of canned foods. "The can with the good label tells its own story," argued *Canning Age*, because "the vast majority of people are eye-minded, [and] they live and think in terms of what hits their optic nerves."¹³ Like the process of canning, the process of getting consumers to purchase canned foods had become a science.

Enter the women of home economics. Christina Frederick, editor of the *Ladies' Home Journal* who would later become America's Home Economist with her 1929 publication of "Selling Mrs. Consumer," brought to *Canning Age* the missing link in canned foods—how to get into the minds and most importantly the pantries of American women.¹⁴ For Frederick, it was simple—women needed to be "trained" to purchase canned foods.¹⁵ Women needed to be taught the yield of certain volumes of cans so that she would know what size can to buy that would correspond to the need of her family. In addition, Frederick, like Collins, believed that canners needed to actually put pertinent information on the label so that women could then be taught how to read labels. Frederick argued that "the consumer wants facts, and accurate information and not

¹² Roy Irons, "What to Do With the Label," *Canning Age* 10, no. 11 (October, 1929): 715.

¹³ "What Puts the 'Sales Appeal' into Canned Foods?" 877.

¹⁴ Megan J. Elias, *Stir it Up: Home Economists in American Culture* (Philadelphia: University of Pennsylvania Press, 2010), 84. See also Janice William Rutherford, *Selling Mrs. Consumer: Christine Frederick and the Rise of Household Efficiency* (Athens: University of Georgia Press, 2003).

¹⁵ Christine Frederick, "The Woman and the Tin Can," *Canning Age* 3, no. 8 (August 1922): 15.

pretty pictures and fancy designs!”¹⁶ Part of this truth in labeling and a shift to information instead of fluff would be a standardization in grades of foods, so that a woman would know the differences between Grade A and Grade B milk, or which can of pineapple had eight rings instead of six.¹⁷ For Frederick it was clear—canned foods needed to be regulated and standards needed to be established.

Dorothy B. Marsh, contributing editor of *Good Housekeeping* magazine added another voice for female consumers with her article, “As the Housekeeper Looks at the Can.” Marsh explained to canners how the magazine served the needs of homemakers, who sent thousands of letters every month looking for “assistance with their housekeeping problems including their purchases large and small.”¹⁸ For Marsh, it was imperative that canners paid attention to the issues that kept consumers from purchasing their products and that they used their advertising to educate women who were “groping for the truth” in the miasma of misinformation concerning canned foods.¹⁹ Marsh gave *Canning Age* readers a glimpse of real questions that the Good Housekeeping Institute received regarding canned foods. One reader asked if canned chicken was “really all right to use? So many of my friends say they are afraid to use any canned foods that I have never tried it.”²⁰ Another asked, “I am writing to find out if leaving canned foods in tin cans will cause ptomaine poison; or if that is an old superstition.”²¹ Marsh then concluded that the most important concern for homemakers was that they had to buy “canned foods

¹⁶ Frederick, 16. Italics in original.

¹⁷ Frederick, 17.

¹⁸ Dorothy B. Marsh, “As the Housekeeper Looks At the Can,” *Canning Age* 9 no. 1 (January 1929): 21.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

intelligently with only the meager information on canned labels to guide them.” The average homemaker had to make her purchasing decisions based off of the meager information on the can itself, which was a problem when “[t]o buy canned goods intelligently the consumer must have knowledge and for this reason, it is regrettable that much trade information now in the hands of the canners as to the contents of the cans is not made available to all concerned.”²² Women had no idea how much product was in each can, nor did the labeling information give consumers definitive information about the quality of the product. Marsh warned that “[n]ot until the housekeeper finds these facts clearly printed on the label of the can will the label become a true window to the contents of the can.”²³

For a look at the opinions and views of women squarely on the East coast, *Canning Age* published “A Consumer’s Viewpoint of the Label,” by New York Tribune Institute director Anne L. Pierce. The Institute was, according to *Canning Age*, “one of the most influential factors with the housewife in the East in matters pertaining to the consumption of food.”²⁴ In her report, Pierce argued that the current way of classifying canned foods into such designations as “‘fancy,’ ‘choice,’ and ‘fine’; ‘standard,’ ‘extra standard,’ and ‘substandard’” were “only misleading,” and asked why should it be that manufacturers even dared to sell substandard products anyway?²⁵ Pierce concluded that women wanted “plain honest descriptions the layman can understand. . . . Simple as a, b, c.”²⁶ Pierce also argued that people would actually pay

²² Marsh, 22.

²³ Ibid.

²⁴ Anne L. Pierce, “The Consumer’s Viewpoint of the Label,” *Canning Age* 5, no. 3 Convention Digest Issue, (February 1924): 190.

²⁵ Pierce, 191.

²⁶ Ibid.

attention to labels “if labels were more interesting and informative,” and argued that the popularity of moving pictures had shown that Americans were largely “eye minded”, and that the cartoonist “cuts much deeper into people’s minds and emotions than the editorial writer.”²⁷ Adding recipes to the can or to advertising would also boost sales according to Pierce, since there was a certain “witchery” that went along with a new recipe—people would buy more peaches, for example, if they were given recipes that took those canned peaches to new heights of gastronomical sophistication rather than just slopping a can of chilled peaches in a bowl and calling it dessert.²⁸ To put it simply—the label was an important part of the overall marketing of canned foods, and would be a lost opportunity if canners disregarded the advertising opportunities actually on the can itself.

Food Industries went one step further in their attempts to understand the plights of the American Housewife by giving space to an anonymous housewife who called herself “the Dumb Housewife.” The editors of *Food Industries* assured skeptical readers that the “Dumb Housewife” was a real housewife who gave herself that pen name, and would retain this name because “she prefers the freedom of expression afforded by the cloak of anonymity,” and because it allowed her to “speak the truth [and] to hit hard.”²⁹ In her first installment, “‘Dumb Housewife’ by One of Them,” this contributor took food manufacturers to task for claiming that American women were “damned dumb, lazy women,” and argued that any look at the

²⁷ Ibid. According to Walter H. Cook, a manufacturer and contributor to *Canning Age*, researchers during the 1920s were stressing the fact that “modern psychologists” believed that “the great majority of people today are ‘eye-minded’ or ‘picture-minded.’ . . . In reading words, it takes some time for the mind to ‘visualize’ their meaning; while with a glance, almost, any individual can look at a group of objects and get a larger number of definite impressions, more quickly and remember them better, than as if he were to read a printed list of the same number of things.” Walter H. Cook, “Seeing is Believing,” *Canning Age* 8, no. 9 (August 1927): 707.

²⁸ Pierce, 191.

²⁹ “Dumb Housewife,” *Food Industries* 7, no. 8 (August 1935): 368.

advertising of large companies would “reflect their attitude.”³⁰ The Dumb Housewife presented an indictment of the indiscretions of the advertising and food manufacturing industries, calling their ads full of “bunk and ballyhoo,” or “clever traps for rather stupid, gullible readers, rather than honest, clear-cut presentations about the food they buy.”³¹ She argued, quite forcibly, that “whatever the manufacturer may believe, the majority of us do buy food for our families primarily to make and keep them well and strong. . . . We want to know what is in your product, the quality of its ingredients, the truth about your claims for vitamins, enzymes and other discoveries of the chemist and the doctor.”³² In the second installment, “The Dumb Housewife Looks at the Labels. . . and Speaks Out Her Mind to the Canners,” the Dumb Housewife demanded that it was the manufacturers’ job to find out what women want on their canned food labels: “That is your job—find out, and put it on.”³³ She argued that canners should “employ some disinterested research laboratory to investigate [vitamins and mineral content]. Then, if you will process your foods in accordance with their findings, and tell us so, we may believe you and buy food under your labels with contented minds. . . . If we know your brand, your assurance of quality will satisfy us.”³⁴ Further, she suggested standardization in weights and grading, though it would be ridiculous to suggest that low quality foods be labeled in such a way that would give a consumer a touch of embarrassment in purchasing sub-standards.³⁵ While she admitted that consumer responses might run the gamut of demands, the Dumb Housewife urged canners not to

³⁰ “Dumb Housewife,” *Food Industries* 6, no. 6 (June 1934): 256.

³¹ *Ibid.*

³² “Dumb Housewife,” 257.

³³ “The Dumb Housewife Looks at the Labels. . . and Speaks Out Her Mind to the Canners,” *Food Industries* 6, no. 11 (November 1934): 496.

³⁴ *Ibid.*

³⁵ “The Dumb Housewife Looks at the Labels,” 497.

overlook this important dialogue, since consumers were smart about identifying “propaganda by printed word,” even though they may be stereotyped as “dumb, narrow-minded, suspicious fellow-consumers.”³⁶ According to this contributor, “even in surprisingly humble and uneducated families,” mothers were concerned about the nutritional value of the foods they fed their children and husbands.³⁷ Women were fertile ground for consumer education, and almost hungered for that scientific knowledge.

While labeling was important, educating the public was the chief goal of the NCA. The canner’s attempts at a new quality campaign attempted to address both issues—uninformative unimpressive labeling and print advertisements. First and foremost, the NCA set out to educate women about a new certification process enacted in 1920 that canners could take part in (voluntary) that would certify through an inspection process that the product was produced retaining its “wholesomeness and [with] sanitation, which will (though not so stated upon the certificate also insure that the raw product in certified goods is (though otherwise wholesome) also suitable for canning.”³⁸ Canners advertised the seal in all of the big magazines, such as *Saturday Evening Post*, *Ladies Home Journal*, and *Good Housekeeping*. In the ad that made it into the January 1921 issue of *Good Housekeeping*, the NCA used an image of what appears to be the goddess Ceres presenting a cornucopia of vegetables to an American housewife. In the background, copywriters painted a complete landscape, with open plains that could have been almost any farmland in the United States with a wide open blue sky blanketed by high clouds. The copy for this particular ad explained the seal as significant because with it, housekeepers

³⁶ “The Dumb Housewife Looks at the Labels,” 496.

³⁷ “New Food and Drug Act Looms. . . And the Dumb Housewife Wants to Know,” *Food Industries* 6, no. 12 (December 1934): 539.

³⁸ “The Canner’s National Advertising Campaign: Details of the Financing, Execution, and Purposes of the Undertaking by the National Canners’ Association,” *Canning Age* 1, no. 1 (January 1920): 7.

would know that “the canned foods on which it appears were made from selected, wholesome materials received, prepared and canned under sanitary conditions.”³⁹ Further, the copy assured women that “this seal is the mark of this rigid and daily Sanitary Inspection Service,” adding legitimacy by claiming that the seal was the result of “assured standards of preparation developed by a century of practical experiences aided by years of intensive scientific research.”⁴⁰ Again, education was the key issue in regards to the sanitation issue, and manufacturers were especially concerned because the subject of sanitation was “usually the most difficult to handle.”⁴¹ Indeed, because the media was flooded with “ptomaines”, manufacturers would have to first be certain “beyond a doubt that *all* their canned foods are right,” and then foment “counter-propaganda” to destroy what they believed was the “ptomaine fraud.”⁴² Producers who took part in this certification process could include this information on the label of their product, assuring consumers that their product was a superior product. The NCA provided a simple black and white patented seal that read “Prepared under the sanitary inspection service of the National Cannery Association, Washington, D. C. Canned Food—the Miracle on your table.”⁴³ Inspection services were available in all of the major canning regions in the United States—the Northeast, the Midwest, and the Pacific Coast, with a few available in West Virginia, Georgia, and Tennessee, with nearly 800 canneries participating.⁴⁴ In addition, opinions regarding the effectiveness of the Inspection Service were less than favorable. Fritz Knorr, an employee at a

³⁹ NCA Seal Advertisement, *Good Housekeeping*, January 1921, 96a.

⁴⁰ Ibid.

⁴¹ Harry M. Miller, “Sanitation in Fruit and Vegetable Canning,” *Canning Age* 1, no. 10 (October 1920): 14.

⁴² John T. Ogden, “Counter Publicity,” *Canning Age* 3, no. 8 (August 1922): 24.

⁴³ “Directions Concerning Use of New ‘N.C.A.’ Seal,” *Canning Age* 1, no. 4 (April 1920): 21.

⁴⁴ “N. C. A. News from Washington,” *The Canner* 49, no. 22 (November 27, 1920): 45-46.

fruit canning facility in Porterville, CA, wrote in to *Canning Age* concerning inspection, and his letter to the editor was published in the September 1920 issue. According to Knorr, the process was incomprehensible, “puzzling and perplexing as anything can be.” Each report consisted of an asterisk which Knorr found especially insulting. “An asterisk on these reports,” according to Knorr, “refer you to a very short and abbreviated foot note calling your attention to something you have not seen.”⁴⁵ The report did not appear to be transparent, and Knorr reasoned that if employees could not understand the report, they would be unable to improve the conditions of the plant. For Knorr, the Inspection Service failed to inform and educate employees, which rendered the service useless.

The NCA had other critics of their inspection process. An anonymous subscriber wrote in to *Canning Age* in August of 1923. In his brief one-page rant, this subscriber argued that canners were incessantly inundated with recommendations about proper sanitation and proper factory requirements, only to then be inspected and given “a host of other well meant technical assistance with an ear grown nearly deaf from registering the same tone for too long.”⁴⁶ He argued that in “the mass of literature now being offered the canner the words ‘cleanliness’ and ‘sanitation’ are mentioned most frequently,” but “little or no advice is given the canner as to the methods most efficient and economical in the securing of sanitation and cleanliness.”⁴⁷

Moreover, the canner was “doing his best to carry out this maze of detail,” knowing that

⁴⁵ “Worker’s Opinion of Inspection Service,” *Canning Age* 1, no. 9 (September 1920) 24. To augment the inspection service, the NCA tried a different approach to inspection in 1930 by starting a traveling “field laboratory service” with the hopes of bringing the bacteriologist to the canner. Basically, the NCA outfitted four researchers with a covered makeshift-lab in the back of a truck. The “nomads,” as they were called, then set up various testing apparatuses inside the canning facility to sterilize the cultures which were then brought to the truck for analysis. See “N. C. A. Field Laboratory Starts its Summer Tour,” *Canning Age* 11, no. 7 (June 1930) 487-488; 522.

⁴⁶ “The Canner Gets Drowned in Advice,” *Canning Age* 4, no. 8 (August 1923): 35.

⁴⁷ Ibid.

scientific knowledge and technological advancements may change this standard at any given moment.⁴⁸ For this particular canner, simplicity was the key in the face of increasing government and industry control. The bottom line, however, was that canners needed to provide sanitation in an efficient manner and pass those savings and piece of mind on to the consumer.

Education was the key to success for workers like Knorr, and the NCA agreed. According to the NCA, “[a]bout 35 or 40 percent of the people won’t permit canned goods to come into their house, and the balance of them only eat canned foods indifferently-only occasionally.”⁴⁹ This was, of course, unacceptable. Based on their research, the entire country was mired in prejudice and as a result the campaign could not leave one region uneducated about the safety and superiority of canned foods. Dr. Grace MacLeod of Columbia University’s Teachers College argued that the “psychology of food” was based on experience, and “one unpleasant experience with a food may set up a prejudice which will last for years.”⁵⁰ To determine these figures, the NCA hired the advertising firm Blackman-Ross to survey public opinion of canned goods. Their rigorously investigative project sent out only 100 surveys, but they made sure to send at least one to every state—clearly to assess the pulse of regional consumption. According to a Mr. Rowe, the head of the NCA project, members of the firm “thrashed it all out with our families; traveling we speak to the people on the trains and get their ideas. In every possible way we try to get at the consumer and see just what the consumer’s point of view is.”⁵¹ Basically, the NCA based their entire advertising campaign on less than 100

⁴⁸ Ibid.

⁴⁹ “The Canner’s National Advertising Campaign,” 7.

⁵⁰ Grace MacLeod, “Food Facts and What Use the Canner Should Make of Them,” *Canning Age* 8, no. 3 Convention Digest Issue (February 1927): 197.

⁵¹ “The Canner’s National Advertising Campaign,” 8.

customer questionnaires and informal badgering of family members and strangers. Blackman-Ross's findings suggest that Upton Sinclair's exposé of the meatpacking industry still permeated people's impressions of canning, and that their concerns spread to canned vegetables as well. Consumers gave researchers a laundry-list of excuses for their distrust of canned foods, but most of their reasons had to do with cleanliness. Respondents believed that like canned meat, vegetable canners did not inspect their produce and either knowingly or unknowingly canned rotten vegetables.⁵² Consumers were doubtful that canners even cleaned the vegetables before canning them, and that these dirty and unsanitary foods caused a myriad of illnesses, including the flu epidemic and cancer.⁵³ The women interviewed asserted that canned foods were "indigestible," and some remarked that they "value[ed] my health too much." A woman who described herself as Italian also commented that she would not purchase canned goods because "[o]nly the Irish eat canned foods."⁵⁴ Canned foods, were not only seen as unhealthy and potentially dangerous, but they were also seen as an item that only the poorer, less-educated classes would risk buying.

As part of Hoover's attempt to aid in business growth through government sponsored research, the United States Department of Commerce also researched consumer opinion regarding canned foods during the hot summer months of 1926 in an effort to collect "representative and unbiased opinions from citizens [that] would be helpful to the growers, the consumers, the distributors, and the canners," and would lead to an increase in the consumption

⁵² Consumers' fears were warranted. At the annual meeting of California canners in February of 1920 (a report of the meeting was published in the March issue of *Canning Age*), attendees discussed several violations of Pure Food and Drug laws by canners who processed rotten tomatoes in with good ones. See "Annual Meeting of California Canners," *Canning Age* 1, no. 3 (March 1920): 44.

⁵³ "The Canner's National Advertising Campaign," 8.

⁵⁴ Ibid.

of canned foods.⁵⁵ R. S. Hollingshead, a representative of the US Department of Commerce summarized the findings *Canning Age* in 1928. The original survey was limited to “Queensborough, New York City, Bridgeport, Connecticut, and Sussex County, New Jersey. . . representing respectively an urban residence location, a highly industrialized small city, and an agricultural area.”⁵⁶ When possible, the Department conducted “door-to-door visits by trained women,” who assisted consumers with filling out the long, detailed questionnaire.⁵⁷ The results of the questionnaire found that “consumption of canned foods was greatest among those whose incomes were between \$1,500 and \$2,000 per year,” and the more income consumers brought home the less they spent on canned foods, instead choosing to purchase fresh foods.⁵⁸ Race and ethnicity also played a role, as consumption “among foreigners who are living in segregated groups was found to be very low,” because these groups were not familiar with the use of canned vegetables and fruits.⁵⁹ The survey maintained that it was people of lesser means who bought canned foods, but “Germans, Italians, or Slovaks, who still retain their European food habits and customs, are as a class the lowest consumers of canned foods.”⁶⁰ Of the consumers who purchased canned foods, they only did so for convenience, as most “believed that the flavor of fresh or raw products surpassed that of the canned, and it was also thought that the former had a

⁵⁵ R. S. Hollingshead, “The Consumption of Canned Foods: A Survey of Public Opinion,” *Canning Age* 9, no. 3 Convention Digest Issue (February 1928): 238.

⁵⁶ Hollingshead, 238.

⁵⁷ R. S. Hollingshead, “What Competition of ‘Fresh’ Foods is Doing to the Canning Industry,” *Canning Age* 8, no. 8 (July 1927): 619.

⁵⁸ Hollingshead, “The Consumption of Canned Foods,” 238.

⁵⁹ Ibid.

⁶⁰ E. G. Montgomery, “What the Canned Foods Survey Brought to Light,” *Canning Age* 8, no. 3 Convention Digest Issue (February 1927): 224.

higher food value.”⁶¹ Further, the study found that women had little “knowledge that there are different grades of these products.”⁶²

According to Hollingshead, the US Department of Commerce expanded their survey in the summer of 1927 to include information gathered from extension stations, thereby extending their survey to include “city dwellers, farm houses and North and South Carolina and Texas, as well as a few textile milling towns in the Carolinas.”⁶³ Still, the study found that “slightly more than one in four of those housewives interviewed have some objection either to all canned foods or to some particular kind of canned food.”⁶⁴ Out of 283 responses regarding a “fear of sickness”, 80 had a “general prejudice” of canned foods, 68 had what they determined to be a “specific prejudice,” against certain unnamed brands and types of canned foods and 135 had “either or both.”⁶⁵ Hollingshead confirmed that “fear of sickness” was “quite strongly held, and undoubtedly has some effect on the consumption of canned foods,” even though it was a fear that was a “relic of the earliest days of the industry when the technical problems had not been worked out.”⁶⁶ Fear of sickness received the highest score on the Department’s list of objections, and the most damaging, since “the criticism or complaint is immediately passed along by the woman

⁶¹ Hollingshead, “The Consumption of Canned Foods,” 238. *Canning Age* had determined that convenience was the biggest and most important point when advertising canned foods because people were “all inherently lazy.” Canned foods would “lessen the drudgery of cooking” and “add to the hours of leisure for housewives.” For the editors, it was surprising that despite these facts, “we scarcely ever hear even a whisper in the national advertising of canned foods about this enhancing quality, of ‘eats ready to eat.’” “What Puts the ‘Sales Appeal’ into Canned Foods?” 878.

⁶² Montgomery, 225.

⁶³ Hollingshead, 239.

⁶⁴ Ibid.

⁶⁵ Ibid.

⁶⁶ Hollingshead, 239-240.

involved to her friends.”⁶⁷ As such, it was no wonder that several colloquialisms—calling a drunkard and someone who was fired from their job “canned” was commonplace in the 1920’s.⁶⁸ Canned foods just could not shake their tarnished reputation.

Blackman-Ross and R. S. Hollingshead recommended that women needed to be educated about the nutritive value and relative safety of canned foods, and the appropriate medium for the NCA’s campaign was first and foremost the thousands of readers of women’s magazines, “because it is the women that buy most of the things and especially most of food that is eaten.”⁶⁹ To be sure, canners spent millions of dollars advertising in women’s magazines—in 1926, for example, canners spent over 4.6 million dollars out of 6.6 million total magazine advertising dollars on women’s magazines, and that total made up about one-third of the total money spent in magazines advertising for all foods, according to a report in *Canning Age*.⁷⁰ The sample ad included in the article demonstrated how these advertising spots could look. This particular sample was a full two-page spread. On the left side of the ad, the images and the copy spoke directly to the female consumer. The images included small representations of what appears to be the same woman experiencing the “miracles” of the modern world—running water and the

⁶⁷ Ibid.

⁶⁸ Ross McIntyre, “The Human Stomach and the Canning Industry,” *Canning Age* 9, no. 3 Convention Digest Issue, (February 1928): 251.

⁶⁹ “The Canner’s National Advertising Campaign,” 9. Canners also used newspaper advertising and radio advertising to get their message across. See “N. C. A. Directors Vote to Continue Broadcast,” in *Canning Age* 11, no. 7 (June 1930): 425. The NCA also had women like Anna B. Scott, a “food expert,” speak on their behalf in various radio spots during the 1920’s. In one program, which was subsequently republished in the editorial section of the *Philadelphia North American*, Scott argued that canned foods were now safe “thru [sic] operation of pure food laws canned foods and canning plants came under strict supervision of state and federal experts, and of later years a national association of canners has lifted standards even higher than those set forth in the law. Such a revolution has entirely wiped out the former prejudice,” Scott explained. Scott’s “masterpieces,” as the editor of *Canning Age* John T. Ogden declared them—which included menus and recipes using canned foods—were a welcome addition to the NCA’s arsenal of publicity. See John T. Ogden, “Keep it in Mind,” *Canning Age* 4, no. 6 (June 1923): 26.

⁷⁰ “What Puts the ‘Sales Appeal’ Into Canned Foods?” 873.

telephone. The larger picture shows the woman presenting the reader with an equally if not more important miracle—canned foods. On a platter, the woman balances a collection of canned foods: fruits and vegetables, milk, and meat. What is most pronounced in this part of the advertisement, however, is its emphasis on the “romance” of canned goods, and not the scientific ingenuity of canning. Each can told a “thrilling story” of its travels from the cornfields of Iowa, pineapple from the “balmy atmosphere and sunny skies” of the tropics, and salmon which just a short time ago was “leaping the falls of a northern river.”⁷¹ The imagery and language played upon both the vastness of the United States and the rich tapestry of its landscape. Each region had its own celebrate characteristics, and while Americans may have reached the Pacific coast and extinguished the physical frontier of the nation, through canned goods the true integration of its regions and people could be realized.

The other side of the spread emphasized the ultimate goal of the NCA: promote the scientific advancements in canning, while at the same time highlighting the way canning brought the bounty of each region of the US to every table. The ad traces the process of canning, from the field to the factory, to the grocer’s shelves, and to the tables of Americans. Once in the factory, the food was “handled almost wholly by machinery—ingenious machinery which works far faster and more efficiently than human hands—and never gets tired.” Of course, this was not necessarily a whole truth. Photos inside canning factories in *Canning Age* betrayed this copy with images of people working the machines, prepping the canning vessels, and filling the cans. But this reality was exactly what consumers were afraid of—human error. While some bigger canning operations may have used mostly machinery to can, the NCA’s re-education campaign was supposed to represent *all* canners. Further, the ad assures consumers that the process “is

⁷¹ “The Canner’s National Advertising Campaign,” 8.

watched at each stage of its progress,” which was a bit more ambitious for the nascent and less-than-thorough Inspection Service.⁷² Explaining this complexity to the general public was too problematic, and left too much room for uncertainty and doubt among consumers.

To be sure, copywriters of the ad were not done evoking the image of America’s bountiful agriculture in this page of the ad. According to the ad copy, “not long ago canned foods were regarded as delicacies far beyond the reach of everyday pocketbooks.”⁷³ The language in this copy appealed to what they believed were the consumers’ desires to be both thrifty and at the same time partake in the lifestyle of the middle class. Though their research suggested that only lower class women would buy canned goods, either because they were frivolous with their money or were ignorant of the problems associated with canned goods—like the Italian woman who claimed that only Irish women bought canned food—canners still had to counter the fact that buying canned food was more expensive than canning your own food or eating fresh vegetables in season. “The humblest family,” explains the ad, could enjoy “Columbia River or Alaskan salmon and blithely orders beans that were grown and packed a dozen states away.”⁷⁴ Clearly, food was the ideal vehicle for introducing Americans to other parts of the country without the costs of travel. Canned foods, in turn, could be just as effective in uniting the country’s varied regions as the Transcontinental Railroad or the telephone. The ad closed reminding women of this “the next time you call your grocer on that modern miracle, the telephone, and ask him to include in your next order, that other modern miracle, a can of vegetables.”⁷⁵

⁷² “The Canner’s National Advertising Campaign,” 9.

⁷³ Ibid.

⁷⁴ Ibid.

⁷⁵ Ibid.

The ability of modern canning to make the people of the United States more cohesive because of their consumption of similar foods, and its capacity to bring exotic regional foods to the plates of Americans throughout the country, was exemplified by the success of advertising for foods of the Pacific coast done by the H. K. McCann Company.⁷⁶ In “Selling The Nation on Pacific Coast Products,” H. Q. Hawes of the H. K. McCann Company gave the readers of *Canning Age* a look inside the utopian exchange of goods between farmers, canners, grocers, and consumers fueled by advertising. After walnut farmers in California organized into the California Walnut Growers’ Association, growers were able to increase walnut sales, but when overproduction threatened to wither bumper crops, the CWGA saved its yield and its reputation “by the timely and liberal use of national, educational, and demand-building consumer advertising.”⁷⁷ By presenting Diamond Brand walnuts as appealing, nutritious, and of a high quality, for example, they renewed customer demand for walnuts. Similarly, other foods grown on the West coast, such as almonds and fruit, used the H. K. McCann Company to get its products in every market in the country. Makers of Del Monte brand canned fruits and vegetables saw the advertising firm lay out a gradual plan to make customers feel safe consuming their canned foods. According to Hawes, advertisers first introduced customers to the actual trademark of Del Monte foods, “followed by advertising emphasizing the trademark on the can, with text matter devoted to the quality of the pack and the responsibility, experience

⁷⁶ Harry McCann started the H. K. McCann advertising agency in 1912. In 1930 it merged with New York advertising agency Erickson, which was started by Alfred Erickson in 1902. In 1997 the New York Times declared that McCann-Erickson was the second largest world-wide advertising agency. (Stuart Elliot, “The Media Business: Advertising; A Sweeping Reorganization at McCann-Erickson seeks to highlight marketing services,” *New York Times*, September 22, 1997. Online at: <http://www.nytimes.com/1997/09/22/business/media-business-advertising-sweeping-reorganization-mccann-erickson-seeks.html>)

⁷⁷ H. Q. Hawes, “Selling the Nation on Pacific Coast Products,” *Canning Age* 1, no.10 (October 1920): 16.

and facilities of the company.”⁷⁸ It was a guarantee of quality and safety that canned goods had to emphasize if they were going to see sales increase among skeptical American housewives. Interestingly, Hawes noted that the agency was sure to use bright colors, provide recipes, and emphasize “appetite appeal” in ads placed in women’s magazines. This attention to detail in gender-specific publications illustrates that advertisers believed in a comprehensive approach that mixed flavor and whimsy with the authority of modern science.

Dr. Walter Dill Scott published his seminal *The Psychology of Advertising: A Simple Exposition of the Principles of Psychology in Their Relation to Successful Advertising* in 1908, but even in the late nineteenth century companies attempted to understand why people purchased certain goods over others, and how to get their products in the hands of the American middle class. Many advertisers did this by appealing to what were believed to be middle-class values and sensibilities, as recommended by Scott, who specifically addressed the importance of harnessing sentiments like “purity,” “romance,” “poetics,” and “esthetics,” in food advertising, since customers couldn’t necessarily buy new products based on taste.⁷⁹ The modern housewife, according to Scott, (and clearly the ideal consumer target for manufacturers) insisted on a certain level of glamour at the table, “know[ing] that a meal does not taste good unless the linen is spotless and the service more or less formal and ceremonious.”⁸⁰ To be sure, pandering to the delicate interests of the middle class had its dissenters, as Julius Schneider of the *Chicago*

⁷⁸ H. Q. Hawes, “Selling the Nation on Pacific Coast Products,” *Canning Age* 1, no.10 (October, 1920): 19. In an “Editor’s Note” at the end of the article, *Canning Age* reported that salmon canners were joining together like the CWGA to implement a nationwide advertising campaign that focused on “advertising and marketing canned salmon on a more scientific basis.” Some salmon canners apparently could not be deterred from taking matters into their own hands, because in the April 1921 issue of *Canning Age*, the journal ran a story about a salmon canner who tried unsuccessfully to co-opt the Aunt Jemima image for its labels/advertising. See Waldon Fawcett, “A Name’s a Name on Either Fish or Flour,” *Canning Age* 2, no. 4 (April 1921): 25.

⁷⁹ Walter Dill Scott, *The Psychology of Advertising: A Simple Exposition of the Principles of Psychology in Their Relation to Successful Advertising* (Boston: Small, Maynard & Co, 1908), 195-198.

⁸⁰ Scott, 200.

Tribune expressed at a meeting of the Kansas City Advertising Club in 1916. “There has been altogether too much talk about the theory of this business, too great an attempt to make it over into a science. We must get back to the fact that the reason we advertise is to coax money out of people’s pockets, and not to educate them in English and art,” he argued.⁸¹ According to Schneider, “[o]nly fifteen percent of the people who ought to be buying your goods can appreciate a clever ad or one that requires a keen understanding.... Your appeal must, therefore, be of a primitive nature.” The field of advertising, however, was going through its own Progressive-makeover, with a greater industry focus on a code of ethics, admitting women into the profession, requiring proper training of executives, and using scientific research to access the desires of the consumer, whether the old guard within the profession liked it or not.⁸² An editorial in the first issue of *Canning Age* highlighted this change. The editor argued that World War I had shown the “powerful effect of insidious propaganda upon the psychology of the people, proving conclusively the danger of letting unintentional libels . . . get into circulation without making an effort to counteract their effect.”⁸³ He added that it was “time for canners to start a propaganda of their own, based on the truths and facts about their business” and show consumers that canned foods were “the safest and purest of all the foods that can be eaten.”⁸⁴

⁸¹ “Only One ‘Ad’ Function,” *Advertising Age* 20 (December 1916): 25.

⁸² Pamela Walker Laird, *Advertising Progress: American Business and the Rise of Consumer Marketing* (Baltimore: The Johns Hopkins University Press, 1998). Much has been written about the professionalization of the advertising industry and its effects on American society. See also Roland Marchand, *Advertising the American Dream: Making Way For Modernity 1920-1940* (Berkeley: University of California Press, 1985). Jackson Lears, *Fables of Abundance: A Cultural History of Advertising in America* (New York: Basic Books, 1994). James D. Norris, *Advertising and the Transformation of American Society, 1865-1920* (New York: Praeger, 1990). Oliver Zunz, *Making America Corporate, 1870-1920* (Chicago: The University of Chicago Press, 1990). Susan Strasser, *Satisfaction Guaranteed: The Making of the American Mass Market* (New York: Pantheon Books, 1989).

⁸³ “Counteracting Canned Food Libels,” *Canning Age* 1, no.1 (January 1920): 22.

⁸⁴ *Ibid.*

Part of the NCA's interest in the psychology of advertising came from an evolving interest in using labels to drive consumption. Not only did labeling tell consumers what they were getting inside the can, but advertising researchers assured *Canning Age* in 1922 that the labels also maintain a "visual appeal" that emphasizes the product's "distinctive and individual" qualities.⁸⁵ According to a "Mr. Litho," the advertising executive featured in the article, "A Lithographer Talks About Labels," a canning label was akin to a striking, "distinguishing" outfit that allowed a product to stand out among a crowd of dowdy wallflowers. It was not enough for a label to show that peas or corn was inside—canners needed to provide a specific scene that conveyed an idea or emotional response in the consumer and "make the human mind perform [as] if one is a skilled ring master—psychologically speaking."⁸⁶

For Litho, commercial success was only possible if the canner worked closely with advertisers to be sure that canners were not simply slapping any old image onto their product without any understanding of what makes a successful label. Artists turned armchair psychologists, it was advertisers who had the sufficient training and talent to identify and employ images that would actually appeal to consumers. When canners tried making labels on their own, the results were dismal. Lithow uses a design for an unnamed brand of beans that brandished a plate of beans with cannons and cannonballs as an example. "Beans and bullets!" Litho exclaimed. "What a combination."⁸⁷ Experts, like Litho, were not only cognizant of appropriate images to use, but also which colors would appeal to or turn off housewives. Red, for example, was a possibly detrimental color for canners even though it was an attention getter.

⁸⁵ "A Lithographer Talks About Labels," in *Canning Age* 1, no. 1 (January 1922): 17.

⁸⁶ Ibid.

⁸⁷ Ibid. Unfortunately, *Canning Age* did not provide a visual for the Cannonball beans (or perhaps Lithow did not provide it out of respect, though one would assume that readers knew what company was guilty of the awkward pairing).

“Red is a strong color. . . but red always jars the sensibilities. It may jar [consumers] so violently that a re-action (sic) may occur and the prospective customer... may turn from the red label.”⁸⁸ Similarly, Litho scoffed at another canner’s use of yellow. “Did you ever see anything uglier—more inartistic?” Litho asked his interviewer, though again *Canning Age* did not provide readers with the image spoken of. “[The canner] has violated every rule of art and almost everything else. See that broad expanse of bilious yellow. Yellow, by the way, is a difficult color to use with food products simply because of the suggestion it carries,” he explained. TO the untrained canner, red seemed to be a good choice, but Litho assured readers that an inappropriate color was just as detrimental as a poorly thought out vignette. The entire process was a potential reputation killer, and thus for some, labeling became one of the fronts of the war on the public’s supposed misconception of canned goods.

Canning Age contributor and advertising executive W. Livingston Larned echoed the sentiments of Mr. Litho in his explanation of proper labeling “strategy” in “The ‘Face Value’ of the Label.”⁸⁹ For Larned, every canned food manufacturer needed to “zealously” watch over the creation of labels, which was now a “fine art” that benefitted from the science behind “inherent knowledge of conditions, of psychology, of eye-appeal and of human nature.”⁹⁰ In fact, according to Larned, labels were so important that national advertising campaigns were halted by advertising executives because the labels chosen for the product were inadequate. Larned explained that, “the entire project” for a new line of vegetables “would suffer an initial handicap which went far deeper than the printed word in magazines and newspapers. The line was weak in

⁸⁸ A Lithographer Talks About Labels,” 18.

⁸⁹ W. Livingston Larned, “The ‘Face Value’ of the Label,” *Canning Age* 3, no. 11 (November 1922): 11.

⁹⁰ Larned, 11.

its labels.”⁹¹ Since “many people make purchases BY SIGHT,” no part of the label should have been hastily placed without careful planning and research because “even insignificant element[s] in a label will have to do with sales.”⁹² The canned food label was “either right or wrong, weak or strong, *at once*.”⁹³ Canners had once chance to get it right, lest they risk the profitability of their entire brand in one glance made by the consumer.

In fact, some critics of the underutilized canned foods label argued that the labels were more important to the lithographer, because it was his livelihood, than to the canner, which was an egregious oversight. A. C. Osborn, Jr. argued in “The Label on the Can” that the label was crucial to the canner since it was “the only protection which is afforded your package when it leaves the protection of its parent factory,” and “it is the actual point of contact between your product and the public, and just as the public views the interior of a store through the goods displayed through the windows of that store, so does the public view the interior of your package through the label.”⁹⁴ Just as stores had taken to displaying both goods and pricing advertisements in their windows, the label served that function on the can. The label, according to Osborn, could “create a purchase impulse in the mind of the shopper” just as a flash sale on orange juice advertised in a store window could result in an impulse purchase.⁹⁵ An attractive label was the equivalent of thousands of dollars of traditional advertising that cost manufacturers mere pennies per can. In “Ideas on Label Designing,” Osborn explained that boring, “simple” labels were doing an injustice to canners because their “clean cut” labels were not distinctive or

⁹¹ Larned, 12.

⁹² Larned, 13.

⁹³ *Ibid.*

⁹⁴ A. C. Osborn, Jr. “The Label on the Can,” *Canning Age* 7, no. 6 (May 1926): 495.

⁹⁵ Osborn, 495.

attention-grabbing.⁹⁶ Others shared Osborn's disdain for simple labeling, arguing that in a quest for simple, canners left out pertinent information in their labeling. In an analysis of canned pea labels, John Phillips Street, the Secretary of the Association of New York State Canners argued that "a number of canners have adopted the practice of indicating the size of the peas on their labels, with or without other descriptive phraseology, sometimes helping, but at others making the situation even more muddled."⁹⁷ In other efforts of simplicity, canners replaced the size designation with a code, but without a guide to these numerical codes, they were "meaningless to the consumer."⁹⁸ For a really striking label, canners should choose designs that employ varied colors and components—using varnish and embossing, as well as various shades of a base color, like yellow, red, or green, elevated the can to a multi-sensory experience, which would inevitably bring the can into "the very heart of the home."⁹⁹ It would be a shame, as *Canning Age* contributor and lithographer R. J. Kittredge explained, for canners to "pack a product which possesses qualities of permanent superiority" only to then "dress it up in a shabby coat."¹⁰⁰ Kittredge argued that it was a simple fact that an inferior can could sell with an attractive label, while it was more difficult "to sell a first-class article shabbily labeled."¹⁰¹

Labeling became a hot button issue because companies were attempting to establish their brands, which is a cornerstone of the evolution of food in the United States. Without regulations, inferior packers and producers could in many cases mimic the images and symbols used by

⁹⁶ A. C. Osborn, Jr. "Ideas on Label Designing," *Canning Age* 7, no. 11 (October 1926): 835.

⁹⁷ John Phillips Street, "'Simplified' Pea Labels—Do They Make a Bad Matter Worse?" *Canning Age* 8, no. 11 (October 1927): 810.

⁹⁸ Street, 810.

⁹⁹ Osborn, "Ideas on Label Designing," 837-839.

¹⁰⁰ R. J. Kittredge, "The Label as a Lithographer Sees it," *Canning Age* 6, no. 6 (May 1925): 509.

¹⁰¹ Kittredge, 509.

larger, more established and oftentimes of better quality canned foods. Though canners oftentimes lamented increased government regulation of their products, big producers wanted clearer labeling parameters so that they could build their brand and reputation.¹⁰² While companies could trademark certain images and brand names, place names and “descriptive words” were ineligible for patent.¹⁰³ In one case used as an example, two competing companies went to court over the use of “From the Land of Sunshine” and “Blossom and Sunshine,” because the judge ruled that the two phrases were “not so similar that their simultaneous use on canned goods would cause confusion in trade. . . . and . . . no one canning firm can hope to so broadly monopolize the word ‘sunshine’ as to shut out all other canners” from using it.¹⁰⁴ Descriptive or “extravagant, yea even boastful,” words were frequently rejected by the patent office.¹⁰⁵ In another case, two salmon canners went to court over the use of a flag on their labels, and the judge declared that because one canner used an image of a flag and the other only used the words “our flag,” no trademark or patent laws had been broken.¹⁰⁶ In fact, there was nothing to protect patented brands from seeing similar labels on goods of other brands, meaning that “the different brands looked so much alike that the individual designs could not well be remembered by the customer.”¹⁰⁷ Consumers remembered that their favorite brand had a red label and a bouquet of flowers, and may inadvertently purchase a different brand because it too had a red label and flowers.

¹⁰² “Too Much Regulation,” *Canning Age* 1, no 3 (March 1920): 38.

¹⁰³ Waldon Fawcett, “The Trade Marking of Canned Products,” *Canning Age* 1, no. 4 (April 1920): 3.

¹⁰⁴ *Ibid.*

¹⁰⁵ Fawcett, 5.

¹⁰⁶ Fawcett, 4.

¹⁰⁷ John N. Cobb, “The Problem of Selecting Appropriate Labels,” *Canning Age* 1, no. 4 (April 1920): 18.

Several food industry and advertising industry trade journals (and other consumer goods journals) published the results of a study done by Raymond B. Calahan for the National Trade Association examining the purchasing habits of 400 middle-class married women in New York City. Calahan used a questionnaire-method to compile his data, and the women were carefully selected for their “fair intelligence and moderate means.... [so that their] opinions were not unduly influenced by the stress of meager financial resources, or by the indifference of the wealthy to whom price would be a matter of small consideration.”¹⁰⁸ Of the 141 women who returned the questionnaire, 87% reported that when faced with purchasing a nationally advertised item and an unadvertised item that was similar, they purchased the one advertised. 2/3 of the respondents claimed that the advertised products were of superior quality, and almost 90% would still use their favorite advertised product if the price went up.¹⁰⁹ What this study suggested was that middle-class women not only trusted national advertising, but they also readily became brand-loyal. These women could afford to be repeat customers. For advertisers, this lasting relationship was much more profitable than the chance purchases of consumers whose household budgets varied widely.

Labeling continued to be an important issue for canners well into the 1930's. The importance of accuracy and “truth” in labeling and advertising was the focus of the January, 1930 joint meeting between the National Canners' Association and the National Wholesale Grocers' Association because canners wanted consumers to be able to “purchase intelligently and without deception, foodstuffs of the particular quality and character desired.”¹¹⁰ This was

¹⁰⁸ “What the Women Buy,” in *American Food Journal* 11, no 12 (December 1916): 627. Also published in *Advertising Age*.

¹⁰⁹ “What the Women buy,” 627.

¹¹⁰ “Chicago Draws Great Convention Group; ‘Truth in Labeling,’ Canners’ Theme,” *Food Industries* 2, no. 2 (February 1930): 90.

during a heated debate concerning the McNary-Mapes bill that was before congress. The National Cannery Association sponsored the bill, which would amend the 1906 Pure Food and Drug Act in order to regulate the quality and establish measurable standards for all canned foods.¹¹¹ The “entire citizenry of these United States [was] bowled over by” a “health fad,” whereby manufacturers were taking advantage of the new science of vitamins and promoting the vitamin and health benefits of their foods.¹¹² According to the editors of *Food Industries*, an industry journal whose editors included university scientists and brand representatives from companies like Borden and the National Biscuit Company, the term vitamin had become synonymous for a sort of “magic. . . glorified medicine.”¹¹³ Also, the canned foods market was flooded with sub-standard product, which made quality canned food producers suffer in kind. Although canners argued that “there is nothing the matter with substandards. . . the food is wholesome,” the main issue was that “the consumers are always dissatisfied when they eat them.”¹¹⁴ The Mapes-McNary bill would ensure that consumers would know when they were purchasing a substandard quality product. This did not mean, however, that this grading and rating process would solve all the problems.

The proposed rating process and subsequent labeling of canned foods based on their quality was a tedious and somewhat subjective process. In *Food Industries*, L. Charles Mazzola described one option for grading foods based on techniques developed by government bureaus

¹¹¹ Susan White Junod, “Food Standards in the United States: The Case of the Peanut Butter and Jelly Sandwich,” in *Food, Science, Policy and Regulation in the Twentieth Century*, David F. Smith and Jim Phillips, eds., (New York: Routledge, 2000): 172. “Pending Federal Legislation of Especial Significance,” *Food Industries* 2 no. 1 (January 1930): 2.

¹¹² “Health Foods and Health Fads,” *Food Industries* 2, no. 2 (February 1930): 50.

¹¹³ Ibid.

¹¹⁴ “Two Congressional Bills that Should Become Law,” *Food Industries* 2, no. 3 (March 1930): 5.

and the Wisconsin Pea Packers' Association. Mazzola included a sample grading sheet for apples, and argued that this thirteen-point inspection sheet could evolve to minimize subjectivity and personal opinion because a numerical value was given to a specific agreed-upon characteristic such as color, flavor, texture, tartness, and uniformity of size.¹¹⁵ While, canned foods had been graded for many years, there was no consensus among canners about what certain gradations of quality actually meant, which resulted in consumers buying poor quality canned foods erroneously labeled "fancy" or "Grade A," which was the highest rating one could earn. At the end of 1930, the USDA and the newly formed Food and Drug Administration (FDA), with assistance from various industry representatives and home economists began to discuss the standardization of canned foods and appropriate labeling and wording that would be required on all canned food products.¹¹⁶

The designation of foods as "sub-standard" was also a problem, since most canners believed that having to label their products "sub-standard" would effectively be the kiss of death for their business. Indeed, the NCA pushed for the passage of McNary-Mapes not because they would be able to label their canned foods with Grade A or Fancy, but because they wanted to essentially push out lesser canners who produced inferior products—labeling would allow the market to take care of these canners and limit the competition for the big manufacturers. W. G. Campbell, the Chief of the FDA argued that canners needed to make their voices heard about how to phrase these sub-standard products, which the editor of *Canning Age* confirmed would be a "delicate piece of workmanship."¹¹⁷ While these products were admittedly of lesser quality,

¹¹⁵ L. Charles Mazzola, "Grading Foods by a Descriptive Method," *Food Industries* 2, no. 5 (May 1930): 214-215.

¹¹⁶ Paul Wooton, "Work on Canned Food Standards Makes Steady Progress," *Food Industries* 2, no. 10 (October 1930): 474. "Continuing Work on Canned Food Standards," *Food Industries* 2, no. 12 (December 1930): 570.

¹¹⁷ "What Are We Going to Do About It?" *Canning Age* 11, no. 10 (September 1930): 633.

canners needed to make sure to not make consumers think that the goods were dangerous. It was imperative that sub-standards be portrayed as “good, salable nutritive food, designed for the less affluent pocketbook.”¹¹⁸ Unfortunately, according to Nelson H. Budd, editor of *Canning Age*, canners held off on making their recommendations and waited for the federal government to call together a committee to evaluate and form a language for conveying the quality and standards of canned food products. “Far from being an indication of indifference,” he argued, “that seeming aloofness seems to imply full and implicit faith in the Administration.”¹¹⁹ Budd reported that the Administration favored the wording “Below U. S. Standards,” because it was brief and to the point, though Budd cautioned that such language would “require considerable consumer education,” so that they are not deemed wholly unsatisfactory and dangerous.¹²⁰

McNary-Mapes was not the definitive end in the debate over proper labeling. In fact, modernization of canneries and informative standardized labels came under the jurisdiction of President Franklin Roosevelt’s National Recovery Administration in June of 1933.¹²¹ The National Canners Association played an important role in developing an industry code, which would include an exhaustive list of canned food products and improved labor standards, along with the creation of a labeling committee whose purpose would be to retool all canned food labels.¹²² Called the President’s “Canning Code,” the focus on labeling was in response to consumer demand—a survey done by the National Association of Retail Grocers “questionnaired

¹¹⁸ Ibid.

¹¹⁹ Nelson H. Budd, “Editorial Comment,” *Canning Age* 11, no. 12 (November 1930) 701.

¹²⁰ Budd, 748.

¹²¹ Malcolm Muir, “The National Recovery Administration and Modernization of Canneries,” *Canning Age* 15, no. 1 (January 1934): 34.

¹²² “The Latest from the Code Authority” *Canning Age* 15, no. 8 (July 1934): 364. “As it Looks to the Editor,” *Canning Age* 15, no. 8 (July 1934): 365.

[sic] housewives in Minnesota and Illinois and found that 96% of them voted overwhelmingly for government standards.”¹²³ The deadline for a significant change in canned food labeling was September 27th, 1934, though a canners’ committee headed by Frank Gerber “balked at the use of the letter grades ‘A’, ‘B’, ‘C’, etc., which are favored by the N.R.A.” because the committee believed that such grades did not give enough information to consumers and the letter designations were “unenforceable and would tend to reduce quality to the minimum of a grade.”¹²⁴ The main problem was that though canners disapproved of the letter grade designations, no other compelling options were on the table. Frances M. Robinson, the secretary of an NRA administrator openly criticized canners with “laxity and obstructionism,” for their dismissal of the letter grading designations, though the NCA was quick to remind readers of *Canning Age* that the industry had been working on the issue of labeling “long before the NRA was dreamed of,” and that canners “immediately appointed a committee” to work on satisfying NRA legislation.¹²⁵ Although the NRA was declared unconstitutional by the Supreme Court in 1935, concern over labeling did not go away— both consumers and the canned foods industry were still convinced that until labels were a guarantee of what was actually in the can, the industry would still suffer the stigma of inferiority.

Still, even with changes and regulations in labeling, both from the federal government and the canned foods industry itself, none of this would matter if manufacturers did not put the money into educating the public about what these changes meant in regards to their products. In the early thirties—while the United States was slipping deeper into the Depression, a survey by

¹²³ “As it Looks to the Editor,” 365.

¹²⁴ Nelson H. Budd, “Definite Measures to Make Labels Informative Required by September 27,” *Canning Age* 15, no. 10 (September 1934): 438.

¹²⁵ “As it Looks to the Editor,” *Canning Age* 15, no. 10 (September 1934): 447.

the Associated Grocery Manufacturers of America determined that “more than half of the sixty-one largest food manufacturers. . . have increased their expenditures for advertising and sales promotion.”¹²⁶ Again, a mere ten years after the last aggressive canned foods advertising campaign, canners were still faced with challenges from the past.¹²⁷ This campaign was “educational in character, designed to dispel mistaken notions and existing prejudices against canned foods. . . . [in] housewives who are sadly lacking in knowledge of the tremendous variety of food products contained in cans, and of the high degree of standards that have been and are being placed on canned foods.”¹²⁸ The first “canned foods drive” was this massive national advertising campaign, and early returns suggested that it was successful. Advertising in the *Saturday Evening Post*, *McCalls*, *Good Housekeeping*, *Ladies Home Journal*, and local newspapers, the National Canners Association pushed the nutritional value of canned foods, arguing that “there is no line of “storage foods”. . .so full of necessary elements of nutrition as canned foods.”¹²⁹ Ads were focused on a “minimum coverage of at least 50 trading areas where live over 60 million of our population—where over 70 per cent of the retail grocery stores are located,” thereby saturating the local newspapers of nearly 70 cities.¹³⁰ According to F. J. Ross, in his address to the Annual Convention Meeting of the National Food Brokers Association and reprinted in the Convention Digest Issue of *Canning Age*, “[t]he canning industry will not have reached its goal until every woman and her daughters and granddaughters come to know that

¹²⁶ “Food Companies Increase Advertising,” *Canning Age* 12, no. 11 (October 1931): 618.

¹²⁷ Indeed, at the annual meetings of the National Canners Association, which typically lasted four days, at least three of the days contained plenary sessions concerned with “canning problems”, which typically focused on quality and spoilage. See “The Program in Detail,” *Canning Age* 13, no. 1 (January 1932): 18-21.

¹²⁸ “A Year’s Campaign to Boost Your Canned Foods,” *Canning Age* 12, no. 12 (November 1931): 634.

¹²⁹ “The Canned Foods Drive Clicks,” *Canning Age* 13, no. 1 (January 1932): 25.

¹³⁰ “A New Campaign to Boost Canned Foods,” *Canning Age* 13, no. 3 Convention Digest Number (February 1932): 132-133.

canned foods as Dr. Rosenau has said, ‘are the safest that come to our tables’—until they come to know what equally eminent authorities have discovered in their laboratories, ‘that canned foods have an equal or greater nourishing power than the same foods prepared at home.’”¹³¹ In fact, canners and their supporters believed that there was really no contest between fresh and canned foods, since at the time, fresh vegetables in some parts of the country were of poor quality or were scarce. Critics, like food columnist Rachel Dunaway Cox, however, singled out the major reason why canned vegetables would never outsell fresh: fresh vegetables tasted better. “The canner may argue till the crack of doom,” Cox explained, “that the fresh produce sold in city markets isn’t fresh but several days old and just as much preserved as the produce that comes in cans. The fact remains that the taste of the public prefers what it knows as ‘fresh’ produce.”¹³² Cox went on to suggest that “[w]hen a woman buys fresh produce, she looks at it and can tell to her own satisfaction whether it will please her. When she buys canned foods she buys blindly, perforce placing her reliance in either the brand or the grocer or both.”¹³³ What canned foods needed, according to some industry leaders, like J. C. Richendrfer, Secretary of the Apple section of the NCA, was a strong campaign to highlight what they deemed to be the realities of fresh foods—“carrots pulled in Mexico a month ago are called fresh today.”¹³⁴ Richendrfer argued that, “every basket, box, or bag of so-called fresh fruits that has been gassed to add color and so-called ripeness should be labeled with that fact.”¹³⁵ Others criticized the

¹³¹ “A New Campaign to Boost Canned Foods,” *Canning Age* 13, no. 3 Convention Digest Number (February 1932): 133-134.

¹³² Rachel Dunaway Cox, “Canners Can Compete with Fresh Foods, Says Foods Columnist,” *Canning Age* 13, no. 5 (April 1932): 283.

¹³³ Cox, 300.

¹³⁴ “Demands Labeling of ‘Fresh’ Products,” *Canning Age* 14, no. 3 Convention Digest Issue (February 1933): 135.

¹³⁵ “Demands Labeling of ‘Fresh’ Products,” 135.

canners themselves for emphasizing the “process” of food canning, which then in the consumer’s mind meant that canned food was a “processed fruit or vegetable.”¹³⁶

According to *Canning Age* and *Food Industries*, the results of the industry’s massive consumer education effort was beginning to pay off. Individual canned food manufacturers, like Del Monte, Libby’s and Campbell’s, in concert with the American Can Company, the Continental Can Company, and the National Canners Association banded together to inundate Americans with print advertisements and information materials that focused on the safety, health benefits, taste, and economy of commercially canned foods. Print advertisements, which would be the front lines of direct consumer education, will be discussed in Chapter five, for it was this educational technique that was most successful in making space for canned foods on more plates on American kitchen tables. If labeling and educating consumers about how to read a label was the first step, “Educating the educators,” like home economists, physicians, teachers, and the like also played a significant role in the canners’ educational campaign.¹³⁷ Companies like the American Can Company and Continental Can Company, and the National Canners Association spent thousands of dollars to publish short booklets on the benefits of canned foods, with the hopes that these educational treatises would institute a top-down shift in public perception of canned foods. American Can Company believed that these professionals were “responsible for influencing the diet habits of the American people,” and that in this era of experts, canners needed home economists and the medical establishment to back their claims that their foods were a safe and nutritionally sound investment.¹³⁸ Booklets like *More About Canned Foods for the*

¹³⁶ “Canneries Wash Their Necks and Ears,” *Canning Age* 10, no. 7 (June 1929): 481.

¹³⁷ Nelson H. Budd, “Canned Foods Promotion Pieces Total 7,000,000 in Four Years,” *Canning Age* 20, no. 13 (December 1939): 520.

¹³⁸ *Ibid.*

Home Economist, which was so widely requested that in 30 days over 50,000 copies were mailed across the country with more being printed, and *Facts About Commercially Canned Foods*, which was backed by the American Medical Association and “distributed by the American Can Company to doctors, dentists, nurses, and health officers,” were a huge hit with professionals.¹³⁹ By their estimates, over 675,000 medical professionals had received “the real facts about canned foods.”¹⁴⁰ But “Canco,” as the American Can Company was affectionately known within the industry, did not stop at publishing their booklets—they also sent representatives to professional conferences where they set up exhibits, even employing “specially trained nutrition workers” to attend conferences to field questions “from doctors, nurses, etc., emanating from this vast program of educational gospel.”¹⁴¹ Despite being in a depressed economy, consumption of canned foods had gone from “184 cans per family” in 1933 to “320 cans per family per annum” in 1939.¹⁴² Similarly, in one month the NCA sent out over 100,000 by request booklets to women who mailed off for their advertised canned foods booklet. In addition, store owners and clerks reported that in the days after the NCA ran corresponding ads in local newspapers, stores were “filled with customers wanting, buying canned foods.”¹⁴³ A store in Salt Lake City reported that in one day he sold “152 ½ cases of pineapple,” adding that “all I did was tie up with the ad

¹³⁹ American Can Company Advertisement *Canning Age* 17, no. 7 (June 1936): cover. American Can Company Advertisement *Canning Age* 17, no. 8 (July 1936): cover. American Can Company Advertisement *Canning Age* 17, no. 10 (September 1936): cover.

¹⁴⁰ Budd, 521.

¹⁴¹ Ibid.

¹⁴² Budd, 520.

¹⁴³ “N. C. A. Campaign off to Successful Start,” *Canning Age* 13, no. 5 (April 1932): 240-241.

in my windows.”¹⁴⁴ Manufacturers reported that they were “receiving a great many more five and ten and occasionally twenty-five case orders than we have for the past year.”¹⁴⁵ Grocers and chains also requested copies of Canco’s and the NCA’s booklets, using the booklets for both their salespeople and to institute educational seminars in their communities—all aspects of the industry were taking part in this massive re-education campaign.¹⁴⁶

By and large, the most critical alliance between canned food manufacturers and professionals was with home economists, who played a precarious role in the mediation of consumer needs and wants, and those of the canners. Isabel N. Young, of the Home Economics Division of Canco, in an address given at the Home Economics Section of the NCA Convention in 1937, argued that the best place to grow consumer confidence in canned foods was in America’s schools, since “youth is the time to break down prejudices and build up foundations of fact; and second, that the mothers are interested in what the children are learning at school.”¹⁴⁷ To be sure, Frank E. Gorrell, Secretary of the NCA applauded the efforts of home economists, argued that “there is practically no organized group of women in the country that does not have a definite program designed to give buying information to its members.”¹⁴⁸ While home economists were an organized force for consumer education, their goals and outlooks on canning and their own purpose was oftentimes a mixed bag. Home Economists both celebrated and critically tested commercially canned foods, and were instrumental in educating students and immigrant and rural populations in home canning, which was a direct competitor for

¹⁴⁴ “N. C. A. Campaign off to a Successful Start,” 241.

¹⁴⁵ Ibid.

¹⁴⁶ Budd, 527.

¹⁴⁷ Isabel N. Young, “Building Confidence in Canned Foods,” *Canning Age* 18, no. 4 (March 1937): 134.

¹⁴⁸ Frank E. Gorrell, “Secretary’s Annual Report,” *Canning Age* 18, no. 3 Convention Digest (February 1937): 93.

commercially canned foods. Beth Roberts, contributor to *Canning Age*, argued that if women could not be convinced of the “quality” and wholesomeness of commercially canned foods, she would instead insist on canning her own fruits and vegetables “tedious as that may be.”¹⁴⁹ Home economists also saw themselves going through a transition—from an outlook that leaned towards the principles of social hygiene, to a shift towards more acceptance of the differences in the various ethnic groups making up modern America.

¹⁴⁹ Beth Roberts, “Quality in the Can Best Weapon Against Home-Pack Competition,” *Canning Age* 20 no. 8 (July 1939): 336.

CHAPTER FOUR: EDUCATING THE PUBLIC: HOME ECONOMISTS, HOME CANNING, AND AMERICANIZATION THROUGH CANNED FOODS

It is not only educational but it deals directly with the very problems of living that are confronting everyone. . . . Everyone is discussing Home Economics.

—*Journal of Home Economics*, September, 1918¹

After labeling, educating the educators was the main point of focus for canners who hoped that home economists, extension workers, and community outreach services would help turn the tide in the fight over the tarnished reputation of canned foods. “The attitude of Domestic science teachers towards canned products,” argued Edward Melia, contributor to *Canning Age*, “should be of considerable interest to the canner. . . . To her classes, the Domestic Science teacher [is] the voice of authority.”² Canners believed that young people were the key to this cultural shift, because “[t]hey show none of the prejudice and reluctance of their mothers, shoppers a decade or so older.”³ “Grown up people,” he added, “just would not or could not respond to suggestions to change their menus.”⁴ Melia concluded by asking canners to consider that “the lessons taught to the school girls of today will be the common practice of the housewives of tomorrow.”⁵ Making positive strides in home economics courses throughout the country was an important, albeit complicated goal for canners. On the one hand, canners hoped that domestic scientists would willfully tout the economy, safety, and wholesomeness of commercially canned foods, but on the other, domestic scientists, also known as home

¹ Editorial, *Journal of Home Economics* 10, no. 9 (September 1918): 418.

² Edward Melia, “Canned Foods and Domestic Science,” *Canning Age* 5, no. 6 (May 1924): 438. Domestic scientist and home economist can be used interchangeably.

³ Melia, 437.

⁴ Melia, 438.

⁵ Melia, 464.

economists, used the process of canning foods at home as a way for women to save money and in the case of immigrants, become American. Home economists, therefore, were not a reliable ally for commercial canners and actually hindered canners' progress by sending mixed or oftentimes counter-arguments to the canners' overall message of the safety and efficiency of commercially canned-foods.

What emerges in this discussion about the purity, sanitation, and wholesomeness of factory manufactured canned goods over the “art” of home canning is a salient discussion of what it meant to be American during the interwar period. Instead of focusing on opening up markets for commercially canned foods, home economists used home canning as a way to teach immigrants to become American, and instill a spirit of thrift and patriotism during hard times. Home economists were consumed with social research, studying the food habits and daily lives of immigrant communities, while canners balked and focused their efforts on increasing the numbers of middle class buyers for their foods. There was an inherent disconnect between the needs of the canners and the educational interests of home economists, though there was some common ground. Home economists, like canners, embraced the science of bacteriology, believing that homemakers could learn its basic principles and use practical methods to make housekeeping more scientific. As a result, the field of domestic science, or home economics, flourished, and what historian Rima Apple has identified as “Scientific Motherhood,” became solidified as part of modern American culture.⁶ According to domestic scientists, the ideal mother listened closely to the words of her family physician, and anxiously poured over the nutritional values of the menus she selected making sure that the calorie content and vitamins and minerals were sufficient for her growing family. Mother could not just cook a Monday night

⁶ Rima Apple, *Perfect Motherhood: Science and Childrearing in America* (New Brunswick, NJ: Rutgers University Press, 2006) 2.

meal—she had to know how to stretch it into lunches for Tuesday and turn its remnants into a shepherd’s pie for Tuesday night. In addition, she had to be cognizant as to whether or not her husband would get enough calories to make it through his afternoon slump at work, and her 8 year old son would not catch that season’s cold. Home economists believed that they were part of the scientific community and therefore their purpose was to reinforce scientific motherhood and use the scientific method to understand the many ethnic groups that made their homes in the United States. Creating a market for commercially canned foods was not a significant part of their agenda.

Americans have always had a certain anxiety about how this new nation built on immigration would attain and maintain the level of cohesiveness needed to keep this great “experiment” afloat. Childhood education in citizenship, as numerous historians have pointed out, whether through brick-and-mortar schools or at the family hearth after the daily chores were completed, was identified as the key to nation-building. It was the young generation that could be molded into ideal Americans, and it was the job of women, both as mothers and as the teaching profession opened up to them in the nineteenth century, as teachers, to facilitate this. Many reformers in the late nineteenth and early twentieth centuries saw the children of immigrants, like the children of Native Americans, as the keys to Americanization. For home economists, the kitchen and what was served on the kitchen table were just as important in shaping a homogeneous national identity as civics class. New York school teacher Mollie Kelly explained that “The public school teaches American cooking and American ways of living. It respects all religions, but favors none.” The goal overtime, according to Kelly, and many others in the field of domestic science (and public education as a whole), was for these students to

eventually identify themselves as American.⁷ Moreover, “the family table,” according to the most well-known home economists Ellen Richards, was “one of the strong factors in social righteousness, and hence the beginning of reforms naturally and instinctively took the form of classes for the teaching of cooking.”⁸ While this certainly did not mean that young people were necessarily always willing to be educated, education, especially in domestic science, was paramount to “save our social fabric from what seems like inevitable disintegration.”⁹ “If the state is to have good citizens, productive human beings, it must provide for the teaching of the essentials to those who are to become the parents of the next generation. No state can thrive while its citizens waste their resources of health, bodily energy, time, and brain power, any more than a nation may prosper that wastes its natural resources,” Richards explained.¹⁰ A backwards kitchen, in other words, inhibited the nation’s progress and contributed to the supposed social crisis of the early twentieth century.

It almost goes without saying that the overall progress of the United States lay almost totally in the hands of young women, according to domestic scientists and many pundits and scientists who wrote for a popular audience. American culture during the interwar period placed heavy responsibility on young American housewives, since they were responsible for the health

⁷ “Teaching Domestic Science to Different Nationalities,” *Journal of Home Economics* 2, no 3 (June 1910) 271. Elmer V. McCollum has an entire section about “The Dietary Habits of Man in Several Parts of the World,” in his seminal work, *The Newer Knowledge of Nutrition*, which set the stage for an era of intense concern over the vitamin content of food. See Elmer Verner McCollum, *The Newer Knowledge of Nutrition: The Use of Food for the Preservation of Vitality and Health* (New York: The Macmillan Company, 1922) 386-435. For more on Elmer McCollum, see Harvey Levenstein, *Fear of Food: Why We Worry About What We Eat* (Chicago: The University of Chicago Press, 2012).

⁸ Ellen Richards, “Social Significance of Home Economics Movement,” *Journal of Home Economics* 3, no. 2 (April 1911): 119.

⁹ Richards, 122. Also, Richards remarked that young people “have gone out into the world with less and less of responsibility....not only do the young people show themselves ignorant, but they do not wish to learn. All classes of society show the lack of any appreciation of work as a *duty* or of any return owed to society.” 121-122.

¹⁰ Richards, 124.

of the home—and as concern over the health of soldiers in World War I had shown, the physical health of the American people was an important barometer of the saliency of the nation. Earlier reports from New York City health officials shocked the nation with news that American children were malnourished, which brought about school lunch programs and an increased interest in the diet of both native-born and immigrant communities.¹¹ Home economists asked if Americans should as a “civilized people allow our poor to be fed and housed worse than our domestic animals?”¹² They viewed education as the answer to widespread malnutrition, arguing that “the first duty should be to instruct mothers in the schools and the clinics, either by word of mouth or printed directions, as to which foods are best for the growing child.”¹³ Encouraging young women and girls to be successful (and to a certain extent contented) in housekeeping, which included nutrition and cooking, was paramount for the “happiness of the race,” and its health.¹⁴ According to *American Cookery* contributor Frances E. Gale,

There are women who, with the wonderful realm of home at their feet, let anarchy and chaos rule in the kingdom that should be theirs. Perhaps these women were little girls who never played at housekeeping and home-making, if such could be. More likely they have developed from the child whose dreams and ideals have been destroyed almost as soon as they were born, by the biting or stifling or unsympathetic atmosphere in which they tried to breathe. A child’s ideals are such gossamer things. They can be brushed away like a cobweb by a careless hand; yet, sheltered, left to grow, tenderly nourished and encouraged, they strengthen into silken threads, and later into very ropes, to which the adult soul may cling through stress and storm.¹⁵

¹¹ Harvey Levenstein, *Revolution at the Table: The Transformation of the American Diet* (New York: Oxford University Press, 1988): 109-120.

¹² “Malnutrition in School Children in New York City,” *Journal of Home Economics* 1, no. 4 (October 1909): 374.

¹³ “Malnutrition in School Children in New York City,” 371.

¹⁴ Frances E. Gale, “The Housewife in the Child,” *American Cookery* 28, no. 8 (March 1924): 587.

¹⁵ *Ibid.*

Gale's eloquent observation of the malleability of the female child, and especially of the child's capacity to maintain an orderly instead of chaotic household, echoed the concerns of *Science* magazine. During the 1910's and 1920's, *Science*, "a Weekly Journal devoted to the Advancement of Science," and the "official organ of the American Association for the Advancement of Science," housed within the Smithsonian Institute, advanced such popular ideas as race suicide, a favorite of Roosevelt Progressives.¹⁶ They also, however, tried to make a case for the importance of everyday knowledge of the hard/biological sciences. In 1926, *Science* published an address given by Professor James Graham Kerr for the British Association for the Advancement of Science titled, "Biology and the Training of the Citizen," which urged the importance of teaching science because it affects one of the basic necessities of humans: food. "It is unnecessary to emphasize at length the enormously important part which biological science plays in the life of our modern civilized state," Kerr began. "The provision of food for the community—crop raising, stock-breeding, the production of dairy products, fisheries, the preservation of food by canning and freezing, and so on—is obviously an immensely complicated system..." but he argued that citizens should be taught basic scientific principles in public schools, specifically because "offspring repeat the characters of the parent."¹⁷ In essence, the importance of science to food preservation was one that could be lost if educators did not harness the malleability of youth in order to further the "advancement of the race," even for scientists not necessarily tied to domestic science and home economics.

It was obvious that a healthy home could not be merely left to "instinct," as pointed out by Dr. Ira S. Wile, who's 1921 address before the Third General Session of the American Public

¹⁶ Self-described in the byline of *Science*. James Kerr, "Biology and the Training of the Citizen," *Science* 64, no. 1656 (Sept 24, 1926): 283.

¹⁷ Kerr, 285-286.

Health Association titled, “The Healthful Home,” was published in the *American Journal of Public Health* in 1922. For Dr. Wile, a healthy home was the product of a highly advanced society, “functioning through intelligent, constructive, social-minded legislation.”¹⁸ Crowded tenements, dilapidated structures, poor sanitation, and malnutrition were for Wile a community problem—not one of individual failure. In an enlightened society, the entire community “demand[ed] the protection of the weak in the interest of the strong.”¹⁹ Wile recommended a holistic approach to making society healthy—one that considered the biological, economic, social, educational, and political health of Americans. Biological aspects addressed aid to the disabled and mentally handicapped, while economic concerned the financial solvency of families and the ways that income determined the level of the household. Social health included those habits and cultural “attitudes” that shaped hygiene and well-being. Politics were important to a healthy home insofar as the political actions of the community sought to improve the health of the community—for example, passing laws to limit room occupancy.²⁰

Most important for Wile, and for contributors to *American Cookery* and *Science*, was the role of education in the health of the American home. “Natural instincts for self preservation,” determined Dr. Wile, “are inadequate in the face of modern conditions of living. Physical and mental hygiene are indispensable and the spread of knowledge concerning them is of the utmost concern to public-health administrators. It is evident that there are definite interrelations between the educational advantages of a home and the biologic and economic

¹⁸ Ira Wile, “The Healthful Home,” *American Journal of Public Health* 12, no 4 (April 1922): 298.

¹⁹ Ibid.

²⁰ Wile, 297-298.

characteristics of the home makers.”²¹ Clearly, to uplift the poor and malnourished, an aggressive commitment to scientific education was the key.

Immigrant families were an obvious target for welfare and educational projects because of the cultural stigma of uncleanness and ignorance of health that permeated American rhetoric from the 19th century forward. Immigrant populations were a favorite scapegoat of newspaper reporters and nativist politics because the inspections at ports of entry for new immigrants were on the whole disparaging and backed-up racial stereotypes. Historian Alan M. Kraut describes the shoddy examinations of Ellis Island physicians who inspected hundreds of immigrants a day, arguing that the sheer volume of inspections done daily prevented accuracy in diagnosis.²² In many cases, physicians relied on classical stereotypes of the “other.” In 1921, US Surgeon General Hugh S. Cummings, M.D., addressed the issues of poor immigrant health in his address before the American Public Health Association. The fear, according to Dr. Cumming, was that post-war typhus would make its way to the shores of the US once entry restrictions were raised. This fear was valid, Cummings argued, because “[f]or many years a very large number of emigrants from Central Europe have arrived at the port of entry of the United States in an inexcusably unkempt condition and a very large percentage of them were infected with vermin,” resulting in “a high percentage of vermin infestation reported amongst the foreign element in our larger cities.”²³ Thus, the emigration of various groups of people was shrouded in fear of

²¹ Wile, 297.

²² Alan M. Kraut, *Silent Travelers: Germs, Genes, and the “Immigrant Menace,”* (Baltimore: The Johns Hopkins Univeristy Press, 1994).

²³ Hugh S. Cumming, “The Situation Abroad as Regards Typhus Fever and Other Epidemic Diseases and the Possibility of their Importation into the United States,” *American Journal of Public Health*, 12 no. 2 (February 1922): 93.

contamination and the spread of communicable diseases. It was imperative that these groups were assimilated as quickly as possible in order to retain the health of the nation.

Were people of authority in American society fully vested in the idea that all immigrants must be assimilated? In *We Are What We Eat: Ethnic Food and the Making of Americans*, Donna R. Gabaccia argues that during the interwar period, culinary “intellectuals abandoned their notions of Americanizing immigrants and working-class outsiders and decided instead to celebrate culinary cultural pluralism.”²⁴ Historians have documented the drive among social reformers in the late nineteenth and early twentieth century to engineer a decidedly American diet, or way of eating, with the purpose of shaping American identity. Food and Health reformers had to deal with immigrants on a meager budget—according to Ellen Richards, a renowned domestic scientist, those making under \$500 annually would typically have between “5-15 cents per person per day [and] could purchase nothing canned, and little more than potatoes, rye meal, corn meal, wheat flour, barley, oats, peas, beans, salt codfish, halibut, meat at 5 cents per pound, oleomargarine, and skimmed milk.”²⁵ This diet, albeit pared down, was derived from a New England diet, which according to Gabaccia was the “model for modern American cooking.”²⁶ Each meal devised by Richards was measured for its cost-effectiveness and its nutrition punch, and for its reliability—the ability to recreate the same soup tureen after tureen, and even ladle after ladle, would give confidence to both working-class cooks that they were bettering the health of their families and give confidence to reformers that their educational

²⁴ Donna R. Gabaccia, *We Are What We Eat: Ethnic Food and the Making of Americans* (Cambridge: Harvard University Press, 1998) 123.

²⁵ Gabaccia, 126.

²⁶ Ibid.

techniques were succeeding in changing the diet of lower-class Americans.²⁷ In this way, the act of preparing a hearty New England crock of meat and vegetables educated the lower-class housewife, and could be seen as a ladder for eventual upward mobility towards modern civilization. Using the evolutionary terminology of the time, members of ethnic groups and the poor were supposedly still in a primitive state of development. Gabaccia refers to these groups as in a stage of “apprenticeship in American culinary life,” while middle-class Americans could enjoy processed, or canned-convenience foods because they had already served their apprenticeship either in home economics or through the educating force of women’s cooking magazines.²⁸ Moreover, the immigrant and indigent masses were seen as too primitive to appreciate the convenience and nutritive properties of canned goods. How could a working-mother spend wisely if her budget was to include canned goods? She barely had enough money to buy the necessities of calorie-dense grains and cuts of meat. The middle-class, however, already knew how to budget wisely (how else did they find themselves members of the middle class) so could be expected to be able to make an intelligent decision about whether or not to buy canned peaches for a weekend party. Middle-class Americans were exemplary of a civilized people who recognize canned foods as a better, more nutritious, more modern option, and had earned that privilege. Assimilating immigrant families, however, would not include priming them to purchase commercially canned foods, but instead teaching them the benefits of home canning.

When it came to the country’s ethnic population domestic scientists believed that education in healthful and safe food preparation would lift ethnic groups out of the bottom rungs

²⁷ Gabaccia, 126-127.

²⁸ Gabaccia, 127-128.

of society. It was seemingly impossible to separate public education and citizenship, and when home economics became a part of more secondary school curricula it was viewed as a civilizing and “integrating” force.²⁹ The air of paternalism clouded the rhetoric of domestic scientists, who believed that scientific knowledge, easily accepted by middle- and upper-class Americans was in a sense the domestic scientist’s messianic message that would save the masses from destitution and sickness. Immigrant groups needed to be educated about proper nutrition and hygiene because they could not be expected to take care of themselves. A significant part of this educational process included instructing immigrant families in the new science of home canning. Home canning using scientific methods would certainly prop up first and second generation immigrant families, and therefore uplift an entire mass of Americans, according to home economists.

Scientists and the NCA, on the other hand, openly disparaged home canning and seemed to equate home canning methods to the impoverished and unteachable foreigner—people whose business the canned food industry was not interested in obtaining. For example, in the second issue of the new scientific journal *Food Research*³⁰, University of Colorado bacteriologist Ivan C. Hall presented a thorough, scientifically researched analysis of deadly botulism outbreaks in the Western United States from June 1932 to January 1936. The Journal’s editorial board, including both main editors and associates, boasted the names of chemists, food industry professionals, nutrition researchers, home economists, and representatives of the United States Department of Agriculture (USDA) and the Food and Drug Administration (FDA). As an academic and specialist in bacterial food toxins, Hall, who had previously published two other

²⁹ Elizabeth Dyer, “Home Economics as an Integrating Force in Education,” *Journal of Home Economics* 21, no 7 (July 1929): 482.

³⁰ *Food Research* was renamed the *Journal of Food Science* in 1961.

articles on botulism outbreaks that occurred in 1929 and 1933, could both criticize and congratulate the past several years of effort put forth by state and federal public health authorities to put an end to this preventable cause of death. According to Hall, development of the botulinus antitoxin was both a laudable step forward for public health, yet its scarce availability in certain regions of the country was abominable. Moreover, he claimed that, “inspection of the names and circumstances of those involved in outbreaks of botulism suggests that they frequently belong to groups not reached by any kind of educational publicity.”³¹ Initially, this observation might suggest that Hall was using the names and information of the reports to make a socio-economic judgment about those people involved. Was Hall criticizing the lack of educational opportunities in poorer western communities? It appears that Hall went one step further by actually criticizing the intellectual capabilities of the ethnic groups involved. In his article, Hall relied on the reports and interviews collected by physicians, public health directors and inspectors, and several by members of the family effected by the outbreak, and what stood out to him as one of the most critical factors in each occurrence was the race of those involved. After assessing 14 outbreaks taking place in Colorado, New Mexico, Montana, Nebraska, and South Dakota, Hall summarized that “[i]nspection of the names of the families involved indicates that some of them belong to foreign races of low intellectual attainment and suggests that the education of these groups to the danger of eating improperly home-prepared and spoiled foods is likely to be an exceedingly slow process.”³² The only two races identified by name in the article were Mexican and Italian, with one father who was interviewed having “poor understanding of English” but with his native language unidentified. Of the fourteen outbreaks, 32 victims died, resulting in a mortality rate

³¹Hall, “New Outbreaks of Botulism,” *Food Research* 1, no 2 (March-April 1936): 172.

³² Hall, 195.

according to Hall of 82 percent.³³ Further, Hall concluded that there were “three distinct groups of housewives,” those who were intelligent, and were “well grounded in the fundamental principles of bacteriology as applied to home-canning,” those who were not familiar with bacteriology and used “antiquated ‘cold-pack’ or other inadequate methods of canning, but inspect the food and typically only the “human guinea pig” suffers, and a third group comprised of “people who are at the bottom of the ladder educationally, socially, and economically; who use the crudest methods of home-canning; who seem to be oblivious to the danger of eating spoiled foods; and who will apparently eat anything that looks like food if they can get it down.”³⁴ When housewives in this last category served home-canned foods, they undoubtedly produced several human and animal corpses after Sunday dinner.

Food Research received Hall’s article for the March-April 1936 issue on March 14, obviously wasting no time in making sure the piece made it to print in a timely manner. The point of the publication was to reiterate that home-canned goods were the source of disease, not commercially canned goods. By the 1930s, the National Cannery Association and other canned food industry leaders, like Carnation Milk Products, had waged a seemingly successful and informative advertising campaign to bulwark the poor reputation of commercially-canned foods in the American consciousness. “The canning industry has now begun to fight for itself,” declared the journal in January of 1921 in its report of the NCA meeting titled, “‘New Era of Wholesome Food’ Ushered in by Great Convention of Cannerymen,” which took its name from the conference opening address by President Walter J. Sears. Sears dedicated the convention to the “American housekeeper,” who was “the supreme judge of the court which is to pass finally upon

³³ Hall, 194.

³⁴ Hall, 197-198.

our supplies of human food. Her comfort and happiness, her rights and desires are more and more to determine the policies and practices of food producers.” Sears then humbly added, “[w]e welcome her to the deliberations of an industry whose struggle for better things and whose present program must appeal to her interest and intelligence.”³⁵ In one breath, the NCA seemed to be at the mercy of the homemaker, pledging to make a better product because as a consumer, and as an American, she has rights. Moreover, the housekeeper was supposedly quite smart and abreast of the importance of bacteriology and sanitation. The industry could no longer expect to get by with sub-standard operations, which also resulted in an industry campaign to label canned goods in regards to quality, to make the more conscientious canner stand out and give the homemaker the opportunity to choose the quality of canned good she could afford for her family. At the same time, the canning industry relied on similar categorical designations when it spoke to homemakers—the most “intelligent” could can their own foods successfully, but chose to purchase them because as enlightened Moms, they willingly accepted the rhetoric of canning as a “modern science,” and no longer a traditional homemaking art. Other women—specifically non-white women—would be regulated as socially backwards, archaic, un-American, and unable to understand the process of home canning. One would think that these supposedly “lesser” housewives would be exactly the women that manufacturers would target as possible consumers—essentially, American canners could have evoked a type of paternalism that would have protected the health of the underprivileged. In fact, in 1927 the NCA reported that “foreign groups...are as a class the lowest consumers of canned goods.”³⁶ Instead, companies

³⁵ “‘New Era of Wholesome Food’ Ushered in by Great Convention of Canners,” *American Food Journal* 16, no. 1 (January 1921): 7.

³⁶ E. G. Montgomery, “A Few Points Brought Out by the Canned Food Survey,” *American Food Journal* 22, no. 3 (March 1927): 97.

emphasized canned goods as the foods of tomorrow, declared pure and nutritious after diligent work by a long beleaguered industry. Acceptance of the authority of science was expected of white Americans, but was deemed incomprehensible for the ethnic American, a task that would be “an exceedingly slow process.”³⁷

In fact, though the canning industry identified immigrant communities in the United States as possible markets for canned goods, they did not move forward in targeting these groups—instead, they focused on middle-class white women. Clearly, immigrant families were buying some canned foods. In the “Canned Foods Review” of the *American Food Journal* a reporter using the pseudonym Canticle remarked rather bluntly on the lack of knowledge of American foods among immigrants. “All classes of people,” he began, “understand canned peas. The foreign or European element of our population is fond of peas and knows how to use them to advantage as well as canned tomatoes, but that element is very ignorant of the value and use of canned corn....It is not grown to any extent in Europe is therefore an unknown food product to hundreds of thousands of our population.”³⁸ In April’s “Canned Foods Market” report, market insiders reported that canned peas had been selling at “low prices—very low prices,” which may indeed be what accounted for canned peas showing up on the shelves of immigrant households, not advertising.³⁹ Cannery seemed to be much more interested in drumming up demand among foreign countries than among the immigrant families in the States, even though some industry leaders believed that increasing the consumption at home should have been of paramount importance. J. Mulligan, the editor of the industry weekly *The Canner*, argued that since the

³⁷ Hall, “New Outbreaks of Botulism,” 195.

³⁸ Canticle, “Canned Foods Review,” *American Food Journal* 11, no 3 (March 1916): 123.

³⁹ Canticle, “Canned Foods Review,” *American Food Journal* 11, no 4 (April 1916): 171.

Census Bureau had determined that there were over 105 million people in the United States, “every one of whom is a possible consumer of canned foods.”⁴⁰ He declared that it “would be a crime not to try to increase, yes double the consumption of canned foods,” because “man must eat.”⁴¹ However, according to Waldon Fawcett, contributor to *Canning Age*, since the Great War the USDA’s Bureau of Markets had focused extensively on marketing American foods overseas. Fawcett believed that over 90% of American canners were clueless about how lucrative foreign markets could be for canned goods, and suggested that canners instead promote their goods heavily in foreign countries.⁴² “Foreign consumers,” assured Fawcett, “thus treated to a convincing demonstration of the superiority of American canned goods, are manifestly desirous of continuing their patronage if they can secure the goods and can obtain them at prices that compare favorably with competitive quotations.”⁴³ The benefits of the war were that in the same way that American GI’s were introduced to canned foods while they were overseas, foreigners were also introduced to them and would now readily accept American canned goods, which in itself is ironic since the process of canning was born in France in the nineteenth century.⁴⁴ Fawcett himself goes on to discuss how American canned foods were once rejected by foreign markets because they were not equal in quality to canned foods packed in Italy, for example.⁴⁵ Edgar A. Foley, Commissioner of the USDA in London reported in *The Canner* that “American canned fruits have earned an enviable reputation for themselves in Great Britain. In all the

⁴⁰ J. Mulligan, “A Vast Field,” *The Canner* 51 (October 16, 1920): 48.

⁴¹ Mulligan, 48.

⁴² Waldon Fawcett, “Uncle Sam Develops Market for Canned Goods,” *Canning Age* 1, no. 9 (September 1920): 13.

⁴³ *Ibid.*

⁴⁴ Fawcett, 14.

⁴⁵ *Ibid.*

grocery and fruit shops one can see the well-known U. S. brands.”⁴⁶ Food Industries Contributor Walter Buchler looked to China as an ideal market for American canned foods, since “both the well-to-do and the poor” ate canned foods and American canned foods were of better quality than those canned in China, which “lack[ed] sanitary supervision and scientific principles.”⁴⁷ Fawcett admittedly refers to the development of foreign markets as a form of American “paternalism,” especially when arguing for the development of a market in South America.⁴⁸ While the connotation may not be present in the term for Fawcett, his suggestion that the US government and canners rely on missionaries as “the most potent ‘rooters’ for American canned goods,” makes such a connection impossible to ignore.⁴⁹ Overall, as J. Mulligan agreed, “larger foreign demand for American canned foods would be a godsend” to the struggling canned food industry.⁵⁰ The real “godsend” for canned foods, however, would have been to increase sales at home by focusing their marketing on all groups of American consumers. The canned foods industry could not rely on overseas sales alone to get them out of the red, and the only way this could happen would be to change public perception of the safety and wholesomeness of canned foods, a seemingly difficult task.

Though ethnic minorities were not seen as the appropriate market for canned foods, at least according to canned food manufacturers, these groups were the ideal students for domestic scientists, who saw as part of their civilizing mission to teach both native born and foreign born the science of homemaking. As Nancy Tomes briefly discusses in *The Gospel of Germs: Men,*

⁴⁶“American Canned Foods Favored in Great Britain,” *The Canner* 51 (October 23, 1920): 35.

⁴⁷ Walter Buchler, “China as a Market for American Foods,” *Food Industries* 2, no. 5 (May 1930): 211.

⁴⁸ Fawcett, “Uncle Sam Develops Market for Canned Goods,” 13-14.

⁴⁹ Fawcett, 15.

⁵⁰ J. Mulligan, “Foreign Outlet a Stabilizer,” *The Canner* 51 (November 13, 1920): 52.

Women, and the Microbe in American Life, “[b]y far the most dramatic lessons about germ life in the kitchen were delivered in home economists’ instructions about home canning.”⁵¹ The professional journal of the American Home Economics Association published articles pertaining to canning and bacteriology soon after its inception in 1909. When it began, the journal was only published five or six times per year, but within a few years the publication became a monthly. From its inception, the connection of science to the former “art” of domesticity was paramount for the journal. Contributors, many of them professors at state agricultural and mechanical schools, emphasized the idea that American civilization rested upon an open acceptance of the authority of science. To be sure, domestic scientists themselves fought aggressively at times to be recognized among their university peers as “scientists.”⁵² For example, in the second issue of the journal, high school chemistry teacher Mary Converse of Cleveland, Ohio argued, albeit briefly, for more actual hard science in the domestic science curriculum. In “Teaching Chemistry in Connection with Domestic Science,” Converse pointed out the “primitive” status of chemistry in the domestic science curriculum as of 1909, but foreshadowed the future of the field, where “the benefit and necessity of it [chemistry] will become more evident.”⁵³ President of the AHEA Ellen Richards reemphasized Converse’s plea, remarking just a few issues later in the journal that the future of the organization was found in “the willingness to learn.... a hearty support for investigation, for scientific research....[and] a belief that mental and moral

⁵¹ Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge, Harvard University Press, 1998), 149.

⁵² For more on the professionalization of home economics, see Megan Elias, *Home Economics in American Culture*, (Philadelphia: University of Pennsylvania Press), 2008; Laura Shapiro, *Perfection Salad: Women and Cooking at the Turn of the Century* (New York: The Modern Library, 2001); Sarah Stage and Virginia B. Vincenti, eds., *Rethinking Home Economics: Women and the History of a Profession* (Ithaca, NY: Cornell University Press, 1997); Carolyn M. Goldstein, *Creating Consumers: Home Economists in Twentieth Century America* (Chapel Hill, NC: The University of North Carolina Press, 2012).

⁵³ Mary Converse, “Teaching Chemistry in Connection with Domestic Science,” *Journal of Home Economics* 1, no.2 (April 1909): 197.

development are affected by physical environment; that it is not beneath science or philosophy to take note of the consequences of daily food and shelter and the problems of cleanliness.”⁵⁴ For Richards, and for many in the AHEA, science was the answer to the problems plaguing American society. Richards closed with an evocative insistence that readers have “Courage—Faith in the evolution of the race—Progress by the very means which seem at first sight to destroy all cherished ideals. This courage can only come through a basis of scientific truth, that truth which will, in the end, prevail.”⁵⁵ Science, it seemed, would inevitably be the redeemer that Progressive reformers were looking for.

The *Journal of Home Economics* began to push the importance of bacteriology alongside chemistry as part of home economics courses by the end of 1910. According to H. W. Hill, MD, Director of the Division of Epidemiology at the Minnesota State Board of Health, since the field of public health was preoccupied with “the grosser, more imminent, more spectacular, more immediately tragic problems of ...infectious diseases,” it was up to domestic science to ensure that mothers understood bacteriology.”⁵⁶ For Hill, the key to American health was teaching mothers about how germs were transferred, and how bacteria grew, because “bacteriology alone will point the way to real cleanliness.”⁵⁷ Hill was quite aggressive in his indictment of women, claiming that the entire problem of communicable disease was the ignorance of mothers who unknowingly spread germs and “discharges,” around their families and communities. Hill urged the government to “strike at the sources, the woman at the means of the spread,” through hard-hitting campaigns to educate women about bacteria. In fact, the USDA published a 16 page

⁵⁴ Ellen Richards, “The Outlook in Home Economics,” *Journal of Home Economics* 2, no. 1 (February 1910): 17.

⁵⁵ Richards, 19.

⁵⁶ H. W. Hill, “Teaching Bacteriology to Mothers,” *Journal of Home Economics* 2, no 6 (December 1910): 635.

⁵⁷ Hill, 639.

instructional bulletin on canning in 1909 that included a very brief discussion of sterilization and the spread of bacteria during the process of canning. The whole “secret” of canning was boiling the jars long enough so that all bacterial spores were killed. “If the housewife will only bear this in mind,” author J. F. Breazeale, of the USDA Bureau of Chemistry, “she will be able with a little ingenuity to can any meat, fruit, or vegetable.”⁵⁸ The USDA’s publication was quite lacking in practical information about boiling times or how to identify a spoiled canned food, yet assured women that “[i]f you follow the directions here given carefully, you will have no difficulty whatsoever.”⁵⁹ Sixteen pages were hardly enough to properly educate homemakers in scientific canning. The results were hundred of reports of botulism epidemics in homes across America, as reported by scientific researchers and newspaper reporters during the period.

Despite the prevalence of food poisoning outbreaks from 1910-1920, the *Journal of Home Economics* still advocated home canning for all housewives. In “Some Recent Experiments in the Teaching of Foods and Sanitation,” (1914), Cora M. Winchell, a home economist from Columbia’s Teachers College, presented the findings of several experiments in the science of home economics, including one experiment that students followed to test the palatability of several varieties of canned foods. Amy Logan, a teacher of home economics at the Horace Mann School in New York City, set up a tasting/debate exercise pitting commercially canned foods against home canned. Students tasted tomato sauce they had canned previously and a can of commercially prepared sauce, and then students were broken up into debate teams and given two weeks to come up with debating points for each side. The side in favor of home canned foods used as their points “better flavor of home canned products, individual preferences,

⁵⁸ J. F. Breazeale, *Canning Vegetables in the Home*, USDA Farmers’ Bulletin 359, May 10, 1909, 7.

⁵⁹ Breazeale, 16.

assurance of purity, and the housewife's control of sanitary conditions.”⁶⁰ The other side argued that “commercial goods generally cost less; that they save labor in hot kitchens, that they are always procurable at the grocer's, that the large canneries with modern equipment secure better sterilization than is secured in many homes, and provide perfect cleanliness.”⁶¹ Foods canned and prepared at home won the debate, as students on the home prepared side countered that “if a ‘housewife did not care to keep her kitchen clean and allowed kittens to play about, she deserved to eat grocery-store mince pies!”⁶² The findings of this debate suggest that commercially canned foods were believed to be a punishment of sorts, and that their time and labor saving qualities were not seen as worth the sacrifice.

The *Journal of Home Economics* expressed a similar finding in the article “The Comparative Cost of Home Prepared and Commercially Prepared Foods” (1916). This article, presented by Leona C. Frechtling and Mary R. Betz, two students of home economics, sought to “determine whether it is more economical and desirable to prepare foods at home or to buy them ready prepared.”⁶³ The students considered cost of preparation, including fuel and packaging materials, as well as if the product was of similar in quality, for a “low priced but very undesirable product” was not worth the savings.⁶⁴ For the canned goods inspected, the students found that there was “a marked difference in both price and quality,” adding that “commercial

⁶⁰ Cora M. Winchell, “Some Recent Experiments in the Teaching of Foods and Sanitation,” *Journal of Home Economics* 6, no. 3 (June 1914): 239.

⁶¹ Ibid.

⁶² Ibid.

⁶³ Leona C. Frechtling and Mary R. Betz, “The Comparative Cost of Home Prepared and Commercially Prepared Foods,” *Journal of Home Economics* 8, no. 3 (March 1916): 133.

⁶⁴ Ibid.

goods are not so desirable as the home product, and have a characteristic taste.”⁶⁵ Commercially canned peaches were “hard and rather tasteless,” while commercially jarred grape jelly was “gummy and rather tasteless.”⁶⁶ The young women concluded that “in almost every instance it is cheaper and more satisfactory to prepare foods at home.”⁶⁷

World War I brought a new concern about the importance of home canning in American homes. In June 1917, O. H. Benson, of the United States Department of Agriculture brought home canning into focus in “The Mother-Daughter Home Canning Club.” Benson was the author of the USDA’s second attempt at educating housewives about scientific canning in Farmers’ Bulletin 839 and 853, published in 1917 and 1918, respectively. In his article in the *Journal of Home Economics*, placed as the first article in the June issue, highlighting its importance, Benson argued that the most efficient way to teach the science of canning to American mothers was to go through their daughters. Though canning was the method of instruction, the overall purpose was to educate both mothers and teachers in the new science of nutrition and canning, which was part of a larger impetus to effect social change. According to Benson, “mother needs the fellowship and viewpoint of the young girl in order that she may be in touch with the educational progress of the day; with the social changes characterized by the interests and activities of the girl as she comes fresh from classroom laboratory, and the instructor of the modern school. The mother needs the youth, optimism, and dream life of the girl.”⁶⁸ Clearly, the daughter (or a girl who has an older sponsor) was the gateway between

⁶⁵ Frechtling, 134.

⁶⁶ Frechtling, 135.

⁶⁷ Ibid.

⁶⁸ O. H. Benson, “The Mother-Daughter Home Canning Club,” *Journal of Home Economics* 9, no. 6 (June 1917): 251.

science and the home. At the same time, however, Benson argued that the girl also needed the older woman. The mother had time on her side, and could provide “judgment, the decision, the benefit of years of study, experience, observations, in order to save her from making the mistakes and perhaps experiencing much of the defeat and grind which has haunted the life of the adult mother.”⁶⁹ Benson designed what was essentially a community education course that guided the pair through successful canning, using scientific knowledge to make an efficient home while maintaining the wisdom of the older generation. Moreover, other topics were to be addressed in these clubs, such as the care and feeding of infants, how to keep a sanitary home, and the importance of fresh air and clean water.⁷⁰ Canning was, in a sense, the gateway for education in efficient and scientific housekeeping. At the end of Benson’s contribution, editors attached a copy of president Woodrow Wilson’s speech “Do Your Bit for America,” given on April 15, just 9 days after the declaration of war. In it, Wilson emphasized the need for adequate food for armies, for it was “the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and every woman assume the duty of careful provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring.”⁷¹ For Benson, and the *Journal of Home Economics*, home canning had become important for social progress, and now to save American resources during wartime.

In light of Wilson’s declaration, the July 1917 issue of the journal feared that home canning had gone out of fashion with homemakers. Were younger housewives relying too much

⁶⁹ Benson, 252.

⁷⁰ Benson, 253.

⁷¹ “For Every Household,” *Journal of Home Economics* 9, no. 6 (June 1917): 256.

on convenience foods? According to the one-page announcement preceeding the journal's editorial section, women of 1917 "rarely practiced" home canning, especially due to the accessibility of commercially canned foods which saved women precious time and sweltering labor.⁷² The short article recommended the USDA canning bulletins and earlier issues of the Journal, promoting the "new" process of cold pack canning and older methods, though it is unclear as to which Department of Agriculture bulletin the journal deemed to possess "careful directions" for the process, and the earlier issues of the journal, as already discussed, were not explicit in its instruction.⁷³ Moreover, contributors were concerned about the decrease in home canning because home canning was now seen as a positive way for women to conserve much needed foodstuffs on the homefront and ensure that American soldiers and the Allies had enough rations. President Woodrow Wilson's advice for women at home was to "eliminate waste and extravagance."⁷⁴ The United States declared war on Germany in April of 1917, and in the very next issue of *American Cookery* for June-July 1917 the editors included instructions about how to home can asparagus, peas, beets, string beans, spinach, and apples, and basic instructions in canning methods, from how to use a steam cooker, to the selection of fruits and vegetables.⁷⁵ The next issue followed suit, including instructions for canning cauliflower, squash, pumpkin, delicata, grape juice, and sweet corn, and the editors published reader questions about cold-pack

⁷² "Canning and Preserving," *Journal of Home Economics* 9, no. 7 (July 1917): 338.

⁷³ Ibid.

⁷⁴ "Do Your Bit," *Journal of Home Economics* 9, no. 5 (May 1917): 231. Woodrow Wilson: "This is the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and every woman assume the duty of careful provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring." Benson, 256.

⁷⁵ Janet M. Hill, "Seasonable and Tested Recipes," *American Cookery* 22, no. 1 (January 1918) 40-41.

canning.⁷⁶ Readers were also provided with advertisements for canning supplies, such as an entire “canning outfit,” which included an extra-large pot and rack for submerging glass jars in boiling water at once.⁷⁷ Expectedly, *American Cookery* appeared to be filling a role as educator, giving readers tested and proven information and products that have “been used in our own kitchen for the past twelve years without the loss of a single can.”⁷⁸ Home canning was part of an obligatory patriotism on the part of housewives—it was expected that as an American, women of all backgrounds would can again, like their grandmothers did. Canning in World War I, however, had the benefit of science. It was up to educators and domestic scientists to dilute the science of canning into language that was easy for the everyday housewife to understand, yet authoritative enough that homemakers understood that preserving food now had a scientific method and bacteriology was a term she should be very familiar with. Perhaps in an attempt to address this oversight, in the September issue the *Journal* reprinted a canning chart from the University of Wisconsin for most fruits and vegetables, including blanching times and processing times in boiling water.⁷⁹ The *Journal of Home Economics* hoped to reawaken homemakers’ interest in domestic “arts,” whilst at the same time encouraging them to do so with the backing of new science. In a sense, it straddled an ambiguous territory—one that did not aggressively seek to replace traditional cooking with newer methods, but instead sought to use modern science to “verify the ‘doings’ of the grandmothers,” in the interest of patriotism as well as economy.⁸⁰

⁷⁶ Janet M. Hill, “Seasonable and Tested Recipes,” *American Cookery* 22, no. 2 (February 1918): 121.

⁷⁷ Butler Steel Products Advertisement, *American Cookery* 22, no. 2 (February 1918): 150.

⁷⁸ Hill, 144.

⁷⁹ “A Chart for Canning,” *Journal of Home Economics* 9, no. 8 (September 1917): 426.

⁸⁰ Anna Barrows, “Editorial,” *Journal of Home Economics* 10, no. 1 (January 1918): 39.

These attempts to renew interest in home canning saw the *Journal of Home Economics* address what various media outlets across the country had begun in the 1910's to refer to as the "canning problem." Grace Dietz, contributor to the *Journal of Home Economics* from Firth, Nebraska, addressed the issues concerning the canning of meats and certain hard to can vegetables in "The Home Canning of Meats and Vegetables," (1915). Deitz pointed out that most people did not recommend that women can meats and vegetables like corn and pumpkin because home canning set-ups could not "secure the higher temperatures required to sterilize these products."⁸¹ Dietz and her canning club in Nebraska had successfully canned over 120,000 quarts of meats and hard to can vegetables, and hoped that her techniques could help readers who lived in areas where access to fresh meat was difficult.⁸² She added that "no chemicals, secret mixtures or complicated recipes are necessary," an obvious jab to hucksters who touted canning compounds that would help preserve meat, and also a stab at commercially canned meats, which had been faced with a barrage of indictments about chemical preservatives.⁸³ Her method employed steam pressure in a large homemade boiler.

In the July 1918 issue of the journal, contributor Elizabeth F. Genung of Simmons College sought to set the record straight concerning which canning methods were scientifically superior. After a brief and simple discussion of molds, yeasts, and bacteria, Genung explained why canning fruits were safer than canning vegetables—bacteria were less likely to grow in canned fruits because they were typically packed in sugar, and bacteria had a more difficult time

⁸¹ Grace Deitz, "The Home Canning of Meats and Vegetables," *Journal of Home Economics* 7, no. 6 (June-July 1915): 319.

⁸² Ibid.

⁸³ Ibid.

growing in a sugared environment.⁸⁴ This meant, according to Genung, that vegetables were easily contaminated (growing in soil) and would promote the growth of bacterial spores. She recommended a pressure cooker for vegetables, but lamented their expense and concluded that “[t]here is no sure way to preserve certain vegetables.”⁸⁵ Moreover, she concluded that “[i]t is difficult to lay down a set of rules that will prove infallible under all conditions with all workers....The problem of home canning has scarcely been touched in the bacteriological laboratory; therefore, it cannot be said that any method is sure.”⁸⁶

After Genung’s less than enthusiastic analysis of popular canning methods, she explained the types of spoilage found in canned goods, specifically flat sours, putrefaction, and botulism, and supplied the reader with a list of vegetables that seemed to be more difficult to can successfully, such as greens, peas, and corn. Her summary, attached at the end of the article, is a surprising departure from what the reader might have expected. Instead of recommending that housewives buy more commercially-canned foods, or demanding that housewives stop the process of home canning until further scientific analysis could be done on improved methods, she encouraged women to take part in the scientific process. Genung urged women to take notes of their successes and failures in canning and forward that information to their local agricultural agents.⁸⁷

⁸⁴ At this time there is rationing on sugar, so the government wants people to “eat less [sugar] and add to the National surplus for canning.” “How You Can Help,” *Journal of Home Economics* 10, no. 9 (September 1918): 388b.

⁸⁵ Elizabeth F. Genung, “For the Homemaker: A Consideration of the Canning Problem,” *Journal of Home Economics* 10, no. 7 (July 1918): 325-326.

⁸⁶ Genung, 327.

⁸⁷ Genung, 333.

While smart middle-class women were debating whether home canned products were more economical and better tasting than commercially canned, home economists were also using home canning as a method to assimilate and provide better nutrition to immigrant families. Home Economist Elsie M. Routh described her experience in using canning to teach “women who scarcely understand even the English words used in printed directions” American customs and language in “An Experiment in Teaching Citizenship,” (1918).⁸⁸ According to Routh, the students who came to the Haines Practice School in Chicago were “of Italian, Sicilian, Lithuanian, Croatian, and Dalmatian birth.”⁸⁹ In these classes, women usually brought young children to act as their interpreters, and Routh and other teachers served foods and drinks during the teaching lesson in order to help the students make connections between the exercises and the finished product. Teachers also used the opportunity to show immigrant mothers examples of balanced meals for children and youth, and various community speakers, like the wife of an Italian physician spoke on topics like “cooperation between home and school” and sanitation.⁹⁰ Canning, therefore, could serve two purposes. It could better the nutritional profile of the meals of immigrant families by providing vegetables in times of scarcity, and home canning could also be a tool to indoctrinate and Americanize immigrants, making them more familiar with American education, bureaucracy, and the American diet.

During the 1920s and 1930s, the *Journal of Home Economics* published numerous reports based on research done by nutrition workers to highlight what they believed was a

⁸⁸ Elsie M. Routh, “An Experiment in Teaching Citizenship,” *Journal of Home Economics* 10, no. 7 (July 1918): 311.

⁸⁹ Routh, 312.

⁹⁰ Routh, 313. Similar techniques were used in the South through “tomato clubs” to bring up rural girls out of poverty. See Elizabeth S. D. Engelhardt, *A Mess of Greens: Southern Gender and Southern Food* (Athens, GA: University of Georgia Press, 2011), 83-117.

serious problem of malnutrition and disorder among “the foreign family with the very small income.”⁹¹ While their goals were to teach scientific housekeeping, which included safe preservation of fruits and vegetables, home economists used these educational experiences to engage in sociological experiments and case studies that they believed would ultimately add to scientific and anthropological discourse about the lifestyles of different ethnic groups in America. The results of a study of 105 “foreign” families (though they include African Americans) in New York City done by Columbia University’s Teachers’ College students suggested that racial difference among families played a significant role in the quality of nutrients received. The main ethnic groups studied were African Americans, Jews, and Italians, with a fourth “miscellaneous” group consisting of Poles and Slavs. Their report showed that 50% of Italians and miscellaneous ethnicities took in enough calories, which they believed equaled “3000 calories per man per day.” Only 30% of the Jews consumed 30% of the daily recommended calorie totals, and only 19% of African Americans, though they spent more on food, met their calorie requirements.⁹² The students also analyzed the amount of money families spent on food, and as a result concluded that economic condition had a much more significant impact on dietary deficiencies than race. One would assume that based on this evidence, the students would conclude that it was more important to focus energies on economic betterment. Instead, they concluded that money should be put towards individually educating immigrant families about the nutritional and financial bargain of milk in the diet, for “it would seem to be a much wiser plan to spend money for instruction of the mothers than to spend it later as

⁹¹ “Differences in Dietary Customs,” *Journal of Home Economics* 12, no 9 (September 1920): 397.

⁹² “Differences in Dietary Customs,” 406.

charity.”⁹³ Thus, researchers still focused in on the inadequacies of dietary culture, not the economic disadvantages brought on by racial prejudices.

Despite assertions to the contrary, Americanization was still a main goal of home economists in the 1920s. In December of 1920, the *Journal of Home Economics* started an informative three part series called “The Food of the Immigrant in Relation to Health,” which consisted of articles to be published by New York publisher Harper & Brothers in a series on Americanization. The authors of this introductory article (which was strategically placed as the first article in the December issue) insisted that food was the gateway for Americanization of immigrants, since “[a]lmost their first thought on landing is something to eat.”⁹⁴ For both the hungry, travel-weary immigrant, and the anxious home economist, the first few weeks of arrival were critical. The authors argued that since life in America was so different from home—in climate, jobs available, housing conditions, religious practices, social norms—immigrants needed to change their diets just to thrive. It was imperative that educators learn the traditional foods found in different immigrant communities not because of the cultural value of their dishes, but to rank and classify their traditional foods based on nutritional value and then teach the newly arrived a better way to eat.⁹⁵

To be sure, home economists may have used a more gentle approach than some other Americanizing institutions. Davis and Wood complained that in “hospitals and dispensaries,” for example, “we usually find only American foods described for diets,” where directors

⁹³ “Differences in Dietary Customs,” 411.

⁹⁴ Michael M. Davis, Jr. and Bertha M. Wood, “The Food of the Immigrant in Relation to Health,” *Journal of Home Economics* 12, no 12 (December 1920): 517.

⁹⁵ Davis and Wood, “The Food of the Immigrant,” 518.

asserted that “They should learn to eat American foods if they are to live here.”⁹⁶ They use an anecdote from the flu epidemic of 1918, where gallons of American soups were left uneaten and eventually poured out because immigrants detested the flavors, to explain that “when a person is ill and needs a special diet, it is no time to teach him to eat new foods.”⁹⁷ The authors’ approach is more nuanced. In this first article, the authors highlight the diet of immigrants from Armenia, Syria, Turkey and Greece, or the “Near East,” who they describe as so harmonious that “it is difficult to distinguish between work and recreation among these people.”⁹⁸ Their diet is described as plentiful in milk, grains, meats, fruits, and vegetables, and although it was “not highly spiced or flavored. . . is a very fat diet.”⁹⁹ Because these ethnic groups, according to the authors, did not generally work physically demanding jobs in the US, instead starting small businesses such as fruit stands, they had more money available to purchase milk. Overall, the authors commend the diet because it echoed that of what nutritionists in the 1920s deemed suitable. For Davis and Wood, educators and officials needed to understand the immigrant instead of condemn his or her diet and force them to completely overhaul their daily food intake.

Throughout this series, Davis and Wood showcase Turks, Poles, Jews, and Italians, though in a footnote the authors noted that a book would be published on immigrant diets and would include an analysis of Mexican, Portuguese, and Hungarian foods.¹⁰⁰ In a summary of their findings, the authors concluded that their research would be useful as a method to

⁹⁶ Ibid.

⁹⁷ Davis and Wood, 519.

⁹⁸ Davis and Wood, 520.

⁹⁹ Davis and Wood, 521.

¹⁰⁰ Davis and Wood, 517. Wood’s book “Foods of the Foreign-Born in Relation to Health” was published in 1929 (second edition) by M. Barrows and Company in Boston.

“enlighten Americans regarding the practical utility and enjoyability [sic] of foreign foods,” though the authors aren’t clear about how this information would be disseminated to the nation at large, other than by printing textbooks and pamphlets. The authors do not identify the power of public advertising in softening public perception of foreign foods. They also express a desire to nurture a “mutual understanding and sympathy between the American-born and the immigrant,” but this sympathy for the immigrant does not extend to the economic condition of the immigrant, but merely on the immigrant’s nutritional ignorance.¹⁰¹ In fact, they argue that the “the great practical interest which everybody has in food should be made use of in the teaching of English, “unarguably pointing to their belief that food was the gateway to Americanization. Through an “American Homemaking Primer,” the authors hoped that newly arrived immigrant women could be easily instructed in “what to buy, how to use American stoves and American utensils, and introducing the best American foods the reader.”¹⁰² How immigrants who knew little English would understand these primers is unclear.

During the years between the two world wars, Americanization of the immigrant was cloaked under the name of cultural studies. Though researchers claimed to be presenting the findings of family studies done by educators in community home economic programs and through university extension programs in an objective, “scientific” manner, they still carried the prejudices of their forbearers. Examinations of the food choices of immigrants to America were oftentimes occasions for educators to point out the nutritional deficiencies of the immigrant diet, and by extension bolstering the United States’ hegemony in the world of nutritional science.¹⁰³

¹⁰¹ Davis and Wood, “The Food of the Immigrant in Relation to Health,” *Journal of Home Economics* 13, no 2 (February 1921): 72.

¹⁰² Davis and Wood, 73.

¹⁰³ Mary L. Schapiro, “Jewish Dietary Problems,” *Journal of Home Economics* 11, no. 2 (February 1919): 47-59. This series concluded in April of 1919.

As late as 1943, the journal published field reports taken from visits with the poor in the Southeast, painstakingly identifying the inadequacies that were still widespread. It is not until 1945 that the journal and the home economics association came out aggressively about ending discrimination and celebrating the plurality of American society.¹⁰⁴

For the *Journal of Home Economics*, it was at least at some level important for students, domestic scientists, and the native-born to learn “the practices, habits, and attitudes of the leading national groups to prepare the students for intimate and helpful contacts.”¹⁰⁵ The actual curriculum supported by contributors to the *Journal* told a different story. A S. P. Breckinridge of the University of Chicago advocated that students spend much of their coursework reading about different cultures instead, and the books she recommended were hardly objective in their analyses of various cultural lifestyles. Breckenridge recommended read such works as physician Howard P. Kennard’s *The Russian Peasant*.¹⁰⁶ Kennard claimed to live among the Russians, especially the peasants, and therefore could articulate a more nuanced understanding of the customs and traditions of the people observed in an almost scientific manner. Of the Russian peasant, Kennard surmised “ [h]is crass stupidity makes it impossible to treat him as a sensible being. He does not understand cleanliness. He is uncultured, uneducated, ignorant of the most elementary facts known to babes in other countries of the West and the East, and buried in the mire of stagnant callousness and hopeless indifference.”¹⁰⁷ Though Kennard puts much of the

¹⁰⁴ Mary-Jane Grunsfeld, “Intercultural Relations: A Symposium,” *Journal of Home Economics* 37, no. 7 (September 1945): 406-411.

¹⁰⁵ Editorial, “Methods of Americanization,” *Journal of Home Economics* 11, no. 2 (Feb 1919): 85.

¹⁰⁶ In May of 1919, S.P. Breckinridge, became Chief of the Division of Adjustment of Homes and Family Life, Study of Methods of Americanization, Carnegie Corporation

¹⁰⁷ “Comment on Current Books,” *New Outlook* 89, no. 9 (June 27, 1908): 489. *New Outlook* was a weekly magazine published in NYC from 1870-1935, ranked #3 in 1900 of weekly journals of news and opinion.

blame for the peasants' "ignorance" on both the church and the government of Russia, his insistence that their condition made it "impossible to treat him as a sensible human being" suggests that Kennard was doubtful that inroads could be made to civilize this group of people.¹⁰⁸

Breckenridge recommended two books on the Japanese: University of Kansas professor Harry Alvin Millis's *The Japanese Problem in the United States: An Investigation for the Commission on Relations with Japan Appointed by the Federal Council of the Churches of Christ in America* (1915), and University of Kyoto Lecturer Sidney Lewis Gulick's *The American Japanese Problem: A Study of the Racial Relations of the East and West* (1914).¹⁰⁹ Even the titles of these two "studies" illustrate the lack of "scientific objectivity" in Breckenridge's curriculum. As someone immersed in the culture of Japan, one would assume that Gulick's work would be closer to one of cultural relativism. Yet, Gulick describes Japanese immigrants as a "swarm" that "must not be allowed to overturn our civilization nor be permitted to turn us into Asiatics by ruinous economic competition."¹¹⁰ The language and imagery here is no mistake—the Japanese are like a plague of damaging insects, or disease carrying rodents so vile that their sheer numbers threaten to dismantle American civilization. Claiming to speak for the "yellow man," Gulick argues that while the Americans were attempting to exclude and reduce the Asian threat, the Japanese were learning the ways of the West and readying

¹⁰⁸ "Comment on Current Books," 489.

¹⁰⁹ Millis was commissioned by the Federal Council of the Churches of Christ in America to write his study, and Sidney Gulick served as the Council's "Representative of the Commission on Relations with Japan".

¹¹⁰ Sidney L. Gulick, *The American Japanese Problem: A Study of the Racial Relations of the East and West*, (New York: Charles Scribner & Sons, 1914), 5.

themselves to “take our rightful dominant place among nations of the earth.”¹¹¹ He added that “For we are inherently superior to the white man, not only in economic efficiency, but in brain power, general culture, and moral character.”¹¹² By characterizing the Japanese as jingoistic and therefore threatening, Gulick sets up his attack on US immigration policy. Exclusion, he argued, would only heighten brewing hostilities. Americans, according to Gulick, “must deal with Orientals as we do with members of other nations. Our international policy must be universal and free from all race discrimination.”¹¹³ It was not, however, because Asians deserved cultural respect, but “[t]he new policy should sympathize with the difficulties and problems confronting oriental peoples, economic, political, social, and education. . . . protecting them from the avaricious and grasping policies of governments and nations whose aim is exploitation of foreign lands.”¹¹⁴ Clearly, an open immigration policy would allow Americans to be the paternalistic protector of the Japanese.

Breckinridge’s other resources are just as troubling. Breckenridge placed Wellesley economist Emily Greene Balch’s *Our Slavic Fellow Citizens* (1910) on her curriculum. Balch’s work was compiled after the author spent close to two years in Austria-Hungary and Slavic communities in the United States in order to understand “the social character” of Slavic immigrants.¹¹⁵ Balch begins by bemoaning white America’s inability to understand how many nationalities of immigrants were considered to be Slavic—even scholars who studied immigrant

¹¹¹ Gulick, 24.

¹¹² Gulick, 7-8.

¹¹³ Gulick, 283.

¹¹⁴ Gulick, 283. Also, Gulick advocated a cap on the number of Asian immigrants, and provides an extensive list of allowable categories of immigrants. Gulick, 285.

¹¹⁵ Emily Greene Balch, *Our Slavic Fellow Citizens* (New York: Charities Publication Committee, 1910), vi.

groups had erroneously identified Italians as Slavs.¹¹⁶ Though admittedly Balch's work attempts to demystify the Slav for readers, she cannot escape Orientalizing her subject, going as far as to insist that the Slavs themselves cannot help Americans understand their culture "especially as the men themselves, ignorant of English, can give little help."¹¹⁷ Her comparison of the Slavic peasant to the industrial worker is also paternalistic. According to Balch, the landed peasant in Europe was extremely conservative and "coarse," and only finds self-confidence through his property.¹¹⁸ When said peasant arrives in America, he "loses that standing which largely gave him his old form of self-respect and self-consciousness."¹¹⁹ Thankfully, according to Balch, the Slav's "toughness of fibre [sic] and ingrained loyalties will in many cases pull him through," but only in so far as he acquiesces his Slavic identity and that of his children to an American one.¹²⁰

What these examples illustrate is that the recommendations of Miss Breckinridge for a curriculum designed to instruct the young home economist or social worker *did not actually involve fieldwork for the student*. Instructors were to choose from these and several other ethnic studies, in addition to reports from the U. S. Immigration Commission and U. S. Bureau of Labor, and then go forth and collect "contacts" at schools, charity organizations, and public health agencies—without any actual face-to-face encounters with immigrant populations themselves.¹²¹ Moreover, the works Breckinridge recommended were decidedly flawed, and

¹¹⁶ Balch, 5.

¹¹⁷ Balch, 6.

¹¹⁸ Balch, 44.

¹¹⁹ Balch, 45.

¹²⁰ Balch, 45.

¹²¹ Editorial, "Methods of Americanization," *Journal of Home Economics* 11, no. 2 (Feb 1919): 87-88.

used much of the same language of Orientalism and paternalism of earlier generations of scholars.

In an interesting turn of events, three short months later, the *Journal of Home Economics* published an abstract of a paper Breckinridge presented at the February American Home Economics Association meeting. In the abstract, Breckinridge forcefully called out the injustices of past Americanization attempts which “have made us blush with shame [at our] brutal lack of hospitality. . . . There has been the assumption that because they were different they were inferior, and there has been a willingness to lose the rich contributions they might make.”¹²² Breckinridge admonishes the American tendency to give Anglicized names to immigrants (“Dyonisius and Aestesthaea become Charlie and Nellie”) and seems pained that American society has attempted to strip away the culture of those “from which our great heritage of beauty has come, some echo of the olden art and of the sparkle of sea and sky and noble human form.”¹²³ Clearly, the Americanization of immigrants from a place that some consider the cradle of Western Civilization—Greece—would be much more devastating and almost sacrilegious for the American character.¹²⁴ Her strategy for “adjustment” instead of Americanization, was for educators to actually go into foreign communities. Educators could first gather information “from persons who have been in the situation, who have come through the experience and can formulate views based upon their own experiences and those under their immediate

¹²² S. P. Breckinridge, “Education for the Americanization of the Foreign Family,” *Journal of Home Economics* 11, no. 5 (May 1919): 188.

¹²³ Breckinridge, 188.

¹²⁴ She also gives an example of “Casimira and Janina to Cassie and Jennie,” Slavic and Polish names. Breckinridge describes these immigrants as “a race peculiarly gifted and leave us uncomfortable in their poverty and distress,” which is obviously not as grandiose of a description as the one she used for the Greek names.

observation.”¹²⁵ This is not at all what Breckinridge actually described in her curriculum published in the *Journal of Home Economics*, of which the bulk of a student’s preparation was studying texts. Another option was for educators to join service organizations that cater to the needs of immigrant groups, which again, stressed the importance of forming relationships.¹²⁶

A 1929 article concerning teaching home economics in mixed-ethnicity classrooms along the Arizona/Mexico border suggests that with some races, home economists had a much more difficult time being understanding and accepting of the virtues of cultural diversity. In “Homemaking With The ‘Other Half’ Along Our International Border,” Arizona Supervisor of Homemaking Classes in Rural Schools, Grace A. Farrell, addressed the challenges that Arizona teachers faced because over three-fourths of their students were children of “peons,” or children of poor Hispanic working parents. Farrell argued that the situation was especially critical because a “small percentage of American children must work, play, and study” with children who she referred to as “little mites” that were “everywhere,” like an infestation or plague.¹²⁷ The diet of the Mexican families Farrell studied was greatly lacking, mostly consisting of lard, meat, wheat, coffee, and corn, with minimal vegetables.¹²⁸ But Farrell openly blamed what she believed was the Mexican’s child-like state of development for these inadequacies. According to Farrell, Hispanics, “like all children, cannot be indulged too much or allowed too many liberties.”¹²⁹ The people had an “aimless existence,” were “irresponsible...[and] have no thought

¹²⁵ Breckinridge, “Education for the Americanization” 189.

¹²⁶ Breckinridge, 189-190.

¹²⁷ Grace A. Farrell, “Homemaking With The ‘Other Half’ Along Our International Border,” *Journal of Home Economics* 21, no 6 (June 1929): 413; 414.

¹²⁸ Farrell, 415. Farrell also notes that Mexicans didn’t can their own food, and if they had extra money they might buy “string beans, tomatoes, pumpkins, squash, or chili” as canned foods.

¹²⁹ Farrell, 416.

for the morrow.”¹³⁰ Homemaking skills were therefore critical for the girls of Mexican families, and teachers, according to Farrell, were “missionaries,” who would through daily inspection ensure that their students were making drastic changes. For Farrell, the missionary impulse of the settlement movement was not dead and replaced by an acceptance of pluralism. In the name of “better, easier, and more modern ways of life,” Americanization was alive and well in the field.¹³¹

Even toward the end of the 1930s, when contributors acknowledged that the process of Americanization had significant drawbacks for foreign communities, that criticism was couched in rhetoric that only appreciated foreign cultures in so far as these cultures actually made contributions to American society, not because of the merit of the culture itself. For example, the main article in the March, 1938 issue of the *Journal of Home Economics* highlighted attempts by several schools across the nation to promote “intercultural education.” In “The Role of Home Economics in Intercultural Education,” Rachel Davis-DuBois argued that aggressive Americanization tactics were misguided and even suggested that the process of Americanization was so damaging to foreign communities that it may have been a contributing factor in juvenile delinquency.¹³² A more responsible project, according to DuBois, was for schools to ease tensions and make immigrant groups seem less-threatening by staging student-led assemblies that “dramatized the cultural contributions of various groups to American life.”¹³³ These contributions, however, were quite dubious for certain ethnic groups. DuBois described

¹³⁰ Ibid.

¹³¹ Farrell, 418.

¹³² Rachel Davis-DuBois, “The Role of Home Economics in Intercultural Education,” *Journal of Home Economics* 30, no 3 (March 1938): 145.

¹³³ DuBois, 146.

assemblies where students could meet a “Chinese-American who had taken part in a play. . . or the Negro artist who had shown his paintings and talked on the history of portraiture.”¹³⁴ Other examples of contributors were a Jewish rabbi, whose program she described as “the cultural contributions of Jews to American life,” and the “German Jew who had introduced the German program.” Her description suggests that what children had to learn about the Chinese or African-Americans was how these ethnic groups experienced culturally-neutral hobbies, while Jews had made actual strides in shaping and contributing in American society. We do not know if the Chinese contributor exhibited a Kungu opera, for example, or perhaps if it was a play about the experiences of Chinese workers building the railroad. All DuBois noted was that the Chinese-American had “taken part in a play.” How was this a contribution? Similarly, an assembly on Hispanics included a Mexican dance followed by a breakout session where students could talk to the dancers over tea. While the schools were at times tackling the issue of exposing children to different cultures (albeit mediocrely), and in some cases acknowledging the cultural contributions of immigrant groups, home economists still lacked total acceptance of a heterogeneous America. This issue was something that the field was still addressing and still struggling with in 1945.¹³⁵

Home economists, therefore, were an inconsistent ally for commercial canners in the 1920’s and 1930’s. In their classrooms, they advocated home canning and preservation, both as a way for women to be in control of what they put on their family’s tables, and as a method of training that could teach the foreign-born the science behind homemaking. Home canning,

¹³⁴ DuBois, 147.

¹³⁵ Mary-Jane Grunsfeld, “Intercultural Relations: A Symposium” *Journal of Home Economics* 37, no 7 (September 1945): 406. This article describes the dangers of “treat[ing] different sections of the population as if one were privileged and another were under-privileged” by keeping a “section of the population from exercising the rights and opportunities we profess”. This is a hard-hitting article about prejudice and discrimination and criticizes the simplistic “study of differences in food, dress, and holiday customs.” 407-408

instead of a threat to society, was a potential savior of an anxious, modern America. In fact, home economists were concerned about the fact that “canning and jelly making have been among the industries disappearing from the home.”¹³⁶ Canning food using scientific concepts was an important part of the educational process, though home economists argued that “any system of education which is not fluid enough to meet the ever changing demands of a community, has failed to accomplish its ultimate usefulness.”¹³⁷ Home economists had to at least meet the foreign-born half way, because overwhelming these women who could not speak English in some cases, was as Elsie Routh explained, had an “element of tragedy.”¹³⁸ Demonstrations, instructions printed in English and another language, questionnaires to understand the preferred dietary choices of certain communities—all of these techniques were used by home economists to understand and teach domestic science. For further understanding of immigrant groups, home economists touted an objective system that valued cultural pluralism, but in reality was paternalistic and riddled with stereotypes and armchair analysis. As scientists, home economists were concerned with scientific objectivity and authority, but they were unable to focus their efforts on creating markets for commercially canned foods as the canners had hoped. To home economists, if home canning left the home, there would be dire ramifications for the psychological and economic fitness of family. Thus, commercial canners found little solace in the home economics classroom. Instead, canners began to rely on the medium of women’s magazines, which could easily reach a larger consumer base and through direct advertising could create a new market for commercially canned foods.

¹³⁶ “Canning and Preserving,” *Journal of Home Economics* 9, no. 7 (July 1917): 338; William F. Ogburn, “What is Happening to the Family?” *Journal of Home Economics* 25, no. 8 (October 1933): 660-664.

¹³⁷ Routh, 311.

¹³⁸ Ibid.

CHAPTER FIVE: SELLING THE SCIENTIFIC HOUSEHOLD: *GOOD HOUSEKEEPING* MAGAZINE AND CANNED FOOD

It's a Crusade! Telling the Public the Truth about food in cans

—*Continental Can Company Advertisement*¹

Canned food manufacturers needed to advertise their products directly to women, but the format of women's magazines made these periodicals the ideal medium for a more all-encompassing approach to making canned foods a ubiquitous component of middle-class meals. Women's magazines did not merely direct women to follow their suggestions—American women were encouraged to submit their own questions, recipes, and suggestions for articles and stories. While home economists and domestic scientists were not very successful in promoting commercially canned foods to the public, women's magazines, such as *Good Housekeeping*, succeeded in encouraging women to learn about, comment on, and ultimately consume canned goods. In doing so, *Good Housekeeping* reinforced the authority of science, necessary for the benefit of corporations who prospered with the acceptance of canned goods in American kitchens, while at the same time reinforcing the authority of men over women. The magazine did this through its Institute, seal of approval, and articles, as well as readers questions and product advertising. As a result, women's magazines were both sources of authority and avenues for women to shape the discourse of homemaking.

The magazine *Good Housekeeping*, first published in May of 1855 and established as a “Family Journal: Conducted In the Interests of the Higher Life of the Household,” as its tagline stated, set itself up in this manner to serve both roles for women.² The magazine set up the *Good*

¹ Continental Can Company Advertisement, *Canning Age* 15, no. 5 (April 1934): 233.

² *Good Housekeeping*, May 1885, 1. Nancy A. Walker, *Shaping our Mothers' World: American Women's Magazines* (Jackson, MS: University Press of Mississippi, 2000), 41-42.

Housekeeping Institute, a product testing laboratory and kitchen in Springfield, Massachusetts in November of 1908 as an organization “devoted to the promotion of good housekeeping and good citizenship. . . . and this magazine shall minister directly to the interests and aspirations of each one of its readers, subscribers, advertisers.”³ In fact, President Theodore Roosevelt gave the address at the laboratory’s dedication service on November 12th stating that it was “a matter of real gratification to all of us that you should be able now to dedicate your great building, for your periodical has been managed so far as to combine intelligent championship of the needs of the home with successful handling of the enterprise itself as a business proposition.”⁴ The editors of *Good Housekeeping* saw the laboratory as a safe place for community dialogue, “where we could hold exhibitions of new implements and apparatus and give lectures upon and demonstrations of methods; where popular and scientific meetings, conventions and exhibitions could be held, to bring the public in touch with the latest and best in the field of home science.”⁵ To be sure, editors claimed that they wanted to know what women wanted out of their household products, and what information readers believed was important to maintaining a healthy, happy home.⁶ The experts behind the magazine were there to test and recommend only the best products and housekeeping techniques so that women did not have to. At the same time, however, women were encouraged to send in their own recipes using *Good Housekeeping* approved products or send in questions to the magazine’s long-running “Question Box” feature. The entire magazine—not just the product advertisements—worked to refashion the middle-class American

³ “Editorial,” in *Good Housekeeping*, November 1908, 610. The *Good Housekeeping* Institute moved to New York City by the 1920’s.

⁴ “The Emancipation of Education,” *Good Housekeeping*, December 1908, 624-625.

⁵ Linda Hull Larned and Mildred Maddocks, “The Good Housekeeping Experiment Station,” *Good Housekeeping*, November 1908, 585.

⁶ Larned and Maddocks, 586.

home, and especially it's dinner table. The editors and contributors of *Good Housekeeping*, then, were critical in both educating women about safe home canning and encouraging them to purchase commercially canned goods.

In 1935, *Good Housekeeping* celebrated its fiftieth birthday, and in the May issue contributor Katharine Fisher memorialized the magazine's contributions to housekeeping in "Housekeeping Emerges from the Eighties."⁷ Fisher used this spot as a retrospective that focused on the ways that housekeeping had become more hygienic and scientific. Most importantly, Fisher remarked that Americans had "exchanged the uncertain qualities of products bought in bulk in the paper-bag era, and unidentified by the manufacturer, for packaged products with a quality maintained by the manufacturer and identified by brand names."⁸ According to Fisher, by 1935 commercially canned foods had been responsible for an "evolution" in the home, arguing that "[a] great factory can make soup cheaper than it can be done in a single household."⁹ Nutritionally, canned foods made the American diet of 1935 "more diversified and more healthful," since consumers all across the country could enjoy a bevy of canned foods that were not restricted to season or locality.¹⁰ Science had made this possible.

Contributor Elizabeth Frazer continued this retrospective in the July issue with her article "The House that Science Built," which espoused the triumphs that modern science made in the kitchen. Frazer's article, in the form of a personal narrative of her experience at a cooking lecture, unapologetically deferred to the authority of science. The drawings accompanying the article gave credence to her narrative—women were featured twice, once in a cooking role,

⁷ Katharine Fisher, "Housekeeping Emerges from the Eighties," *Good Housekeeping*, May 1935: 80-83; 224-226.

⁸ Fisher, 82.

⁹ Fisher, 82.

¹⁰ Fisher, 83.

standing over a large bowl and pouring in an unmarked liquid ingredient, and in another image typing the notes given to her by a man in what appears to be a lab coat. All of the other images were a string of images of male scientists poring over beakers and peering into microscopes. The instructor at this particular lecture began with the assertion that the cooking methods discussed (in regards to methods employed to preserve juices in meat preparations) were “not just new-fangled theories. They have been fully established by thousands of scientific tests in broad research studies conducted in the laboratories of agricultural colleges of twenty-six states and the Home Economics Bureau of the United States Department of Agriculture.”¹¹ To get her point across, the instructor brought in a meat expert—the male butcher. When the cooking demonstrations began Fraser began to explain how what she was taking part in was the result of a “gigantic cooperative effort, a kind of research skyscraper, which had brought it to pass.”¹² The science of housekeeping was part of a research cooperative that bound together scientists and homemakers across the country in hopes of bringing about “better products, higher standards, sanitary regulations and laws.”¹³ The article continues with Fraser explaining how science became part and parcel of all of American food manufacturing, agreeing with an unnamed director of research at an also unnamed institute of higher learning that “[f]ood manufacturers have practically no secrets today. Why? Because scientific knowledge is open to all. . . . It is only the parasite fringe of ignorant or unscrupulous manufacturers, the dishonest minority that exists in every industry, trade, and profession, which refuses to use this scientific

¹¹ Elizabeth Fraser, “The House that Science Built: The Story of Research in Industry and Advertising,” *Good Housekeeping*, July 1935, 84.

¹² Fraser, 85.

¹³ Fraser, 85.

knowledge.”¹⁴ Thus, Fraser praised the National Canners Association for its efforts to solve the problem of bacteria and canned foods, making “canned foods. . . the safest food products that come to your table.”¹⁵

The last section of Fraser’s article was focused on helping the consumer understand how because of science, manufacturers had a certain amount of responsibility in their advertising. In one anecdote, Fraser explained an incident in which the research director of a food manufacturer reviewed advertising copy and made corrections that the copywriter questioned. “Will the public understand what it’s all about?” the copywriter asked (Fraser did not give specifics about what kinds of corrections/products the copywriter was working on). “Never underestimate the public’s mentality, my boy! . . . We have a reputation for truthfulness which we try hard to deserve. It’s a real problem to interpret scientific findings accurately and yet keep the message vivid and interesting. But it is possible, as we have proved,” the research director explained.¹⁶ In this case, the manufacturer made sure to emphasize that its advertising copy was heavily influenced by the manufacturers themselves—not just written by disconnected advertising executives—and that because of their devotion to science, they did not sacrifice “truth” for hyperbole. Advertising, according to Fraser, was the manufacturer’s educational tool, not a “secret magic to make sick businesses well. . . . for not all the king’s horses and all the king’s men can force a woman to buy twice if the product isn’t satisfactory.”¹⁷ For Fraser and Fisher, then, modern science had ushered in an era of homemaking where commercially canned foods could be trusted matter-of-factly. Fraser assured readers that it was home canning that was deadly, claiming that “Botulism

¹⁴ Fraser, 184; 185.

¹⁵ Fraser, 186.

¹⁶ Fraser, 186.

¹⁷ Fraser, 186.

has been wiped out except in cases where housewives fail to follow modern scientific methods when canning at home.”¹⁸ In many ways, this was the key for canned food manufacturers—consumers needed to be convinced that home canning was too scientific and too risky to perform at home and that commercially canned foods were unequivocally safe.

“Advertising,” according to Frank Presbrey, President of the Frank Presbrey Company, a New York advertising firm, “has become the great teacher of progressive living. It breaks old bad habits. It creates new good habits. It keeps the public abreast of inventions and improvements. It is an essential guide to buyers in our complex modern markets. It has successfully undertaken the Herculean task of teaching our wives the economy of wise buying. It has taught people to want better food, better clothes, better homes, better everything.”¹⁹ Of course, not all manufacturers and advertisers were transparent, and not all consumers were knowledgeable of what to look for in quality goods. For the readers of *Good Housekeeping*, their local market could be a battlefield. Editors, contributors, and advertising reinforced the idea that the magazine was first and foremost an educational tool for scientific housekeeping and the key to smart purchasing. In some cases, however, the magazine made sure to emphasize that it was only responding to a *need*, and not merely lecturing to the public without demand. For example, in “Consumer Education: Come and Get It!” contributor Christopher Brooks argued that the American people both wanted and needed consumer education, “the salvation of the embattled consumer—her bulwark of defense against rising prices, inferior merchandise, and commercial exploitation on one hand, her own deficiencies in training, skill, and knowledge on

¹⁸ Fraser, 186.

¹⁹ Frank Presbrey, “Manufacturers Have Made Us,” *Wholesale Grocery Review*, January 1922, 16.

the other.”²⁰ In either case, the consumer was in a bad position, and could only be saved through an educational program that was presented “in authentic, easily applied form.”²¹ In the case of *Good Housekeeping*, all parts of the magazine worked together as the embodiment of this sentiment.

In fact, *Good Housekeeping* not only approved the editorial content of the magazine, but also guaranteed every advertisement featured in the magazine, and claimed to test each product for its quality. According to Brooks, *Good Housekeeping*’s product testing was “impartial. . . manufacturers do not pay to have their products tested. . . . Fully 30 percent of the products we test are *disapproved*.”²² Brooks also reassured readers that the *Good Housekeeping* Seal meant that the product would “do its work well, live up to all its promises, and give you long, satisfactory service. . . . After guiding you in making a wise purchase, we show you how to get the greatest return from your investment through effective use.”²³ In the vein of transparency, the magazine periodically allowed readers the opportunity to glimpse into the inner workings of the Seal of Approval and the placement of advertisements. For example, in an ad placed in the December 1940 issue, *Good Housekeeping* focused on the educational needs of the new bride. In the full page spot, featuring a black and white drawing of a young bride, the magazine explained just how ads were selected for the magazine. In 1939 an unnamed canned food manufacturer wanted to purchase \$29,000 in advertising space, but when the products were tested by the *Good Housekeeping* Institute, eight out of fourteen products were unsatisfactory because they “showed

²⁰ Christopher Brooks, “Consumer Education: Come and Get It!” *Good Housekeeping*, July 1937, 86.

²¹ Brooks, 206.

²² Brooks, 207.

²³ Brooks, 207.

great variation in quality, flavor and appearance.”²⁴ As a result, the magazine rejected their advertising application, though the magazine assured readers that most “canned food products we test *do* meet our exacting standards in a way which speaks volumes for the competence, integrity, and high standards of the American canning industry.”²⁵ The magazine, then, was on the frontlines of this battle over consumer protection. For “the bride, and millions of women like her”—which could essentially be every woman in America—depended on *Good Housekeeping* to weed out unscrupulous canners and let them know which foods were tasty, economical, and nutritious.

Of course, *Good Housekeeping* had to establish the legitimacy of its Institute, and it did so in the same manner that commercial canners attempted to persuade consumers that their manufacturing facilities were sterile—with a campaign of transparency. In “The Institute at Home: A Trip Through its Workrooms,” Mildred Maddocks Bentley, Chairman of the *Good Housekeeping* Institute Advisory Board took the reader through the workstations of the magazine’s most important tool, its new brick and mortar testing facility located at 105 W. 39th Street in New York City.²⁶ In those kitchens, every recipe printed in the magazine, from both professionals and readers, was tested “in its full size, in the exact quantities called for, in the printed rule which finally reaches” the reader.²⁷ The institute also tested kitchen gadgets to be sure that they performed their task but also to be sure that such gadgets and devices were not

²⁴ *Good Housekeeping*, December 1940, 194.

²⁵ *Ibid.*

²⁶ Mildred Maddocks Bentley, ““The Institute at Home: A Trip Through its Workrooms,” *Good Housekeeping*, February 1923, 74.

²⁷ Bentley, 74.

injurious, were time and money saving, and were relatively easy to operate.²⁸ Bentley traced the process of testing out new “ironing machines,” from when they arrived in their appropriate packaging, to their instillation in the “laundry laboratory,” and through a battery of heavy-duty testing, complete with pictures.²⁹ Multiple different users tested the machine, which was also being watched by engineers to be sure that its was working properly.³⁰ If a product passes their testing process, the product manufacturer received a real paper certificate in addition to “the privilege of using our seal on his [product] and on his publicity material.”³¹ In addition, Bentley described the *Good Housekeeping* Seal, which was “protected” with a serial number.³² “Everything we print,” Bentley assured her readers, “has been tried out by us before we pass it on to you. We want you to have confidence in these pages.”³³

The *Good Housekeeping* Seal, first introduced in 1923, was a way for consumers to feel that they were getting a tangible form of consumer protection and through the years both the language and the guarantee changed. In the 1920’s, The *Good Housekeeping* “Guarantee” ensured consumers that “every article advertised in *Good Housekeeping* is covered by a money-back guarantee” and tested by a special testing bureau exclusive to the magazine. They assured readers that “the examinations are technical and practical, the tests being made under the supervision of experts,” highlighting their commitment to scientific authority.³⁴ In the 1930’s, the magazine’s quality pledge focused more on the product’s defectiveness, not whether the

²⁸ Bentley, 75.

²⁹ Bentley, 75-76.

³⁰ Bentley, 76.

³¹ Bentley, 76.

³² Bentley, 76.

³³ Bentley, 77.

³⁴ “Guarantee” *Good Housekeeping*, February 1922, 4.

product did what it said it would. The new guarantee informed consumers that every advertised item was guaranteed, and that “If you purchase any product advertised in *Good Housekeeping* and find it unsatisfactory, we will carefully investigate your complaint. If the product is defective it will be replaced or your money refunded. This guaranty applies to every product.”³⁵ At this point, both the product and the advertisement were under the watchful eyes of the *Good Housekeeping* Staff. By the 1940’s, the magazine had established even more of a presence as a clearinghouse of “industry experts,” and mandated that for a product to gain the coveted “Seal of Approval,” the manufacturer had to purchase ad space for the product. The seal stated that “Products that bear the *Good Housekeeping* Seal of Approval must be actually advertised in our Magazine to come under our Guaranty,” adding that “of all the products that have received the Seal of Approval less than 30% have ever been advertised in *Good Housekeeping*.”³⁶

In “Protection in Your Purchasing,” Bentley risked “repetition [of] the old, old story of *Good Housekeeping* Institute service, went into depth to explain to readers precisely how the *Good Housekeeping* Seal was obtained and what consumers could count on.”³⁷ According to Bentley, “all the time and all the skill and the generous amount of money expended by the magazine for our searching tests are none too much, first, to protect you and every purchasing reader.”³⁸ Though *Good Housekeeping* would not refund money spent on a piece of household machinery, the magazine would acquire a new machine for the consumer if the guaranteed item was unsatisfactory and the manufacturer refused to honor the guarantee. Bentley assured the customer, however, that their guarantee “in the whole history of our work has never been refused

³⁵ “Your Guaranty,” *Good Housekeeping*, August 1933, 6.

³⁶ “This is Your Guaranty” *Good Housekeeping*, February 1940, 6.

³⁷ Mildred Maddocks Bentley, “Protection in Your Purchasing,” *Good Housekeeping*, February 1924, 76.

³⁸ Bentley, 76.

by any manufacturer.”³⁹ Again, in an attempt to be more transparent and convince readers that their process was sound, Bentley took the reader through the guarantee process, starting with the letter of dissatisfaction received at the *Good Housekeeping* Institute, including a picture illustrating the process.⁴⁰ Once a letter was received, it was placed in the file of that particular manufacturer. Typically, the consumer had already written the manufacturer, who in turn sometimes denied the consumers complaints “perhaps due to uncertainty as to their real responsibility in the matter.”⁴¹ The Institute then completed a series of “impartial” tests on the machines, and recommends that the manufacturer replace the item, after which the manufacturer “promptly . . . accepts his responsibilities once they are properly defined to him.”⁴² The description of this process, therefore, was to show consumers that *Good Housekeeping* had a direct line to manufacturers, it valued a scientifically-minded inspection and testing process, and that the magazine had the interests of consumers at heart.

Good Housekeeping also saw itself as an educational tool for manufacturers as well. Bentley continued by explaining the services offered to manufacturers from the magazine’s staff of experts. “Our engineers have studied [the manufacturer’s] problems and are in a position to tell him what women want and need,” she explained.⁴³ Bentley explained that the magazine never endorsed one brand of household appliance, but they did reject poorly made and cheaply produced products, or products that do “not operate properly or is impractical to operate.”⁴⁴

³⁹ Bentley, 76.

⁴⁰ Bentley, 78.

⁴¹ Bentley, 77.

⁴² Ibid.

⁴³ Bentley, “The Institute at Home,” 77.

⁴⁴ Bentley, “Protection in Your Purchase,” 77.

From their testing, *Good Housekeeping* could “offer [them] the truth” about their product’s performance. According to Bentley, the magazine stood “between the housekeeper and manufacturer . . . as [an] interpreter,” with special responsibility to the housekeeper.⁴⁵ According to the magazine, the seal of approval process created important dialogue between consumers and manufacturers, and gave consumers more of a voice in the marketplace.

Though the seal was one method of gaining respect and trust from American women, *Good Housekeeping* also used its magazine as a forum for women to write in questions and comments, which served to bring the everyday housewife into the important discussions of the day concerning nutrition, health, efficiency, and safety. *Good Housekeeping* was certainly not the only magazine that solicited letters from their readers, but they were at the forefront of the progressive movement that set out to establish the unwavering authority of experts. Throughout the interwar period, *Good Housekeeping* fielded questions concerning “food, sanitation, and health” in the long running question and answer column, “Dr. Wiley’s Question Box.” In this series, and subsequent incarnations of the same column albeit with a different doctor in charge, readers submitted pertinent questions to Dr. Harvey W. Wiley, arguably one of the biggest named scientists involved in the 1906 Pure Food and Drug Act, considered by some to be the “Father” of the Act. According to Wiley, from his early days in the USDA to 1906, he fought a “battle [that] waged with increasing fury.”⁴⁶

According to then seventy-nine year-old Wiley’s own account published in *Good Housekeeping* in December of 1923, he chose to leave his post in 1912 as Chief in the United States Department of Agriculture’s Bureau of Chemistry because he had become “so restricted

⁴⁵ Bentley, “The Institute at Home,” 77.

⁴⁶ Harvey W. Wiley, “A Little Bit of History,” *Good Housekeeping*, December 1923, 210.

by administrative red tape as to render [his] further stay in that position practically useless.”⁴⁷ To be sure, Wiley’s tenure as Chief was fraught with controversy. He had set up an infamous “Poison Squad” in his Washington, D.C. laboratory, which included twelve young Capitol Hill staffers who were given certain concentrations of chemical additives to see how these chemicals actually effected the human body.⁴⁸ Although he claimed to have received dozens of employment offers with the announcement of his retirement, he accepted the offer of his own department called the Bureau of Food, Sanitation, and Health with *Good Housekeeping*, where he would have “nearly a million mothers in [his] audience.”⁴⁹ According to Wiley, after his employment he began receiving countless letters from readers, and by 1923 he was receiving upwards of 10,000 letters a year.⁵⁰ Wiley contributed articles and compiled informative pamphlets about such topics as feeding infants and the proper nutrition for the sick, that readers could purchase for a nominal fee, but his advice column was the most important medium for both his transmittal of expert advice and a forum for consumers, which essentially became market research for the magazine. From the questions alone, editors could deduce what were the major concerns of women from all walks of life, and at the same time encourage them to acquiesce to professional—or male—authority. *Good Housekeeping* hoped that Wiley would “recreate that spirit of enforcement” that he possessed during the debate over pure food and drug legislation.⁵¹

⁴⁷ Wiley, 82.

⁴⁸ Harvey Levenstein, *Fear of Food: A History of Why We Worry about What We Eat* (Chicago: University of Chicago Press, 2012), 62-65.

⁴⁹ Wiley, “A Little Bit of History,” 208.

⁵⁰ Wiley, 209.

⁵¹ Wiley, 210.

In April of 1922, South Carolina reader “Mrs. G. H. C.” wrote in to Dr. Wiley for a suggestion for a “good general doctor’s book for home use.”⁵² Though in many ways this was the era of the expert, American society also experienced a wave of self-help advice manuals. This created a somewhat confusing situation for American mothers—they were encouraged to become more scientific minded themselves by learning about bacteriology and other scientific processes from experts but there was still a point at which women were expected to yield to the knowledge and expertise of professionals. Women were therefore supposed to understand complex scientific processes behind canning, for example, but should also understand that they could almost never exact the scientific precision behind commercial canning. Similarly, in childrearing, women were supposed to understand and implement the new knowledge of nutrition in order to ensure that their children were healthy and vibrant, yet ultimate nutritional expertise was the realm of the professional scientist, physician, or home economist.⁵³ As a result, though Dr. Wiley compiled advice manuals on topics like “Constipation,” “The Feeding of Older Children,” and “Reducing and Increasing the Weight,” for *Good Housekeeping*’s readers, he recommended that Mrs. G. H. C. suspend her search for an at home physician’s manual. Dr. Wiley argued that such publications were overall detrimental to the health of families, because “transferring from a layman a business which can be conducted only by experts” would only result in increased injuries or sickness. He compared personal health to watch repair—if everyone worked on their own watch instead of taking it to their local repair shop, “there would probably be a tremendous increase in the number of damaged watches.”⁵⁴

⁵² “Dr. Wiley’s Question Box,” *Good Housekeeping*, April 1922, 84.

⁵³ Rima D. Apple, *Perfect Motherhood: Science and Childrearing in America* (New Brunswick, NJ: Rutgers University Press, 2006).

⁵⁴ “Dr. Wiley’s Question Box,” *Good Housekeeping*, April 1922, 84.

The Question Box forum invited readers to submit questions for all types of inquiries about food, health, and hygiene, and because of its scope the forum answered many questions about canned food—especially concerning the process of canning and the safety of canned foods. In their responses, Dr. Wiley and the physicians who followed his death in 1930 attempted to assure readers of the safety of commercially canned foods instead of carefully instructing readers to can their own vegetables at home using federal guidelines. Again, as an “enforcer” of food safety, and as a conduit from the manufacturer to the consumer, *Good Housekeeping* attempted to set the standard of quality and at the same time calm the anxieties of housewives across the country who feared the “ptomaines” lurking in those brightly colored labeled cans on their pantry shelves.

During the 1920’s and 1930’s, most of the questions that Dr. Wiley and Dr. Walter H. Eddy, who took over the post in 1930, answered were concerned with the general safety of canned foods and questions about the safety of canned food preservatives. In these early years, the questions lacked a level of scientific understanding that is found in the 1940s, which suggests that American culture in the 1940s and into the 1950s became much more saturated with scientific rhetoric. Dr. Wiley did not mince words in response to Mrs. C. D. F. of Pennsylvania, who wrote in about a product called “Schnider’s Vegetable Compound,” which he not only advised against using claiming that chemical preservatives were decidedly “taboo,” and added that “you will have to wait about a thousand years before you see the advertisement in the magazine” for such a product.⁵⁵ Similarly, a woman from Connecticut wrote in with questions about the safety of boric acid and sulfur, the use of which Wiley declared to be “deplored.”⁵⁶

⁵⁵ “Dr. Wiley’s Question-Box,” *Good Housekeeping*, August 1922, 88.

⁵⁶ “Dr. Wiley’s Question-Box,” *Good Housekeeping*, May 1923, 94.

Readers also wrote in requesting clear instructions on how to tell if canned goods had been “tainted.” Because of the threat of food poisoning, especially in the wake of the Olive outbreak, World War I, and President Harding’s death, it would only make sense for Dr. Wiley and *Good Housekeeping* to use the space to explain bacteriology in the same manner as *American Cookery* and *The Journal of Home Economics*. Instead, both the magazine and the good doctor hardly mentioned “ptomaines” or the new findings in the bacteriology of botulism. Dr. Wiley instructed one reader to actually hit the top of the can against a hard surface to observe any shifting in the lid of the can, though he confusingly explained that even if it moved, meaning that the can was “improperly processed” and that “a proper vacuum” had not been made in the can, the food was still “at the time fit to eat.”⁵⁷ A few sentences later, he asserted that both “bulged cans” and “springers,” as the improperly vacuumed cans were called, should never be eaten because they were “potentially dangerous.”⁵⁸ One reader wrote in to get the final word on the rumor that food left over 5 minutes in open cans could cause food poisoning. In this case, she was calling attention to the general fear that the tin cans themselves could cause food poisoning, meaning that all commercially canned foods were culpable. Dr. Wiley explained that tin cans were not dangerous, and beyond using a quote by University of Illinois bacteriologist F. W. Tanner, he avoided going into detail about the actual causes of food poisoning. In this case, and for much of the 1930s, Dr. Wiley and *Good Housekeeping* chose not to explain to readers why such cans were hazardous. In fact, it was not until the 1940s that sterilization and spoilage was heavily covered by the magazine. W. B. wrote in to Dr. Walter H. Eddy inquiring about the causes of “ptomaine poisoning,” and wanting to know if the poisoning was “caused by food in

⁵⁷ “Dr. Wiley’s Question-Box,” *Good Housekeeping*, December 1930, 102.

⁵⁸ Ibid.

tin cans.”⁵⁹ Dr. Eddy recommended that consumers inspect the foods and discard if they were “swollen or bulged, because in the production of these substances gas is always formed.”⁶⁰ He assured readers that “improperly processed canned products are rare today.”⁶¹ Interestingly, he did not explain the new knowledge that such swells were typically botulinus in origin, and that in fact ptomaine was a term largely discarded by science by 1934. Dr. Eddy explained the term as “a chemical substance which is formed through the action of putrefactive bacteria in food stuffs,” and called them “definite poisons,” but did not go further.⁶²

In the case of home canned food, Dr. Eddy changed his tune. Just two years after he explained the term ptomaine, he now emphasized that “the danger from improperly canned vegetables is from what is called botulinus poisoning.”⁶³ Now, it was not a process, but an “organism” found in the readers’ gardens. According to Eddy, acid helped to destroy the organism when heated properly, but since vegetables lacked that acid the typical canning process was not sufficient. Without a pressure cooker and the USDA guidelines (which Eddy recommends that readers consult), readers could not be sure that their green beans and corn were safe from this deadly organism. When readers questioned whether the pressure cooker retained vitamins with processing/cooking vegetables, Eddy reassured them that because of its quick cooking time and use of steam, foods prepared in a pressure cooker retained much of their

⁵⁹ “Dr. Eddy’s Question-Box,” *Good Housekeeping*, March 1934, 96.

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Ibid.

⁶³ “Dr. Eddy’s Question-Box,” *Good Housekeeping*, October 1936, 91.

nutritional value.⁶⁴ Without the pressure cooker, home canning was primitive and nutritionally damaging at best, deadly at worst.

During the 1940's, as women went to work and the home front shifted to one of mobilization, convenience caused more families to consider shifting towards commercially canned foods. This did not mean, however, that mothers welcomed the commercially canned foods with open arms. During World War II and after, the Question Box was flooded with questions regarding canned foods—especially concerning vitamin content and overall safety. The questions were also much more sophisticated—women were not asking how poisoning happened, they were asking about the botulinus toxin specifically. For example, in May 1944, Mrs. P. W. wrote in to then *Good Housekeeping* Bureau Chief Dr. Carl P. Sherwin asking whether one could contract botulism from eating raw vegetables since she had “been told that botulinus bacteria come from contaminated soil.”⁶⁵ While Mrs. P. W. refrained from disclosing who told her about the botulism toxin, her language here is reminiscent of earlier responses from Dr. Eddy describing the source of contamination. Dr. Sherwin responded by explaining that the “botulinus organisms are not poisonous; but when they grow in food they produce a very powerful poison,” in the form of spores that are quite difficult to kill.⁶⁶ He recommended boiling all home canned foods that were not processed in a pressure cooker for at least ten minutes before serving.⁶⁷ Similarly, Mrs. W. P. H. wrote in asking if canned foods prepared using the

⁶⁴ “Dr. Eddy’s Question-Box,” *Good Housekeeping*, May 1939, 209.

⁶⁵ “The Question Box,” *Good Housekeeping*, May 1944, 164.

⁶⁶ “The Question Box,” *Good Housekeeping*, May 1944, 164.

⁶⁷ “The Question Box,” *Good Housekeeping*, May 1944, 164. Even if vegetables that were not canned in a pressure cooker were boiled after opening, Dr. Sherwin recommended doing further testing before serving. He suggested tasting, and “if the flavor is acceptable, the vegetable will be usable.” See “The Question Box,” *Good Housekeeping*, October 1946, 201.

“boiling-water-bath method [were] made safe from botulinus poisoning” if she boiled the contents of the jar for fifteen minutes before serving.⁶⁸ What’s important here is that readers were actually using the scientific terminology themselves, thereby elevating themselves not to the same level as Dr. Sherwin, but to a level of educated consumer. Being able to intelligently use scientific rhetoric suggests the permeation of scientific culture and a certain level of success in *Good Housekeeping’s* educational tools. It is important to qualify this statement because American women were in a constant state of education about food and nutritional science—they did not just become educated and cast out other beliefs. In fact, in October 1944 *Good Housekeeping* published H. S. P.’s question regarding whether home canned foods spoil because they were put up by a menstruating woman.⁶⁹ Readers still had a lot to learn, but *Good Housekeeping* had made noticeable inroads in educating women.

These questions presented in the Question Box through the interwar years also helped to inform *Good Housekeeping* about the types of informational articles from which women would benefit the most and would most contribute to women’s larger scientific understanding. How to can vegetables safely at home using science was one topic that *Good Housekeeping* took to task. In “Prepare for Your Canning Now,” (1924) contributor Dorothy B. Marsh argued that canning was “one cookery method which demands all the accuracy of the chemical laboratory and the bacteriologist,” and with her one-page article she hoped to help women achieve a level of “precision and accuracy” in putting up their summer bounty.⁷⁰ After a careful inspection of both whether her produce was fit enough to can, the housewife was advised to perform a complete examination of all of her canning supplies—jars, lids, rubbers, and collars. Marsh also supplied

⁶⁸ “The Question Box,” *Good Housekeeping*, January 1946, 160.

⁶⁹ “The Question Box,” *Good Housekeeping*, October 1944, 102.

⁷⁰ Dorothy B. Marsh, “Prepare for Your Canning Now,” *Good Housekeeping*, May 1924, 80.

asmall chart listing the times for both blanching and “sterilizing” fruits and vegetables from apples to turnips using a method of oven canning. Marsh also explained that though pressure cookers were relatively expensive pieces of canning equipment, their performance in canning could not be matched, and they were useful for regular cooking as well. She then recommended that readers send off fifteen cents for *Good Housekeeping’s* Bulletin should a reader need more information.⁷¹ Though the science of bacteriology and the chemistry of canning was important to Marsh, she never even mentioned why sterilization was important for canned foods in this article. She never explained *why* readers needed to practice safe canning, only that they needed to do it.

The next year, Marsh returned with a more complete instructional article “Canning by Safe Methods.”⁷² In this article, Marsh concluded that the safest way to can non-acidic vegetables was to use a pressure cooker. She explained that though there were cases of canning using “ideal conditions. . . . recent investigations by the U. S. Department of Agriculture have shown that frequent spoilage in home-canned vegetables is due to the fact that the center of the jars never reaches a sufficiently high temperature to sterilize the contents.”⁷³ She warned canners to only choose good-looking produce, and to thoroughly clean them because “the soil may contain bacteria that are difficult to kill,” but she does not elaborate.⁷⁴ In closing, she recommended that canners “discard any showing signs of spoilage and then store in a cool

⁷¹ Ibid.

⁷² Dorothy B. Marsh, “Canning by Safe Methods,” *Good Housekeeping*, July 1925, 74.

⁷³ Ibid.

⁷⁴ Marsh, “Canning by Safe Methods,” 75.

place,” though Marsh did not explain what these signs were, only that one should “*Never serve any canned food that is offensive in appearance or odor.*”⁷⁵

Finally, in 1931 Dorothy Marsh referred to the danger of botulism as the main reason that homemakers needed to pay close attention to the science behind food canning. In “Before You Begin to Can,” Marsh explained that sterilization was necessary because of “increasing evidence that the danger from botulinus poisoning. . . is a real menace.”⁷⁶ Marsh continued by explaining that canned food manufacturers “had to take extraordinary measures” to prevent this “germ” from becoming a risk to the health of consumers by solely using the steam technology of a pressure cooker, albeit on a larger scale.⁷⁷ As such, according to Marsh, the *Good Housekeeping* Institute could only recommend that home canners use pressure cookers as well “to destroy completely the botulinus germs.”⁷⁸ Marsh then went into a systematic explanation of how to use a pressure cooker—beginning with reading the manufacturer’s instructions—and how to tell if your canning materials, such as the rubbers for lids, should be replaced.⁷⁹ This article was used again in 1933 with minimal changes, retaining its use of the term “botulinus” and spending more time detailing the various options of canning jars available for purchase, though a pressure cooker was still recommended.⁸⁰ By 1941, *Good Housekeeping* became more adamant about the dangers of home canning, running an article alarmingly titled “WARNING to Home Canners on a Matter of Life and Death.” In this brief one-page article, the magazine outlined the dangers of

⁷⁵ Marsh, “Canning by Safe Methods,” 195. Italics in original.

⁷⁶ Dorothy B. Marsh, “Before You Begin to Can,” *Good Housekeeping*, May 1931, 100.

⁷⁷ Ibid.

⁷⁸ Ibid.

⁷⁹ Marsh, “Before You Begin to Can,” 101.

⁸⁰ Dorothy B. Marsh, “Canning Days are Here Again,” *Good Housekeeping*, August 1933, 82.

botulism, emphasizing the importance of the pressure cooker and that despite wartime, “the Government is allowing the manufacture of 400,000 new cookers.”⁸¹ Thus, though *Good Housekeeping* still recommended home canning, it became clear that an expensive pressure cooker increasingly became the kitchen standard for *Good Housekeeping* and therefore, for middle-class women across America.

If canning foods by other methods was dangerous, and the pressure cooker more of an expensive luxury for most homemakers, where would women get the precious vegetables that nutritionists and physicians declared were invaluable to the growing bodies of their children and their overworked husbands? According to Dr. Eddy, it was critical to “national health” for all families to supplement their meat and starch diet with “protective foods”—vegetables.⁸² In “Go Ahead and Can,” Dr. Eddy attempted to lay to rest questions about the nutritional fitness of canned vegetables. Dr. Eddy supplied several tables—the results of eight years of work—indicating either a negligible loss or a significant increase in vitamin and mineral content of canned vegetables over fresh.⁸³ The illustration for this one-page article was a photograph of a seemingly healthy litter of guinea pig pups with the caption “Three generations of healthy guinea pigs, fed on canned food only, look approvingly at the fourth generation.”⁸⁴ Indeed, what resulted in the 1930’s was that *Good Housekeeping* unfolded a primer in commercially canned foods for the consumption of already worried women.

⁸¹ “Warning to Home Canners on a Matter of Life and Death,” *Good Housekeeping*, August 1944, 90.

⁸² Dr. Walter H. Eddy, “Go Ahead and Can: Because Canned Foods are Wholesome,” *Good Housekeeping*, September 1931, 108.

⁸³ Eddy, “Go Ahead and Can,” 108; 199

⁸⁴ Eddy, 108.

Educating American women about the benefits of using canned foods began with understanding labels. Labeling was very important for commercial canners because the terminology used on the labels was used to designate quality. It was up to the canners—and *Good Housekeeping*—to explain to consumers just what the labels meant they were getting. After all, the contents were not visible to the consumer and thus they had no other way of knowing what to expect after the can was opened. To be sure, according to Katharine A. Smith, of the USDA's Bureau of Chemistry, "of what avail are these labels, unless we, as housekeepers and purchasers, are willing to take the time to read them carefully and intelligently?"⁸⁵ Smith argued that though labeling was regulated by pure food laws, manufacturers were still getting away with misleading labels, so consumers needed to take care to "scrutinize the entire label closely."⁸⁶ Indeed, Smith warned consumers not to be swayed by colorful vignettes and scrolling fonts and pay attention to the mandatory written text on the labels and described what ingredients were really in the can or jar.⁸⁷

After the passage of the McNary-Mapes Amendment, or "Canners Bill" to the Pure Food and Drugs Act in 1930, the newly formed Food, Drug and Insecticide Administration (in 1930 shortened to Food and Drug Administration, or FDA) was given jurisdiction regulating quality of commercially canned foods. Its goal was to "secure some sort of standard label and inspection service that will either eliminate low quality goods from the market or force their packers to label them in such a manner as to remove them from competition."⁸⁸

⁸⁵ Katharine A. Smith, "Take a Look at the Label," *Good Housekeeping*, June 1925, 83.

⁸⁶ Smith, 83.

⁸⁷ Smith, 206.

⁸⁸ Walter H. Eddy, "Let the Women Write the Label That Tells What's in the Can," *Good Housekeeping*, April 1931, 103.

In “Let the Women Write the Label That Tell’s What’s in the Can,” (1931) Dr. Walter Eddy took readers inside a meeting between the National Canners Association and the Wholesale Grocers Association in January of 1931 where canners and a select group of consumers discussed the quality requirements for a variety of canned foods. Dr. Eddy, however, used his platform to open up the discussion that took place concerning a quality grade in labeling and asked readers to send their concerns and ideas directly to his address at the *Good Housekeeping* Institute. He assured readers that they could and should be a part of this monumental task, and assured them that the magazine “offer[s] to collate this expression, assemble the views, and transmit them to the proper authorities.”⁸⁹ In fact, by 1938 this collaboration had yielded measurable changes to canned foods. Dorothy Marsh explained this change in a brief report called “Take Notice: Here is Good News from Your Grocer.” According to Marsh, changes in labeling now told consumers how many peach halves were in various grades of canned peaches, for example.⁹⁰ Contributor Katharine Fisher concurred, arguing that now labels were “the window of the can.”⁹¹

In order to educate women about commercially canned foods, *Good Housekeeping* also went forward with campaigns that took their readers into the cans on their grocer’s shelves. In 1927-1928, the magazine instituted an educational series called “What’s in a can of _____?” filling in the blank with “the truth” about vegetables, fruit, fish, soup, and meat.⁹² In this series, contributor Dorothy Marsh was at the helm, taking readers inside the cannery and examining

⁸⁹ Eddy, “Let Women Write the Label,” 104.

⁹⁰ Dorothy B. Marsh, “Food Shoppers Take Notice: Here is Good News from Your Grocer,” *Good Housekeeping* January 1938, 81.

⁹¹ Katharine Fisher, “Label or Babel?” *Good Housekeeping*, January 1938, 83.

⁹² Dorothy B. Marsh, “What’s in a Can of Vegetables,” *Good Housekeeping*, October 1927, 74.

how “the canning industry of today is developed along scientific lines; its procedure is thorough, and its care extremely diligent.”⁹³ For prepared foods like soups, Marsh appealed to her readers’ new modern lives, arguing that for most women in the late 1920’s the days of laboring over a hot stove all day to make a hearty soup were long gone. Indeed, housekeeping had changed drastically since *Good Housekeeping* first began its publication in 1885, moving from “drudge” and “grubby work,” to an “evolved” kitchen of porcelain, chrome, and convenience foods.⁹⁴ Canned soups, according to Marsh, were equally “nourishing. . . all ready to serve—soups packed in sanitary cans—soups which in delicacy and blend of flavor outrival the best efforts of many of us. These soups provide wholesome nourishment and appetite stimulus, and you and I can afford to serve them.”⁹⁵ Based on her personal observations in a soup canning facility (the brand was unnamed), Marsh “had convincing proof of the high food standards which this manufacturer, as well as many others, today is maintaining for you, the consumer.”⁹⁶ Sanitation, convenience, quality and cost were all significant points in Marsh’s series. Also, by not mentioning the soup by name, Marsh was not endorsing a certain company’s product, but instead certifying the industry as a whole.

That canned foods were of low quality was an important stigma that Marsh addressed. In “Canned Foods with New Appeal,” she engaged critics who “accused” women of serving meals straight “out of the can.”⁹⁷ For Marsh, canned foods were a boon to the harried housewife who wanted to serve flavorful new meals but didn’t have the time or the skill to develop the flavors in

⁹³ Marsh, “What’s in a Can of Vegetables,” 74.

⁹⁴ Katharine Fisher, “Housekeeping Emerges from the Eighties,” *Good Housekeeping*, May 1935, 80; 82; 83.

⁹⁵ Dorothy B. Marsh, “What’s in a Can of Soup,” *Good Housekeeping*, April 1928, 92.

⁹⁶ Marsh, “What’s in a Can of Soup,” 92.

⁹⁷ Dorothy B. Marsh, “Canned Foods with New Appeal,” *Good Housekeeping*, March 1930, 86.

a hearty stock. “One of the most flavorsome and most nourishing chowders I serve,” Marsh proudly explained, “is quickly made by adding an equal quantity of fresh or canned milk to a can of condensed vegetable soup.”⁹⁸ To be sure, “combining some of your canned soups,” or doctoring up the broth with condiments and additional spices would jazz up any boring tureen.⁹⁹ *Good Housekeeping* recommended that all households maintain a plentiful stockpile of canned foods and condiments, and oftentimes paired articles on stocking a pantry with images of canned foods stacked and arranged like soldiers. Since a housewife never knew when a food “emergency” would strike—famished children rushing in after playing in the snow, the boss and his wife dropping in unannounced, the hot summer sun making the kitchen unbearable, etc.—canned foods were important staples.¹⁰⁰ Being both “cook and hostess” was a delicate balancing act, and Marsh’s advice was to learn these planning “secrets.”¹⁰¹ Establishing and keeping on top of a pantry was of critical importance, and being lax would only result in a meal crisis or risk the “dangerous sameness of the everyday meal.”¹⁰² Thus, *Good Housekeeping* provided readers with ample recipes and enhancement ideas throughout the 1930s and 1940s that used a variety of canned food items.¹⁰³

Because *Good Housekeeping* essentially served as an educational forum for women, the magazine directly responded to the needs of American housewives. At times the magazine

⁹⁸ Marsh, “Canned Foods with New Appeal,” 86.

⁹⁹ Ibid.

¹⁰⁰ *Good Housekeeping* also recommended keeping an “emergency shelf” of canned foods. See Dorothy B. Marsh, “The Emergency Shelf,” *Good Housekeeping*, April 1927, 76-77.

¹⁰¹ Dorothy Marsh, “Now That You are On your Own, You Often Have to be Cook and Hostess, Too,” *Good Housekeeping*, May 1941, 138.

¹⁰² “Stocking the Pantry Shelves” in *Good Housekeeping*, October 1931, 211.

¹⁰³ Every issue in the 1930’s and 1940’s contained recipes for using canned foods.

attempted to bring about a sense of togetherness among its readers by answering the questions that supposedly all of their readers wanted to know. Dorothy Marsh again headed up this initiative by compiling “Facts Housekeepers Want to Know about Canned Food.”¹⁰⁴ In this list, formatted as individual questions followed by brief answers, Marsh answered such queries as “Are Canned Foods of the Same Quality as Fresh Foods?” “Have Canned Foods the Same Food Value as Fresh Foods?” and “Are Canned Foods Healthful for Children?”¹⁰⁵ Marsh responded that canned foods were picked and packed at the peak of freshness and therefore “the canned product may be better in quality than the so-called fresh product,” and that “scientific research” had proven that canned foods retain much of their vitamin and mineral content, thus making them an excellent choice for growing children.¹⁰⁶ What was important was that Marsh was answering the questions that were on the minds of housewives across the country, so instead of lecturing to her readers, she was taking part in a conversation, or a question-and-answer seminar with her readers.

Though the magazine endorsed commercially canned foods in its seal, various articles, and the question-and-answer series, the magazine also accepted more and more full-page advertisements for various canned foods products within its pages. While not all products that earned the seal of approval bought advertising space (it was not required until the 1940s—*Good Housekeeping* tested products on its own accord), all products that were advertised were thoroughly tested when feasible.¹⁰⁷ Products advertised in the magazine because the manufacturers who advertised were able to use the space to shape their own new narrative about

¹⁰⁴ Dorothy B. Marsh, “Facts Housekeepers Want to Know about Canned Foods,” *Good Housekeeping*, 86.

¹⁰⁵ Marsh, “Facts Housekeepers Want to Know about Canned Foods,” 86.

¹⁰⁶ *Ibid.*

¹⁰⁷ Brooks, “Consumer Education: Come and Get It!”, 207.

the value of commercially canned foods. While Campbell's Soup and Armour/Swift meats were certainly a few of the first and largest advertising accounts for *Good Housekeeping*, the advertisements designed for canned vegetable manufacturers like Del Monte and Libby's canned fruits and vegetables—the two major canned vegetable competitors—and advertisements for other canned food brands like Stokely's, Dole, Green Giant, and Del Miaz. In fact, according to *Canning Age*, "Libby, Del Monte, Campbell's and Heinz [had] done much to put canned foods in the strong position on the consumer's menu" by the end of the 1920's.¹⁰⁸ They did this through aggressive and elaborate advertising campaigns.

Libby, McNeill, and Libby—the same Libby indicted in the court of inquiry after the Spanish American war—took out six full page advertisements in the year 1922, which was in the heat of the National Canners Association labeling and educational campaign which sought to counteract the beleaguered reputation of commercially canned foods. Though each of these advertising spots were text heavy, Libby's used images of both delectable dishes composed of their products and the appropriately labeled canned products themselves. Overall, the ads highlighted the convenience, quality, and scientific process of commercial canning by highlighting the family of Libby's canned foods throughout the year: meat, condiments, vegetables, and fruits, complete with recipes or offers for recipe booklets by mail.¹⁰⁹

In the February 1922 issue of *Good Housekeeping*, Libby's ran an ad for canned beef. In this spot, Libby's assured readers that "They always like this good old-fashioned dish," a hash of

¹⁰⁸ "What Puts the 'Sales Appeal' into Canned Foods," *Canning Age* 8, no. 12 (November 1927): 874.

¹⁰⁹ Virginia E. Porter, the Director of the Mary Hale Martin Kitchen at Libby, McNeil & Libby argued that providing recipes, either in print ads or in mail-order form was an important part of educating the public, and Libby's had been so successful in this venture—to the tune of nearly half a million requests—that she believed "we are becoming indeed a nation of enlightened consumers." See Virginia E. Porter, "How Recipes Aid Sales," *Canning Age* 18, no. 4 (March 1937): 137.

corned beef, which was “much cheaper, easier to prepare and better” than homemade.¹¹⁰ The copy then told the story of a Midwestern housewife—a woman in the heart of America who wanted to feed a hearty corned beef hash to her family of five but found that the beef was quite expensive, especially since it cooked down and “lost more than two-thirds of its original weight in waste and shrinkage,” and the entire process of making the corned beef hash took close to three hours.¹¹¹ Libby’s Midwestern housewife spent 45 cents on nearly four pounds of meat that cooked down to only one edible pound, and in a fit of near desperation “if she was to have corned beef hash anywhere near as often as the family wanted it,” she purchased a 12 ounce can for 30 cents. Libby’s corned beef had no waste and was prepared by Libby’s “chefs,” who meticulously chose cuts that were “uniformly tender, delicate and delicious.”¹¹² Clearly, Libby’s was faced with the challenge of how to market this decidedly small can of prepared beef to consumers who would presumably take one look at it and disregard it. How could a 12 ounce can feed a family? According to the advertisement, this little can made enough hash for “ample helpings for her family of five,” and she could stretch it out further by adding more potato, “and still have a delicious hash.”¹¹³ Libby’s was well-seasoned, so it could easily be bulked up by more starch and keep the integrity of the dish. It was also easy to prepare—the corned beef was precooked and pressed into a mold held together by “a rich meat jelly.”¹¹⁴ Libby’s Midwestern housewife only had to cook some potatoes and then heat the mixture of beef and potatoes in a

¹¹⁰ Libby’s Corned Beef Ad, *Good Housekeeping*, February 1922, 101.

¹¹¹ Ibid.

¹¹² Ibid.

¹¹³ Ibid. “Libby’s chefs” also included four sauce recipes in this ad to transform this “good old Yankee dish” into something to delight bored palates.

¹¹⁴ Ibid.

skillet—a remarkable cut in preparation time. So, while the cost appeared to be more expensive than the fresh beef, the lack of waste, the speed from cooktop to table, and the deliciousness of the choice beef would afford Libby's Corned Beef a second look.

The next advertising spot for Libby's was in the April issue. In this springtime advertisement, Libby's showcased its canned peaches with the tag line, "Libby makes this summer delight one you can enjoy the whole year 'round."¹¹⁵ In this instance, Libby's was using the imagery of America's seasonal bounty and classic tastes in the same manner of the National Canner's Association advertising campaign. Even if the housewife found herself surrounded by peach orchards "covered with clouds of soft pink blossoms—fragrant—fairy like!" she would have to wait until late summer to enjoy the harvests.¹¹⁶ To placate that craving for peaches and cream, Libby's canned peaches, picked "the minute they are fully ripe—big, round, fine-flavored," and canned "right in the heart of the orchard land. . . [in] spotless Libby kitchens" and were a substitute for fresh.¹¹⁷ The advertising copy for canned peaches hit each of these points intentionally, addressing those pressing concerns that plagued the industry as a whole, including both smaller firms and the big manufacturers—big canners were not immune to scrutiny and distrust. Again, Libby's "chefs" assembled a few recipes for readers, not wasting an opportunity to let consumers know that Libby's made evaporated milk as well, which could be used to make the cream for dessert. Libby's chefs chose Libby's evaporated milk not because it made sense for them to use their employers' products, but because "they can be sure of its richness, its purity. . . . Libby condenseries, located in the richest dairy sections of the country, get each day a supply of

¹¹⁵ Libby's Peaches Ad, *Good Housekeeping*, April 1922, 106.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

tested milk from the herds of sleek, well-cared-for cows.”¹¹⁸ Quality, taste, and convenience, as well as sufficient imagery of the desserts and the cans used in the recipe complete this full page advertisement. This ad was successful because it showcased the company’s commitment to providing consumers with a tasty product that was easily adaptable to a myriad of desserts and dishes, all manufactured under strict standards of cleanliness and scientific precision.

The next two advertisements that Libby’s presented in 1922 were for their various canned meats and condiments. These two spots differ from February’s corned beef spot because they did not merely suggest a recipe or meal, but they actually address a lifestyle problem or situation. June’s advertisement tackled “When guests drop in for dinner—“ and August addressed the hot summer kitchen with “A stay-at-home vacation.”¹¹⁹ In both instances, Libby’s appealed to two issues that women’s magazines frequently addressed—what to serve when your husband surprised you by bringing home his boss, and how to survive the sweltering summer months but still feed your family hearty, wholesome meals. Libby’s understood the “most embarrassing experience” of cobbling together dinner for the boss and his wife from “scraps from Sunday’s roast,” arguing that with Libby’s products housewives could completely avoid that situation while giving the housewife a smug little “secret” that her “tempting dinners” were prepared by Libby’s “expert chefs.”¹²⁰ Though these enticing flavors and the convenience of having meals on hand were cornerstones of the campaign, sanitation was always lurking under the surface. “In the spotless Libby kitchens,” the copy reassured, “they do for you the heavy, the tedious part of preparing and cooking meats, meats which have been carefully inspected by the government.”¹²¹

¹¹⁸ Ibid.

¹¹⁹ Libby’s Ad, *Good Housekeeping*, June 1922, 183. Libby’s Ad, *Good Housekeeping*, August 1922, 99.

¹²⁰ Libby’s Ad, *Good Housekeeping*, June 1922, 183.

¹²¹ Ibid.

In this case, the manufacturer hoped to ensure consumers that not only did Libby's inspect and guarantee their own products, but that they also worked in tandem with government inspectors to ensure a safe, quality product.

According to advertising vignettes, cutting cooking time could during the heat of summer could make women feel like they took "a vacation right at home."¹²² The "drudgery" of cooking was only amplified during the summer months. This advertisement uses some of the same copy as the June spot, invoking the "tedious part of the cooking done in spotless, white-tiled kitchens by Libby's master chefs," and Libby's products were "fine meats which have been carefully inspected by the Government as well as by Libby." In addition, Libby's assured readers that their "meats are packed in sterilized, air-tight cans."¹²³ This particular advertisement goes one step further by using the term "sterilized," taking the stark-white image of the canning process to the next level by invoking the sterility of a laboratory environment. Though in this case they showcased the products and dishes in their use of visual images instead of images of scientists and the interior of a lab as the NCA advertisements suggested. In addition, Libby's added a tagline underneath their brand name at the bottom of the page: "Look for this name on the packaged foods you buy; it stands for the very highest quality."¹²⁴ In this case, Libby's was attempting to establish its brand name as synonymous with superiority with its distinctive labeling. Products like Libby's were backed by the government as well as *Good Housekeeping*, and seen as safe, healthy, and highly recommended at each meal.

¹²² Libby's Ad, *Good Housekeeping*, August 1922, 99.

¹²³ Ibid.

¹²⁴ Ibid.

The last two advertisements for 1922 were similar in style to the two prior ads. The October spot showcased Libby's condiments while the December spot focused on a bevy of canned vegetables. Again, these ads took the reader to another place—to the “Illinois and Indiana farm lands,” and once they were picked “brought at once to Libby farm kitchens close at hand—kitchens clean and sunlit.”¹²⁵ The imagery was perhaps even more indicative in the December ad, which led with “From the world's favored garden spots,” and enticed the consumer with a mini-travelogue: “to fertile valley orchards on the Pacific Coast where the finest peaches ripen slowly in the sun—to islands of the Sacramento River where grows asparagus noted for its plump and tender stalks. . . . And then in Hawaii, where acres and acres of undulated hillsides are green with the spears of an especially delicate variety of pineapple.”¹²⁶ The first leg of the vegetables' trip ended in the Libby's “kitchens,” or factories, where “tid-bits from all over the world are cooked into dainties of surpassing flavor.”¹²⁷ The destination, of course, was on the consumer's kitchen table. Even though these advertisements sought out to equate Libby's canned vegetables with the farmlands and the heartland of America, the key focus in these spots was the superior quality of their vegetables, which was directly tied to the quality of Libby's manufacturing facilities, or “kitchens.” By using the term kitchens, yet emphasizing sanitation, Libby's was attempting to suggest that their product was modern and traditional at the same time. Like home canned foods, their products were “put up” in kitchens, but unlike the home environment, Libby's could ensure a markedly cleaner facility and more thorough sanitizing

¹²⁵ Libby's Ad, *Good Housekeeping*, October 1922, 192.

¹²⁶ Libby's Ad, *Good Housekeeping*, December 1922, 95.

¹²⁷ Ibid.

process. So, while Libby's wasn't being especially transparent about their process, at this point in the 1920's they were attempting to bridge that gap with these advertising spots.

Del Monte was more explicit with its use of scientific rhetoric and discourse in its advertisements in order to convey the idea that Del Monte products were superior to all others. In a full page ad in the April 1930 issue of *Good Housekeeping*, Del Monte boldly asked readers to contemplate whether “eugenics [can] bring us better foods?”¹²⁸ While this ad was particularly text-heavy, the text was flanked by a full-size ear of fresh corn in an attempt to show readers the quality of fresh corn that went into every can of Del Monte canned corn. The copy began by arguing that while eugenics had ushered in the era of “building a finer *human* race,” it also brought better food to the table through the “scientific principles of heredity and environment.”¹²⁹ Ad copy explained that scientists with Del Monte had carefully selected seeds that produced “deeper, plumper kernels—more even development of starch and sugar,” so that Del Monte's product would be more consistent and “dependable.”¹³⁰ Del Monte argued that these things would only matter to readers if they were decidedly “particular—if you appreciate flavor and quality at their best.”¹³¹ People who chose to pay for the Del Monte brand had discriminating tastes and expected a more refined, delicate product. This advertisement also expects a certain amount of scientific knowledge from readers—they would have to have a rudimentary understanding of eugenics for the advertisement to make sense. A similar understanding is required in a later advertisement for Del Monte asparagus which emphasized

¹²⁸ Del Monte Ad, *Good Housekeeping*, April 1930, 228.

¹²⁹ Ibid.

¹³⁰ Ibid.

¹³¹ Ibid.

that their product was “vitamin protected.”¹³² It was one thing to use words like “health” when describing a product, but “vitamin” was an emotionally charged word in the 1930’s and 1940’s. Mothers all across the United States were concerned with the vitamin content of foods, especially when it came to their children. Del Monte jumped on this discourse, even providing consumers with a list of all the vitamins found in thirty of their most popular canned products.¹³³ In fact, Del Monte argued that “only dependable quality pays,” and paying for their vitamin guarantee was an important “safeguard for you and your family.”¹³⁴ Del Monte, then, both expected consumers of their product to understand the real cost of thrift in terms of the science of health and used scientific language to reinforce the modern and beneficial aspects of their products.

Del Monte and Libby both attempted to educate consumers about what went on behind the doors of the cannery and gave a brief history of the canned food industry in illustrated one-page ads. In a 1930 advertisement for Del Monte canned vegetables, beneath an image of a side-dish of canned spinach with hard-boiled eggs the advertising copy explained just how much water it took to clean spinach, taking the reader through the step by step process of rinsing and boiling, as the tender green was bombarded with “jets [of water] from every angle,” where “even the air seems moist—as if we stood above some mountain falls.”¹³⁵ “*Perfectly clean*” spinach then made its way into cans, with the help of “rubber-gloved workers,” thereby emphasizing the cannery’s idealistic pristine working conditions. A 1942 advertisement for Libby’s went into the cannery laboratory, where “food chemists and other research men are at work on food

¹³² Del Monte Ad, *Good Housekeeping*, April 1934, 144.

¹³³ Del Monte Ad, *Good Housekeeping*, October 1933, 205.

¹³⁴ Del Monte Ad, *Good Housekeeping*, December 1933, 158.

¹³⁵ Del Monte Ad, *Good Housekeeping*, January 1930, 166.

problems—*good nutrition especially*.¹³⁶ Home economists in white-coats were also part of this advertisement, working in Libby's "experimental kitchen" where they tested recipes and worked on helping women make meals that were "appetizing, nutritious, and economical."¹³⁷ All of these experts played essential roles in getting the can to the grocer's shelves, and through this seemingly informative advertising, both Del Monte and Libby's hoped to convince consumers that medical, educational, and industry professionals made it their job to ensure that the newest findings in hygiene and nutritional science were applied to each can. Both companies believed that what they were doing was showing a level of transparency that consumers wanted.

The 1920's and 1930's were also the years of the "Fruit Wars" between Del Monte and Dole, who both took out advertising space for their various canned fruits—especially the "romance and spirit of romance" that ensconced the exotic canned pineapple.¹³⁸ The Association of Hawaiian Pineapple Canners also played a role in developing a consumer taste for this sweet exotic fruit, arguing that the technology of the can made it possible for every American family to enjoy Hawaii's cash crop. In the ads that the association printed in *Good Housekeeping* they frequently recommended that readers put in orders for a case of twelve cans because "you really can't overstock."¹³⁹ Canned pineapple was "available at all seasons," and was touted by the Association as "one of Nature's most healthful fruits," touching on two modern ideas of year round availability of seasonal goods and the value of nutrition.¹⁴⁰ In fact, Del Monte brand asserted that "for FRESH Pineapple at its best you must buy it CANNED" because "ripe

¹³⁶ Libby's Ad, *Good Housekeeping*, November 1942, 19.

¹³⁷ Ibid.

¹³⁸ David Heenan, Jr. "The Hawaiian Pineapple," *Canning Age* 3, no. 4 (April 1922): 4.

¹³⁹ Hawaiian Pineapple Ad, *Good Housekeeping*, June 1928, 111.

¹⁴⁰ Hawaiian Pineapple Ad, *Good Housekeeping*, December 1924, 94.

pineapple is too fragile to stand shipment when fresh.”¹⁴¹ Both Del Monte and the AHPC advertised pineapple as a fruit that was sort of a blank slate with “endless” recipe ideas—both sweet and savory—which readers could send off for through the mail. Included in their print ads were images of delectable pineapple dishes prepared with either sliced or crushed canned pineapple.

Dole’s advertising angle was different because instead of making recipes from canned pineapple the focus, the Hawaiian Pineapple Company made sure to emphasize the natural environment that gave birth to their fruit and the freshness and nutritional value of their product. In fact, instead of images of prepared dishes and cans of pineapple, Dole made sure that every advertisement either contained images of the fruit in its whole, fresh form, or the pineapple farms themselves. In one full page ad, Dole surrounded the text which described the “Jim” Dole timeline with a landscape border that took the reader to the heart of the Hawaiian pineapple farms. The text told the story of James D. Dole, who, with a dream in his heart of a “far off romantic land,” moved from Boston to Hawaii and in less than 30 years headed a company boasting nearly 40,000 acres of farmland devoted to pineapple.¹⁴² The pictorial ad emphasized both the fruit’s exoticism on one hand, and the individual ingenuity behind Jim Dole, who not only owned almost half of all of Hawaii’s pineapple farmland, but also transformed his cannery into one that canned “45,000 cans of the luscious fruit. . . . in half an hour,” with the “greatest capacity of any fruit cannery in the world—63,000,000 cans a year,” emphasizing the sheer mass of the pineapple canning operations and the use of modern technology that made this

¹⁴¹ Del Monte Ad, *Good Housekeeping*, June 1922, 161.

¹⁴² Dole Pineapple Ad, *Good Housekeeping*, June 1927, 138.

amazing feat possible.¹⁴³ Other spots included cross-sections of the entire fruit split open to show its freshness, with the assurance that the reader “need *never* guess again when buying Canned Hawaiian Pineapple.”¹⁴⁴ Dole never missed an opportunity to recreate a Hawaiian landscape for consumers, stating that their product was “grown on our own plantations in Oahu and Lanai—the choicest pineapple fields of Hawaii,” complete with an image of a ripe pineapple in the fields.¹⁴⁵ Dole wanted consumers to equate their product with both the exoticism of the islands and the freshness of the crops. Freshness, and the “well-known, scientifically established nutritive elements in canned pineapple” retained by their patented “Fast-Seal” vacuum packing process were points that Dole emphasized.¹⁴⁶

Indeed, the nutritional value of canned pineapple became the main focus of the Pineapple Producers Co-Operative Association, which also took out advertising space in *Good Housekeeping* during the interwar period. Pineapple manufacturers essentially had a two-pronged approach to advertise the fruit and “the whole story” of its manufacture in the islands, and then each brand would also market its individual product.¹⁴⁷ In full page ads, the Educational Committee of the Pineapple Producers Co-Operative Association outlined the nutrients and “essential health values” that “new research” had brought to light about the canned fruit.¹⁴⁸ Recommending “One Meal a Day with Canned Pineapple,” these ads emphasized that canned pineapple—and only the canned version—contained “more known dietetic values than

¹⁴³ Ibid.

¹⁴⁴ Dole Pineapple Ad, *Good Housekeeping*, March 1930, 211.

¹⁴⁵ Dole Pineapple Ad, *Good Housekeeping*, March 1934, 130.

¹⁴⁶ Ibid.

¹⁴⁷ “Pineapple Advertising Strikes Right Note,” *Canning Age* 3, no. 8 (August, 1922): 52.

¹⁴⁸ Pineapple Producers Co-Operative Association Ad, *Good Housekeeping*, January 1933, 109.

any other fruit contains.”¹⁴⁹ In fact, they argued that two rings of canned pineapple contained the same “dietetic value” of tomatoes, butter, oranges, and prunes due to “the temperatures applied in canning caus[ing] a beneficial change of dietetic importance.”¹⁵⁰ Here was a canned food that was more nutritious than the fresh version, and could take the place of several other foods in supplying vitamins A, B, and C, as well as several minerals like copper, iron, and calcium.¹⁵¹ Canned pineapple appeared to be a nutritional powerhouse, thereby addressing lingering concerns of nutritional loss in the canning process and actually suggesting that canning could improve the nutritional profile of foods. These claims were also backed by that trusted *Good Housekeeping* Seal, and thus these various advertisements chipped away at the bad publicity that hung heavily over those tin cans that filled the grocer’s shelves.

Other fruit and vegetable producers, like Stokely’s Vegetables, emphasized the economics, safety, and healthiness of canned foods in their advertisements. In a 1931 advertisement for Stokely’s honey pod green peas, the manufacturer explained that consumers could take comfort in the flavor, value, and safety of Stokely’s peas because of “three exclusive Stokely features.” First, the company claimed that they use “specially developed seeds” of five different sizes to achieve an unmatched flavor profile that “blended the flavor of every good pea in the pod.”¹⁵² The advertising copy also emphasized that Stokely’s peas were “cooked under pressure in hermetically sealed, golden-lined cans,” which helped them “retain their delicate garden-fresh flavor.”¹⁵³ Stokely was known for their lining, with the gold enamel color assuring

¹⁴⁹ Ibid.

¹⁵⁰ Pineapple Producers Co-Operative Association Ad, *Good Housekeeping*, February 1933, 161.

¹⁵¹ Pineapple Producers Co-Operative Association Ad, 109.

¹⁵² Stokely’s Ad, *Good Housekeeping*, March 1931, 233.

¹⁵³ Ibid.

the consumer that they purchased the right product—which was important in the days of unstructured labeling, and unmistakably lending an air of luxury to their cans. That gold color guaranteed that the product was “the finest scientific growing can produce,” as a similar ad for creamed and whole kernel corn illustrated.¹⁵⁴ Stokely also claimed that the gold lining provided an additional benefit by protecting the vegetable’s “flavor, appearance and health value until you serve it.”¹⁵⁵ Stokely was so sure of the quality and health benefits of their brand of vegetables that they urged readers to “ask your doctor,” about the nutritional value of their vegetables.¹⁵⁶ Their brand of vegetables was a good economic choice, since Stokely claimed to fill their cans to the brim, while priced “at moderate cost,” thereby convincing consumers that it was worth the extra few cents to purchase their product.¹⁵⁷

Canned food manufacturers, however, were not the only ones contributing advertising that hoped to illustrate just how far canned foods had come in regards to scientific advancement, sanitation, health, convenience, and safety—companies that made the actual cans also weighed in on the campaign and touted their own brands.¹⁵⁸ During World War II, can manufacturers took out full page ads in *Good Housekeeping* that relied heavily on the durability of canned foods making them ideal for combat, asking American women to not forget about canned foods

¹⁵⁴ Stokely’s Ad, *Good Housekeeping*, March 1933, 211.

¹⁵⁵ Ibid.

¹⁵⁶ Stokely’s Ad, *Good Housekeeping*, May 1934, 214.

¹⁵⁷ Stokely’s Ad, 233.

¹⁵⁸ The manufacturers of can openers can be included in this because canners believed that a safe, properly working can opener played a significant part in the housewife’s acceptance of canned food products. The housewife who cuts her hand on a jagged can lid established “a prejudice against canned foods” and would remember that pain every time she saw canned foods in her local grocery or in her own pantry. See “Recipes for Profit,” in *Food Industries* 3, no. 2 (February 1931): 50.

because “After Victory—They’ll All Be Back!”¹⁵⁹ In one ad, asking housewives “What container stands up under . . . all the tests of war? . . . all the tests of peace?” the Can Manufacturers Institute, Inc. argued that not only were canned foods the only way to get nourishment to the men safely “in the sizzling tropics. . . the frozen artic. . . on the fighting fronts,” but the food was commissioned because it was equally nutritious.¹⁶⁰ The manufacturers used drawings based on images from the front lines, but juxtaposed these images with those of “peace,” in which well-dressed women chose canned goods in their local grocery stores, along with images of robust children growing strong on the nourishment of canned foods. The copy explained that “cans are sealed hermetically,” and that “canned foods are so readily digestible. . . excellent for children,” with contents that were “grown from pedigreed seed, preserved at the peak of their flavor,” adding the tag line that “No Other Container Protects Like the Can.”¹⁶¹ In 1944 and 1945, the Can Manufacturers Institute bombarded nearly every issue of *Good Housekeeping* with similar ads—ads that emphasized the use of canned foods during wartime, images of smartly dressed women celebrating the utility of the can, and the nutrient value that would ensure that young children—mostly boys—would grow up strong because canned foods were “light- and air- tight, as well as tamper-proof, [and] it keeps out moisture, dirt, gas, germs [and] . . . keeps in color, flavor, vitamins and minerals.”¹⁶² One ad featured a woman getting out of an automobile while two men in their dress uniforms walked by arm in arm with a human-sized can. The copy explained, “You can look, lady. . . it’s no military secret. . . . our United

¹⁵⁹ Can Manufacturers Institute Ad, *Good Housekeeping*, January 1944, 106. Canned foods were rationed during the war so that tin could be saved and food could go to the soldiers overseas.

¹⁶⁰ Ibid.

¹⁶¹ Ibid.

¹⁶² Can Manufacturers Institute Ad, *Good Housekeeping*, July 1944, 121.

States fighting forces are the best fed in the world. And it couldn't happen without cans!"¹⁶³

This particular full-page ad also contained a brief True or False test for readers, with each question addressing concerns of thrift, sanitation, safety, and nutritional value.¹⁶⁴ Like the armed forces, who were stalwartly protecting democracy and freedom abroad, the can was a dependable and hearty addition to every pantry.

Once the war was over, the Can Manufacturers shifted their focus away from the use of the products by the armed forces to more traditional advertising motifs, such as a holiday meal smorgasbord or the nutritional needs of babies and children.¹⁶⁵ Baby foods, packed in cans, readied young Americans for their later life, according to Can Manufacturers Institute, since once "he develops into a full-fledged grown-up—cans play an ever-increasing part in his daily life."¹⁶⁶ The holiday meal and Sunday meal advertising spreads used attractive images of bountiful meals good enough to serve for company or that special family gathering, but they also took care to point out that "food authorities"—the ad references an article from the August 1944 edition of the *Journal of Nutrition*—"trust foods in cans" because science had proven that the vitamins and minerals were not "cooked away" in the canning process.¹⁶⁷ The ads also underscored the ways that mechanization had changed canning, not only lessening the hands that touched the raw fruits and vegetables, but also processing the goods "swiftly" so that "losses due to exposure and transportation are cut to a minimum."¹⁶⁸ One ad used an image of a male

¹⁶³ Ibid.

¹⁶⁴ Ibid.

¹⁶⁵ Can Manufacturers Institute Ad, *Good Housekeeping*, September 1945—January 1946.

¹⁶⁶ Can Manufacturers Institute Ad, *Good Housekeeping*, September 1945, 153.

¹⁶⁷ Can Manufacturers Institute Ad, *Good Housekeeping*, March 1946, 79.

¹⁶⁸ Can Manufacturers Institute Ad, *Good Housekeeping*, May 1946, 84.

scientist in a white coat performing one of the “many tests given to foods in modern canneries. . . . to make sure they retain their good qualities in the steel-and-tin cans,” adding that readers could “serve modern canned foods proudly” because of these painstaking tests.¹⁶⁹ Again, it was because of science that canned foods could be trusted and relied upon as safe and healthy additions to their tables.

Other ads were much more explicit in their use of scientific imagery to sell their products. *Good Housekeeping* published a supplementary ad titled “Here’s Why You’ll Like This Tomato Juice,” in their May 1942 issue advertising why readers should trust and purchase the tomato juice advertised in *Good Housekeeping*. This ad, a mix of paragraphs of text with pencil drawings illustrated a behind the scenes look at the testing process that would result in advertised juice receiving the *Good Housekeeping* Seal. The advertising copy assured readers that the Institute went through an arduous testing process not because the Institute knew better, but because *Good Housekeeping* readers were scrupulous buyers, and the Institute wanted to “make sure it [tomato juice] would meet [the readers’] expectations.”¹⁷⁰ The images with the text featured a *Good Housekeeping* inspector in a white coat standing in front of the canning factory, white smoke billowing above indicating that the cannery was hard at work processing foods for America’s tables. The next two images included male inspectors pouring canned tomato juice in beakers and test tubes in their makeshift laboratory, while a female inspector documented the inspector’s findings. The final image included well-dressed men and women, the “critical palates” of *Good Housekeeping*’s “Tasting Jury,” joyously partaking in the juice.¹⁷¹ This

¹⁶⁹ Can Manufacturers Institute Ad, *Good Housekeeping*, March 1946, 79.

¹⁷⁰ Tomato Juice Ad, *Good Housekeeping*, May 1942, 153.

¹⁷¹ Ibid.

advertisement was not just an ad for tomato juice—it was also advertising the seal and illustrating the scientific process that the Institute undertook to provide this guarantee to its readers. *Good Housekeeping* employed a similar technique in 1949 in a text-heavy spot explaining to readers how “a home economist or engineer surrounded by stacks of tin cans is a familiar sight in the Institute’s laboratory.”¹⁷² The copy, advertising how the magazine chose which can openers deserved their seal, explained that testing in the lab was a “long process,” which included tests to ensure that the amount of metal shards that fell into the canned product upon opening with the can opener was not “more than the minutest quantity,” tested on “sensitive, analytical balance scales.”¹⁷³ Even the testing of can openers was subjected to the scientific process.

Manufacturers of home canning equipment, especially pressure cookers, glass jars, and canning rings and lids also joined in advertising efforts, but instead of emphasizing new scientific knowledge that shed new light on the process of home canning, the producers of canning products touted their wares as the “secrets” to “avoiding canning failures” and products home canners could “trust,” thereby taking away much of the agency of the housewife in using her own knowledge to conserve the family’s bounty of seasonal produce and protect them from food poisoning.¹⁷⁴ Most manufacturers of canning products also offered “textbooks” for home canners that would help demystify successful canning, though as the name of Good Luck Jar Rubbers suggested, there was still a large degree of “art” or “luck” to the home process, which made the process appear to be a gamble on the family’s health. Good Luck Rubbers were placed

¹⁷² Good Housekeeping Institute Ad, *Good Housekeeping*, December 1949, 25.

¹⁷³ Ibid.

¹⁷⁴ Hanson Silver Clipper Family Scale Ad, *Good Housekeeping*, August 1937, 161; Good Luck Jar Rubbers Ad, *Good Housekeeping*, July 1932, 182; Good Luck Jar Rubbers Ad, *Good Housekeeping*, July 1931, 207; Good Luck Jar Rubbers Ad, *Good Housekeeping*, May 1933, 216.

on the inside of jar lids to create a safety seal, which if left out would “risk spoiling your season’s supply of home canned foods.”¹⁷⁵ They were touted as a form of “insurance,” suggesting again that home canning had many uncontrollable factors outside of the understanding of the typical housewife.¹⁷⁶

In the 1920’s, before pressure cookers were widespread, companies like Atlantic Stamping Company of New York sold their Col-Pac Canner sets, which included a “wash boiler,” which was essentially a large metal tub with a lid into which homemakers would submerge the insert, which was either a rack or a pan that held quart jars.¹⁷⁷ Advertisements for the Col-Pac Canner were simple, and touted the boiler’s ease of use, but argued that home canners should not use “make-shift canning equipment,” and instead use their specialty equipment.¹⁷⁸ Realistically, however, the Col-Pac canner was no different from other large cooking or even stove-top clothes washing vessels that housewives already had at home. By the 1940’s, pressure cookers—a more sophisticated piece of kitchen equipment—were taking out advertising space in *Good Housekeeping*. These pressure cookers, from companies like Presto, Mirro, and Wear-Ever, took advantage of the discourse of science to encourage readers to bring these brands of products into their homes. For example, pressure cookers emphasized the health benefits of cooking foods under pressure—because it cooks for a shorter amount of time, “beginners as well as experienced homemakers” could be assured that the “vitamins and minerals” were retained.¹⁷⁹ Mirro Aluminum Goods Manufacturing Company suggested that

¹⁷⁵ Good Luck Jar Rubbers Ad, *Good Housekeeping*, May 1933, 216.

¹⁷⁶ Ibid.

¹⁷⁷ Atlantic Col-Pac Canner Ad, *Good Housekeeping*, August 1923, 107.

¹⁷⁸ Ibid.

¹⁷⁹ Presto Pressure Cooker Ad, *Good Housekeeping*, September 1946, 198.

consumers purchased their product “by comparing, by asking neighbors and friends, by consulting home economists,” and having peace of mind that the foods cooked in a Mirro cooker retained “a larger portion of vitamins and minerals.”¹⁸⁰ The National Pressure Cooker Company advertised that their cookers were “made by the pioneers in the pressure cooking field, and backed by 33 years of scientific research,” and they added that using pressure cookers was the “only safe way to process non-acid foods,” recommended by the USDA.¹⁸¹ It was science that made home canning safe, and these products used focus points similar to canned food manufacturers to assure readers that canned foods were nutritious and could be an economical, palatable addition to any table. With the authority of the government, *Good Housekeeping*, and science, these companies sought to confirm their value to consumers.

Good Housekeeping magazine, in its entirety, is the perfect example of an all-encompassing educational tool meant to provide definitive evidence against the scourge of rumors that overshadowed commercially canned foods in the first half of the twentieth century. Its advertisements, the *Good Housekeeping* Seal, letters to the Question Box, and contributing articles all worked together to synergistically and systematically root out what the National Canners Association’s members believed to be untruths purported by an uneducated public. By being an authority on the canning process, *Good Housekeeping* encouraged the use of pressure cookers as the only approved and safe method to can non-acidic fruits and vegetables at home, thereby backing away from wholehearted endorsement of home canning. As physicians and scientists, the contributors helped educate and mediate dialogue between canners and consumers which gave the magazine life beyond the pages and allowed its issues to serve as a sort of living

¹⁸⁰ Mirror Pressure Cooker Ad, *Good Housekeeping*, September 1947, 132.

¹⁸¹ National Pressure Cooker Company Ad, *Good Housekeeping*, July 1948, 177.

document that women traded and borrowed—and probably discussed in their social circles. By being a part of the educational process, instead of just being lectured to by the magazine, readers felt less threatened, as *Good Housekeeping's* sales help to suggest. At the same time, *Good Housekeeping* was a successful advertising tool for commercial canners and canning implement manufacturers, who benefitted from the seal and the myriad of recipes that included canned foods as part of the ingredients list in nearly every issue. In articles that took readers into the cannery or that emphasized the ways that new modern cookery took the place of the drudgery of years past, commercial canners used the rhetoric of science to construct a language that both contributors *and* readers could utilize to compose a new discourse that touted the benefits and peace of mind in purchasing commercially canned foods. Ultimately, this benefitted the consumer economy by showing women how they could purchase health, safety, and efficiency by purchasing products manufactured by American industry and American men.

CONCLUSION: SELLING MODERNITY: CANNED FOODS AND MODERN AMERICA

In 1899, the estimated consumption of canned goods per American was less than two and a half pounds per year.¹ According to Home Economics researchers Janet Murray and Ennis Blake, who published the study, *What Do We Eat? Food: The Yearbook of Agriculture, 1959*, by the late 1950's, Americans of all classes consumed nearly thirty pounds of canned foods per week.² Canned foods, in a sense, had undergone a radical transformation. By 1950, the total number of cases (a case is 24 cans) of fruits, vegetables, and juices produced for purchase in America was over 265.8 million cases.³ In fifty years, sales of canned goods also grew exponentially, making canned foods a mainstay of American kitchens. More than the story of how an industry reshaped its identity from one of danger to one of modernity and health, which resulted in the explosion of a consumer culture centered upon packaged and processed foods, the story of the transformation of canned foods can tell us about the ways that Americans began to adopt a trusting attitude towards science, technology, and expertise. Through advertising and informative articles written by experts, American households learned about bacteriology, sanitation, the chemical makeup of foods, and the progression and prevention of illnesses and disease. Scientists like Harvey Wiley and Willard Bigelow became household names, becoming the face of nutrition and safe cooking advice for millions of women who read their commentaries and advice in magazines and newspapers. Women across America came face to face with bacteria and germs, instead of dreaded ptomaines, and attempted to reconcile years of anecdotal

¹ E. G. Montgomery, "Consumption of Canned Goods Shows Continued Increase," *Food Industries* 3, no. 1 (January 1931): 9.

² Janet Murray and Ennis Blake, *What Do We Eat? Food: The Yearbook of Agriculture, 1959*, Washington, D. C.: Government Printing Office, 1959, 608-609 (609-619)

³ *U.S. Bureau of the Census, Statistical Abstracts of the United States 1971*. (92nd Annual Edition.) Washington, D.C., 1971.

evidence in the art of canning with new laboratory findings. In order to take part in the consumer marketplace, women had to know the meanings of terms like “botulism,” “bacteria,” “molds,” further had to have an understanding of the scientific techniques that ensured a healthy product. It was not enough for women to learn how to keep a clean home and purchase new appliances—women also had to take heed of the new findings of nutrition science and use that information to make their families robust and efficient. Vitamins A, B, and C, found in fruits and vegetables, became everyday concerns. As a result, women looked for these and other buzzwords pertaining to health and vitality to complete their grocery orders and purchases. The authority of science played a larger role in women’s weekly shopping lists than ever before. This truly was the modern age of science.

Canned foods also can tell us about how the federal government and big business worked together towards standardization and regulation, to the detriment of small, independent businesses, using the rhetoric of consumer protection and safety. Canned food manufacturers led the way for tougher standards for different qualities of product. With science on their side, canners employed newer technologies and better ways to guarantee that their product would not spoil, and used advertising as a medium to transmit this scientific advancement. Gone were the days when industry executives hid their canning techniques for fear of competition. Instead, canners ushered in an era of transparency and standardization of temperatures, along with inspection of equipment and various stages of processing, and publicized their advancements to the public in billboards and print ads. Some canneries even instituted tours of their facilities so that the public could revel in their stark white kitchens, clean processing floors, and mechanized packing and sealing of cans. The corporation stood as a powerful example of how science had made a better American product, and in turn could make a better America. Cleanliness, state-of-

the-art machinery, and an agreed upon set of quality standards made canned food manufacturers a star example of modernity in practice.

In addition, the story of the rise of canned foods illustrates how consumers became better educated and also more skeptical of the promises made by advertising executives, who used new techniques of psychology and quantitative methods to strike an important chord in the psyche of Americans who were uncertain about the safety and wholesomeness of canned foods.

Consumers did not simply write in to magazines like *Good Housekeeping* asking for clarification about advertising claims. At the grass-roots level, a consumer advocacy movement came about that gave new meaning to “consumer education.” Publications like Consumers’ Research, Inc., which published the “confidential” *Consumers’ Research Bulletin*, took issue with industry instruments like women’s magazines, arguing that these sources were made for the “gullible housewife” who could easily be convinced that “factory-canned goods are as good as, or even seriously. . . compared with, her own.”⁴ Still, Consumers’ Research was optimistic that most women were becoming more educated about false or outrageous claims, despite the fact that women’s magazines assured readers that industries like the canned foods industry were “thoroughly filled with sweetness and light and purity.”⁵ Consumers’ Research claimed that they made real tests of products, and they took pride in their articles that instructed readers about how to read advertisements, and gave readers the inside scoop on how advertising executives made a game of coming up with “quaint, delightful illusion and dramatization,” because they believed that the “public loves it.”⁶ Consumers made Arthur Kallet and F. J. Schlink’s *100,000,000*

⁴ “*Good Housekeeping* Magazine Helps the Cannery Against Consumers,” *Consumers’ Research Bulletin* 1, no. 1 (November 1934): 7.

⁵ Ibid.

⁶ “Some ‘Quaint, Delightful Illusions’ of Advertising” *Consumers’ Research Bulletin* 1, no. 1 (November 1934): 11.

Guinea Pigs: Dangers in Everyday Foods, Drugs, and Cosmetics (1932) a best-seller and took it through several reprints. In the text, Kallet and Schlink argue that corporations were taking advantage of consumers by selling them cheap, ineffective, or dangerous concoctions and compounds, or making false claims to health and disease prevention in order to sell products.⁷ During the 1930's and 1940's consumers got a second education in being skeptical, savvy consumers.

Canned foods also tell a gendered story—marketed solely to women, advertisements for canned foods valued male expertise and ingenuity, appealing to an overall cultural shift that valued male expertise over traditional female experience.⁸ The scientific discoveries of male chemists and physicians had trumped the experiences of generations of female home canners, who passed down the “art” of canning as they taught their daughters and granddaughters how to become proper homemakers. Home canning was only suggested to those women who could understand the science of bacteriology, which came from the research of male scientists. Without science, home canning was seen as a rightfully lost—albeit dangerous—art. In advertisements, scientists were nearly every time portrayed as men, while women served as instructors in cooking or as lab assistants. Male grocers were also featured in advertisements, typically in the stance of a learned guide who met with harried women who came into the store at the last minute in search of a solution for her food catastrophe. Men were also the physicians and doctors who answered reader questions in magazine features, symbolizing the male authority

⁷ Arthur Kallet and F. J. Schlink *100,000,000 Guinea Pigs: Dangers in Everyday Foods, Drugs, and Cosmetics* (New York: Vanguard Press, 1932). For more on consumer advocacy, see Charles McGovern, *Sold American: Consumption and Citizenship, 1890-1945* (Chapel Hill, NC: University of North Carolina Press, 2006), 186-220; Elizabeth Cohen, *A Consumers' Republic: The Politics of Mass Consumption in Postwar America* (New York: Vintage Books, 2003).

⁸ Rima Apple discusses this at length in her book *Perfect Motherhood: Science and Childrearing in America* (New Brunswick, NJ: Rutgers University Press, 2006).

of science who disseminated information to the masses. Canned food advertising reinforced the roles of women as caretaker and homemaker, declaring what a woman's concerns should be if she were to fulfill her duties in the home—and what woman would not want to do that? The modern housewife knew her vitamins, listened to her doctor, and trusted the scientists who ensured that commercially canned foods were nutritious, wholesome, and safe. While women could serve as mediators between the industry and consumers, or physicians/scientists and consumers, in the position of home economist or domestic scientist, they still deferred to male authority.

The can had also become a symbol of American ingenuity, progress, and patriotism. American canned goods became known world-wide as a top-notch, quality product. During the Depression, home canning was also seen as a tool of unemployment relief—across the country, communities set up canning cooperatives to put up surplus fruits and vegetables “to provide an emergency supply for those without income to buy it.”⁹ Canned foods also became the mainstays of charity groups, who began massing stockpiles of canned foods to give to the poor and needy. During wartime, canning at home became a woman's patriotic duty, in addition to the practice of recycling used tin for the war effort. As always, canned foods were a cornerstone of the diet of the U.S. military. Conservation of tin and wartime production of canned foods for the war effort made it appear that canned foods were imperative for U.S. success in World War II. Canned foods became a symbol of American progress, prowess, and resilience in the face of an increasingly changing—and sometimes dangerous—world stage. The study of the progression of canned foods from a “national evil” to a pantry staple is not just a history of an industry. This history tells the story of the American public's attempts to mitigate and at the

⁹ “News of the Month,” *Food Industries* 3, no. 9 (September 1931): 406.

same time embrace change, accepting a palatable modernity by carefully opening and effortlessly preparing a can of vegetables.

REFERENCES

Primary Sources

Periodicals

Advertising Age

American Cookery

American Food Journal

American Journal of Public Health

The American School Board Journal

Archives of Internal Medicine

The Canner

Canning Age

Food Industries

Food Research

Good Housekeeping

Journal of the American Medical Association

Journal of Bacteriology

Journal of Home Economics

The Journal of Industrial and Engineering Chemistry

Journal of Infectious Diseases

Medical Record

New York Times

Science

Scientific Monthly

Wholesale Grocery Review

Court Documents

Foods Furnished by Subsistence Department to Troops in the Field, Record of a Court of Inquiry, Three Volumes, 56th Congress, 1st Session of the Senate, Document No. 270, Washington: Government Printing Office, 1900.

Government Bulletins

Breazeale, J. F., "Canning Vegetables in the Home," *United States Department of Agriculture Farmers' Bulletin* 359, May 1909.

Geiger, J. C. et al. "The Epidemiology of Botulism," *Public Health Bulletin Number* 127, September 1922.

"Food Poisoning." *Annual Report of the Surgeon General of the Public Health Service of the United States*, Document No. 2918, Washington: Government Printing Office, 1922

Iowa State College of Agriculture and Mechanic Arts Extension Service, *Home Economics Bulletin: Number 31—Canning by the "Cold-Pack" Method*, Ames, Iowa, 1922.

Books

Balch ,Emily Greene. *Our Slavic Fellow Citizens*. New York: Charities Publication Committee, 1910.

Cooley, Anna M. et. al. *Teaching Home Economics*. New York: The Macmillan Company, 1919.

Dickson, Ernest. *Botulism: A Clinical and Experimental Study* New York: The Rockefeller Institute for Medical Resesarch, 1918.

Elliot, Sophronia Maria. *Household Bacteriology*. Chicago: Home Economics Association, 1907.

Farmer, Fannie. *The Boston Cooking-School Cook Book*. Boston: Little, Brown and Co., 1921

Forster, Edith Hall, and Mildred Weigley. *Foods and Sanitation: A Text Book and Laboratory Manual for High Schools*. Chicago: Row, Peterson and Company, 1914.

Gulick, Sidney L. *The American Japanese Problem: A Study of the Racial Relations of the East and West*. New York: Charles Scribner & Sons, 1914.

Hughes, Mary B. *Everywoman's Canning Book: The A B C of Safe Home Canning and Preserving by the Cold Pack Method*. Boston: Whitcomb & Barrows, 1918.

Lara, Lázaro Gutiérrez de and Edgcomb Pinchon. *The Mexican People: Their Struggle for Freedom*. New York: Doubleday, Page & Co. 1914.

Jordan, Edwin Oakes. *Food Poisoning*. Chicago: The University of Chicago Press, 1917.

Parola, Maria. *Canned Fruit, Preserves and Jellies: Household Methods of Preparation*. Chicago: The Saalfield Publishing Company, 1917.

Scott, Walter Dill. *The Psychology of Advertising: A Simple Exposition of the Principles of Psychology in Their Relation to Successful Advertising*. Boston: Small, Maynard & Co, 1908.

Secondary Sources

Adams, Sean Patrick. "Hardtack, Canned Beef, and Imperial Misery: Rae Weaver's Journal of the Spanish-American War," *The Wisconsin Magazine of History* 81 no. 4 (Summer 1998): 243-266.

Apple, Rima. *Perfect Motherhood: Science and Childrearing in America*. New Brunswick, NJ: Rutgers University Press, 2006.

--. *Vitamanía: Vitamins in American Culture*. New Brunswick, NJ: Rutgers University Press, 1996.

Bederman, Gail. *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917*. Chicago: The University of Chicago Press, 1996.

Cowan, Ruth Schwartz. *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave*. New York: Basic Books, Inc., 1983.

Diner, Hasia R. *Hungering for America: Italian, Irish, & Jewish Foodways in the Age of Migration*. Cambridge: Harvard University Press, 2001.

Eighmey, Rae Katherine. *Food Will Win the War: Minnesota Crops, Cooks, and Conservation during World War I*. St. Paul, MN: Minnesota Historical Society, 2010.

Elias, Megan J. *Stir it Up: Home Economics in American Culture*. Philadelphia: University of Pennsylvania Press, 2008.

Enstad, Nan. *Ladies of Labor, Girls of Adventure: Working Women, Popular Culture, and Labor Politics at the Turn of the Twentieth Century*. New York: Columbia University Press, 1999.

- Gabaccia, Donna R. *We Are What We Eat: Ethnic Food and the Making of Americans*. Cambridge: Harvard University Press, 1998.
- Goldstein, Carolyn M. *Creating Consumers: Home Economists in Twentieth-Century America*. Chapel Hill, NC: The University of North Carolina Press, 2012.
- Goodwyn, Lawrence. *The Populist Movement: A Short History of the Agrarian Revolt in America*. New York: Oxford University Press, 1978.
- Frost, Jennifer. *Hedda Hopper's Hollywood: Celebrity Gossip and American Conservatism*. New York: NYU Press, 2011.
- Herron, John P. *Science and the Social Good: Nature, Culture, and Community, 1865-1965*. New York: Oxford University Press, 2009.
- Jacobson, Matthew Frye. *Whiteness of a Different Color: European Immigrants and the Alchemy of Race*. Cambridge: Harvard University Press, 1999.
- Junod, Susan White. "Food Standards in the United States: The Case of the Peanut Butter and Jelly Sandwich." In *Food, Science, Policy and Regulation in the Twentieth Century*, edited by David F. Smith and Jim Phillips, 167-188. New York: Routledge, 2000.
- Keuchel, Edward F. "Chemicals and Meat: The Embalmed Beef Scandal of the Spanish-American War" *Bulletin of the History of Medicine* 48 no. 2 (Summer 1974): 249-264.
- Kolko, Gabriel. *The Triumph of Conservatism: A Reinterpretation of American History, 1900-1915*. New York: Glencoe, 1963.
- Kraut, Alan M. *Silent Travelers: Germs, Genes, and the Immigrant Menace*. Maryland: The Johns Hopkins University Press, 1995.
- Laird, Pamela Walker. *Advertising Progress: American Business and the Rise of Consumer Marketing*. Baltimore: The Johns Hopkins University Press, 1998.
- Lears, Jackson. *Fables of Abundance: A Cultural History of Advertising in America*. New York: Basic Books, 1994.
- . *Rebirth of a Nation: The Making of Modern America, 1877-1920*. New York: Harper Collins, 2009.
- . *No Place of Grace: Antimodernism and the Transformation of American Culture*. Chicago: The University of Chicago Press, 1994.
- Leuchtenberg, William. *The Perils of Prosperity, 1914-1932*. Chicago: The University of Chicago Press, 1993.

- Levenstein, Harvey. *Fear of Food: A History of Why We Worry About What We Eat*. Chicago: The University of Chicago Press, 2012.
- . *Paradox of Plenty: A Social History of Eating in Modern America*. Oxford: Oxford University Press, 1993.
- . *Revolutions at the Table: The Transformation of the American Diet*. New York: Oxford University Press, 1988.
- May, Earl Chapin. *The Canning Clan: A Pageant of Pioneering Americans*. New York: The Macmillan Company, 1937.
- Miller, Arthur I. *Einstein and Picasso: Space, Time and the Beauty that Causes Havoc*. New York: Basic Books, 2002.
- Murray, Janet and Ennis Blake. *What Do We Eat? Food: The Yearbook of Agriculture, 1959*, Washington, D. C.: Government Printing Office, 1959.
- Norris, James D. *Advertising and the Transformation of American Society, 1865-1920*. New York: Praeger, 1990.
- Parkin, Katherine J. *Food is Love: Advertising and Gender Roles in Modern America*. Philadelphia: University of Pennsylvania Press, 2006,
- Petrick, Gabriella M. "The Arbiters of Taste: Producers, Consumers and the Industrialization of Taste in America, 1900-1960." PhD. diss., University of Delaware, 2006.
- Roediger, David. *Working Towards Whiteness: How America's Immigrants Became White; The Strange Journey from Ellis Island to the Suburbs*. New York: Basic Books, 2006.
- Rutherford, Janice Williams. *Selling Mrs. Consumer: Christine Frederick and the Rise of Household Efficiency*. Athens, GA: University of Georgia Press, 2003.
- Shapiro, Laura. *Perfection Salad: Women and Cooking at the Turn of the Century*. New York: The Modern Library, 2001.
- Stage, Sarah and Virginia B. Vincenti, editors. *Rethinking Home Economics: Women and the History of a Profession*. Ithaca, NY: Cornell University Press, 1997.
- Strasser, Susan. *Satisfaction Guaranteed: The Making of the American Mass Market*. New York: Pantheon Books, 1989.
- Taylor, Judith. *The Olive in California: History of an Immigrant Tree*. Berkeley: 10 Speed Press, 2000.

- Tomes, Nancy. *The Gospel of Germs: Men, Women, and the Microbe in American Life*. Cambridge: Harvard University Press, 1998.
- U.S. Bureau of the Census. *Statistical Abstracts of the United States 1971*. (92nd Annual Edition.) Washington, D.C., 1971.
- Vileisis, Ann. *Kitchen Literacy: How We Lost Knowledge of Where Food Comes From and Why We Need to Get it Back*. Washington, DC: Island Press, 2008.
- Wheeler, Marjorie Spruill. *One Woman, One Vote: Rediscovering the Women's Suffrage Movement*. Troutdale, OR: NewSage Press, 1995.
- Wiebe, Robert H. *The Search for Order: 1877-1920*. New York: Hill and Wang, 1967.
- Wood, Sharon E. *The Freedom of the Streets: Work, Citizenship, and Sexuality in a Gilded Age City*. Chapel Hill, NC: The University of North Carolina Press, 2005.
- Young, James Harvey. *Pure Food: Securing the Federal Food and Drugs Act of 1906*. Princeton: Princeton University Press, 1989.
- Ziegelman, Jane. 97 Orchard: An Edible History of Five Immigrant Families in One New York Tenement. New York: HarperCollins, 2010, 22-23
- Zunz, Oliver. *Making America Corporate, 1870-1920*. Chicago: The University of Chicago Press, 1990.

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