Public Health Then and Now

Industry Invites Regulation: The Passage of the Pure Food and Drug Act of 1906

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Abstract: Ending its 27-year stranglehold on proposals for federal pure food and drug legislation, Congress passed the Pure Food and Drug Act and its companion bill, the Meat Inspection Act, on June 30, 1906. An unprecedented convergence of consumer, scientific, and industrial support in 1906 prompted such action; most industries even planned for it, hoping regulation would restore the competitiveness of their products on weak foreign and domestic markets. The ways in which these interests converged, and the reasons therefor, suggest a change in their relationships to each other and with the federal government as America headed into the twentieth century. (*Am J Public Health* 1985; 75:18–26.)

Introduction

The 1906 Pure Food and Drug Act exemplifies the federal government's shift from distributive to regulatory policy at the turn of the century.[1] Progressives would add that the Act was the triumph of muckraking journalism[2,3] revisionists, the triumph of industries.[4–7] But none of these theories adequately explains why Congress reversed its 27-year history of obstructing proposals for federal food and drug regulation[8] and passed the Act in 1906.

Traditional explanations for the sudden passage of the Act have ignored changes in attitudes within the food, beverage, and drug industries about federal regulation during the last quarter of the nineteenth century. They often assume that the Act and the Meat Inspection Amendment of 1906 that Congress passed simultaneously share the same rationale,[2,4,9–11] unanticipated Congressional reaction to sudden exposure of industrial misconduct in the years immediately preceding enactment. Eloquent exposès of industrial horrors and paternalistic tendencies of the federal government could not force a Congress dominated by special interests to enact laws that those interests did not want. Yet, even if one concedes that the industry supported regulation, an explanation attributing regulatory reforms only to the efforts of industry fails to reconcile the delay in passing the Act until industry had prepared financially for its impact. If Congress passed the Act then only after aroused public opinion joined with commercial self-interest, as Morton Keller argues,[4] questions remain as to what and how the two forces joined.

The present article argues that the emergence of an articulate consumer consensus, directed by science, made the food, beverage, and drug industries not only seek, but also plan for, federal legislation that regulated their industries.

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Early Statutes

The 1906 Act was the first federal law to address simultaneously product adulteration, production, distribution, and marketing of food, beverages, and drugs for import and export.[12] It ended piecemeal regulation,* superseded disparate state standards, and forged a new relationship between federal and state authority.[12] It defined products subject to regulation very comprehensively and defined very broadly acts of misconduct such as product adulteration.

By passing the Act, Congress reversed its 27-year history of obstructing proposals for such legislation regulating the quality of food, beverages, and drugs. Over 200 proposals for comprehensive legislation on food and drugs had appeared in Congress between 1879 and 1906.[16] For each proposal for food and drug regulation that Congress considered during that period, "[t]here seemed to be an understanding between the two houses that when one passed a bill for the repression of food adulteration, the other would see to it that it suffered a lingering death."[10]

Despite the drastic changes in regulatory structure that the 1906 Act imposed and its tradition of suppressing such legislation, Congress took only a short time to enact the Act. On December 5, 1905, Theodore Roosevelt recommended the Congress pass legislation addressing adulteration in the food, beverage, and drug industries.[17] The Senate introduced and passed a bill on February 21, 1906 by a vote of 63 to 4[9,18]; the House passed a substitute bill four months later, on June 23, 1906, by a vote of 241 to 17.[19] Congress produced

*Regulatory law on food, beverages, and drugs was piecemeal.[13] Early laws regulating drugs and other medicinal products included: a state law that the New York College of Pharmacy used in 1831 to regulate or supervise the importation of drugs from other countries; and an 1848 federal law provided for the examination of drugs, medicines, and other medicinal preparations, a law used primarily "to prevent the importation of adulterated and spurious drugs and medicines."[8]

Early food laws included: federal laws passed in 1850 and 1883 regulating importation of tea; local legislation in the 1850s advocated and secured by city boards of health for regulating the quality and sale of milk and meat; an 1884 federal law taxing, and regulating the manufacture and sale of and the importing and exporting of oleomargarine; an 1888 federal law to prevent the sale of adulterated foods in Washington, DC, and a bill prohibiting adulterated meat; the federal Filled Cheese Act of 1896 imposing a tax on all imitation cheese and regulating its sale, manufacture, importing, and exporting; an 1899 federal law Mixed Flour Act similar to the Filled Cheese Act; and a federal law in 1899 providing for inspection of all foods imported into the United States.[14,15]

a compromise bill in only six days.[9,10] On June 30, 1906, the President signed the Act that went into effect on January 1, 1907.[9,11] On the same day, he signed the Meat Inspection Act which the House had introduced on May 25 and passed without roll call on June 19 and to which the Senate simply concurred.[9]

Industry Plans for Changing Markets

In the 1880s, food, beverage, and drug industries had begun to plan rationally for greater sales; from 1880 to 1900, large and small establishments changed their production and marketing scale and their administrative methods. As the United States grew between 1880 and 1900 and its population moved westward or migrated into cities, new markets arose. These migrations changed the range and intensity of demand for food, beverages, and drugs. Because local producers could only partially supply the demands of these new markets, larger producers had opportunities to increase the scale of their trade.

At the same time, technological innovations had created expanded railroad service, offering the industries increased access to markets and the ability to transport perishables and other types of goods greater distances. In the 1880s, for example, meatpackers began to rent refrigerator cars to transport meat beyond the customary markets. Construction of ice plants in the South meant that producers no longer needed to confine their fruit, vegetables, and other perishables to natural ice belts.[20,21] Even Western producers, once limited to these ice belts, moved their perishables beyond local markets.[22,23] By 1890, the ability to substitute mechanical refrigeration for natural ice further freed the industries from the climate limitations that reliance on natural ice imposed on transport.[24]

"There seemed to be an understanding between the two houses that when one passed a bill for the repression of food adulteration, the other would see to it that it suffered a lingering death."—Harvey W. Wiley

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Technological innovations not only helped the industries satisfy new market demands but also enabled them to begin to control the supply of their products. Refrigerator cars extended the period of time during which harvested fruits and vegetables, slaughtered meat, and other perishables were available. New markets for fresh goods arose at different times and encouraged expansion of production in fresh as well as prepared goods. Cold storage warehouses permitted the industries to manipulate product flow.[20,21,25]

Companies used the new distribution strategies to reach the new markets and to create new ones. From 1879 on, the distribution sectors grew faster than the production sectors. The number of employees involved in packaging, labeling, and transporting food, beverages, and drugs increased.[26]

Expanding distribution to pursue new markets, however, was expensive. Competition intensified, driving down prices and resulting in low profit margins.[20,21,26] National competitors, transporting their goods along the same routes, saw their products converge at market centers. The ability of local competitors to produce and distribute their goods more cheaply added to the pressures on the new national companies to lower their prices on competing goods. Lacking centralized administrations capable of coordinating developments in the market centers prevented larger industries from controlling demand.

Renting railroad cars also added indirect costs for which the industries had to adjust. Because producers could not predict crop failure or harvest size, they risked incurring the expense of rented cars left unused or of additional cars acquired at the last minute at premium.[27] Renting also put them at the mercy of the railroad companies' decisions about destinations, schedules, and locations for de-icing stations. Delayed transport and an inability to reach unsaturated markets also increased costs. Infrequent inspection of the cars impaired the industries' ability to monitor quality and to prevent losing product to spoilage.[23,26]

Planning rationally to reduce these expenses and meet the new market demands simultaneously led many industries to centralize. Managerial policies tightened, pursuing efficiency in production and distribution and consistency in marketing practices. The large companies often bought out their local competitors, turning them into production or distribution centers for a larger operation. The companies also began to centralize their administrations, coordinating production and distribution. Consolidations, such as that which formed the American Glucose Sugar Refining Company, occurred frequently. Many industries formed national trusts.[20,21,24,28–32]

In addition, companies created private railroad car lines which helped to reduce and to offset the immediate costs of distribution. Private car lines "commanded the entrance [to] and the outlook over the markets of the country."[21] Owning one's own railroad cars did not eliminate the problems of products converging at market centers since the private cars still traveled the same lines as the public cars. However, it did give the industries control over de-icing, inspection, scheduling, and destinations, enabling them to tailor their distributive services to their needs. Ownership also offered the food and drug companies supplementary sources of income that compensated for the low profit margins of the food, beverage, and drug products. Some enterprises rented cars to smaller businesses; rebate plans, flexible scheduling, versatile routes, and opportunities for quality control made private, rather than public, car lines more attractive.

Centralization freed the industries to turn to new strategies to increase sales. Some producers and distributors added new product lines as early as the 1890s.[20,21,27,31] Others encouraged sales with the discounts made possible by the cost-efficiencies gained through centralization. The drug industry, for example, encouraged wholesale trade by holding down the prices to retailers.[32,33] Industries also began to standardize products and prices. The drug industry, for example, produced two such product and price guides, the United States Pharmacopeia and the National Formulary.[32]

Market Changes and Resistance

Between 1890 and 1902, domestic and foreign markets for American food, beverages, and drugs changed radically. Federal trade legislation, economic crises, inconsistent state product standards, urbanization of consumers, and scientific investigations of product quality and business practices disrupted domestic markets. Foreign competitors increased their sales in this country and devalued American imports; decreasing foreign markets for American food, beverages,

and drugs intensified the competition in American markets. Moreover, federal legislation after 1890 challenged the security of the industries' domestic markets. In 1898, for example, the federal government levied a tax on domestic barreled beer; brewers shifted to bottling.[25] Although the government's reduction of the tax in 1901 left brewers with a new product line that could supplement barreling, the change in the federal tax policy had cost the brewing industry.

During this period, federal legislation also helped to restore small local food, beverage, and drug producers' ability to compete with the national companies. Anti-rebate and anti-trust legislation weakened the strategies that had helped to create and maintain the hegemony of the large scale producers and distributors. The legislation was aimed at the larger companies, and challenged the commercial advantages implicit in centralized, comprehensive administrations. Expansion of railroads and the decline in freight charges[26] decreased distribution costs, making opportunities for expanded distribution more accessible to the smaller enterprises that neither owned nor rented private car lines.[34]

Inconsistencies in applicable state laws made operating on a national scale increasingly difficult; different production techniques necessary to conform to the disparate standards that the laws proscribed meant greater costs and minimized the cost-efficiencies that large, national operations offered. A national company could produce a product that would sell in one state but not in a neighboring state; to continue to operate nationally it would have to produce multiple versions of a product, tailored to different state standards. It could load a truck or railroad car with its goods for economy in distribution, but had to limit the destination, again reducing the practicality of national distribution strategies.

Beginning in the 1880s, litigation increased over the constitutionality of state laws regulating production and distribution of certain food products. Courts initially upheld state laws as constitutional exercises of the state's police power to protect the public health of its citizens. But the decisions expressed some doubts about the state's ability to regulate products in interstate commerce. In the leading cases of *Powell v. Pennsylvania*,[35] *Plumley v. Massachusetts*,[36] and *Crossman v. Lurman*,[37] the United States Supreme Court upheld state laws forbidding the sale of oleomargarine. By 1897 over 90 per cent of state legislation rested on this police power doctrine. But the *Powell* court had also pointed out that state legislation regulating the quality of food and drugs could not be justified under the state's police power to protect its citizens' health unless the state legislature made an actual finding that a particular product harmed the public health. Although it had refused to rule on the wisdom of such laws and their alleged oppression of manufacturers, asserting that that was a subject more appropriate for the legislature,[35] the court pointed out the vulnerability of state regulatory laws to constitutional challenges when those laws conflicted with Congress' power to regulate interstate commerce. *Plumley* and *Crossman* helped to define the limits of state powers; they held that state laws could exclude certain items from sale within the state without constituting a regulation of commerce and indicated how some state legislation restricting certain food, beverage, and drug products from manufacture or sale within a state might overstep the constitutional boundaries of powers reserved for the federal government.[38] In a paper read to the American Bar Association in 1888 discussing Congressional power over interstate commerce, the Honorable Randolph Tucker added to the legal community's perceptions of the limits of that regulatory power and the need for federal legislation on interstate commerce, stating that "The state cannot obstruct the 'transitus,' " for that is commerce; but it may legislate on the thing or person when transitus being ended remains within its borders.[38] Furthermore, state laws conflicted increasingly with each other and with federal laws; state police powers "strain[ed] from an imbalance in the national economy and state regulation."[4]

During this period, increasing numbers of urban consumers changed the profile of domestic markets' receptivity to American food, beverages, and drugs. Urbanization eroded consumers' traditional methods of identifying quality food, beverage, and drug products. Previously, consumers patronized small groceries and stores "in the same way that J. P. Morgan loaned money, by banking on character."[9] New city residents lost that security when they moved to the city. Urban retailers had little incentive to establish personal relationships with transients or with large numbers of customers.[9,39–41]

To distinguish quality products, literate urban consumers turned to periodicals for guidance. Journal articles instructed readers on how to act, how to consume, and how to choose.[42,43] Authors assumed the role of investigators; the journals assumed that readers would follow the advice of those who conducted the investigations that the readers could not conduct.[44] Such authorizations extended to the products that the journals advertised.

Advertising of foods, beverages, and drug products had played on the emotional needs of the new urban Americans;[45] the industries sought to instill the trust that would sell products. Marketing and advertising strategies sought to suggest, if not certify, product quality.[46] Trademarks such as the Campbell Soup Kids, Carnation's Contented Cows, and the Quaker Oats Man projected product wholesomeness. Aunt Jemima, Lydia Pinkham, and Mrs. Winslow personified a relative or neighbor, thus appealing to nostalgia for the trust one might place in such familiar people. Producers of medicinal products sought to identify their goods with the imprimatur of medical science. It was common practice for industries to try to associate their products with physicians—whether real or fictitious. For example, Listerine suggested Dr. Lister, but many other medicinal products sold with the implied endorsement of personalities such as Dr. Yellowstone.[2] Food products appealed to consumer nostalgia for the country, often alluding to the "naturalness" of the ingredients of their products, or of the products themselves.

The trusted journals that influenced consumer choices, however, now began to inform consumers of how the industries abused their confidence. Litigation over the constitutionality of state laws governing product quality, such as the laws governing oleomargarine, exposed consumers to the issues of product adulteration. Scientific investigations, conducted by the Bureau of Chemistry, precursor to the US Department of Agriculture, were reported in the Bureau's publications and also received press attention. Between 1887 and 1893, the Bureau published sections of the first comprehensive report of product adulteration, revealing either the presence of additives and dilutants or the absence of ingredients. Findings included watered down milk; charcoal mixed with pepper; seeds in ground spices; beer without barley; low percentages of grape juice in domestic wines; cottonseed oil in lard; bleaching agents, chemicals, and dye in molasses; chicory, acorns, and seeds in coffee; and acids and metallic

Lydia Pinkham's nostrum, laced with alcohol, was marketed nationwide as a panacea for female problems. This ad featured healthy children.

salts in canned vegetables. Initially, the chemists reported such products as beer, oleomargarine, and coffee as safe for consumption since they contained only natural ingredients, but fraudulently labeled. The reports generally refused to judge the healthfulness of the products' additives, delegating that responsibility to health officials, physiologists, and other scientists.[14,16,20,47] In 1880, Harvey Wiley, Chief Chemist of the Department of Agriculture, reported results of the analyses of food, beverages, and drugs without determining their impact on the public health. In 1890, Wiley summarized his results in terms of consumer fraud. Even the First Annual Food and Drug Congress, convened in 1898, met to discuss the presence, but not the effects, of additives in adulterated products.[2]

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By the turn of the century, however, scientists found a connection between adulterants and poor health, and began publishing their findings. In 1902, Wiley succeeded in capturing public attention and journal coverage when he focused

Mrs. Winslow's soothing syrup contained morphine, although not so labeled. This scene of a mother in bed with her children was featured on a calendar in 1886.

his experiments on the connection between the contents of the food and beverages that he tested and the health of those who consumed them. In his series of "Poison Squad" experiments,[10,16] Wiley told readers that adulterated food made consumers weak, sick, and "unattractive". Popular songs and periodical coverage about the experiments helped spread the message.[47] Under Wiley's guidance in 1902, the food laboratory of the Bureau of Chemistry began to analyze the influence of preservatives on human nutrition; in 1903, the drug laboratory initiated similar analyses of proprietary medicines, plant drugs, chemicals, and any drugs shipped by mail.[2,25,47]

After the turn of the century, popular periodicals that had helped urban consumers to survive in the cities intensified their educational efforts about product adulteration. Journals discussed product abuses in terms of industrial misconduct in keeping with the contemporary distrust of big business, exposing fraud in the patent medicine industry, adulteration in the food industry, and poisons in the liquor industry.** *Collier's* published the results of the American Medical Association, Council of Pharmacy and Chemistry's analysis of the ingredients in, and the promotion of, proprietary medicines.[58] Publishers refused to print advertisements of adulterated products. Potential for profit and protection from libel suits inspired more extensive investigations and more journal coverage. While muckraking helped sell magazines and newspapers, publishers feared suits if allegations proved false. Publishers therefore authorized investigations and published the results of the research. The publishers of *The Jungle,* by Upton Sinclair, for example, on the advice of their attorneys, sent investigators to verify the allegations made in the manuscript before publishing the book; they published the results in the magazine that they owned, *World's Work.*[9] Sales were high.

By 1906, consumers had extensive evidence of product adulteration and industrial fraud.[59–62] In 1906, reports esti-

**Articles by Mark Sullivan, a New York attorney,[48] and by Edward Bok in the *Ladies Home Journal*[49] educated consumers about the fight against patent medicines. "The *Journal*'s random attacks on nostrums turned into a vigorous campaign in 1904."[2] *Collier's* published a series of articles between November 1905 and February 1906 attacking the patent medicine industry.[50–55] In April 1906, the *Ladies Home Journal* summarized the President's views on patent medicines.[56] *Everybody's* published a series of articles by Charles Edward Russell attacking the food industry.[57] Meanwhile, the federal government accused 28 brewing companies of product adulteration.[25]

mated that approximately $3 billion worth of adulterated and misbranded articles went into commerce every year—"a sum sufficient to pay the entire expenses of the civil war," or "to pay the national debt three times over."[63] In 1906, one Senator noted that 15 to 30 per cent "in value of all the food products in the United States were either adulterated or misbranded."[63] Statistical surveys of food examinations and prosecutions under state laws in 1905 indicated that in some states as much as 56 per cent of the food samples examined were below standard; most of the prosecutions for lapses in standards succeeded. But those figures address only those for samples of suspected foods and provide no ratio of all adulterated foods on the domestic market. Potted turkey had no turkey in it; potted chicken, no chicken. Cottonseed oil was sold as olive oil, in whole or in part. Rectified whiskey often contained little whiskey and much artificial coloring. Alcohol could be found in candy and in patent medicines. Nostrums often contained narcotic or addictive drugs such as cocaine, opium, and morphine and were not labeled as such. These medicines, such as Grandma's Secret and Nurses' and Mothers' Treasures, were recommended for soothing children, but often proved fatal. As the Congressional Record noted, " 'Grandma's Secret is another child soother. It killed the young son of Mr. and Mrs. Nankivell of Shamokin, Pennsylvania." Preservatives deleterious to health pervaded. Reports and testimonials of the deleterious effects of many products filled the Congressional Record.[62]

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Once science had linked the industries' deceptive practices to increased health risks, Congress took a more active role in the pure food and drug movement. In 1899, Congress began hearings on the subject of pure food; by 1902 congressional committee hearings in both houses included testimony on adulteration, misbranding, and fraud in food, beverages, and drugs.[10,16,59,62,63] Congress acknowledged that the abuses actually threatened public health. As Senator Porter J. McCumber announced to the Senate on January 23, 1906:

> "We are coming more and more to understand that our health depends more upon the character of food we consume than upon the medicines that are given to allay and destroy disease. We are coming more and more to understand that a proper diet varied to meet the conditions of each individual is not only the greatest panacea for but also the greatest preventitive [sic] against the evils with which humanity seems to be afflicted."[64]

The public's discovery that business corrupted politics reinforced its discovery that business sold adulterated products at increasing prices, eroding the consumer trust to which the advertising by industries had appealed. During the 1870s, people had begun to realize that business interests dominated politics.[1] But the large scale industrialization of the 1890s revealed businesses seeking ways to protect their special needs, and "the unorganized public's dawning sense of vulnerability, unease, and anger in the face of the economic changes wrought by big corporations."[4]

The press reported the adulteration of Congressional politics just as it had reported product adulteration. Articles attacked Congress for inaction on proposals for legislation that addressed product adulteration. In "The Senate of Special Interests," the author alleged that special interests, i.e., the industries, owned the opponents of pure food legislation.[65] "The Senate Plot against Pure Food" directed the public to go after the special interests' stranglehold on the pure food and drug bills before Congress.[66]

Late nineteenth century politics, transformed in orientation from party to issue affiliation, saw the number of voters increase massively and people beginning to use political processes to address their concerns.[1] The 1890s had witnessed the growth of "a new, better informed, less parochial, political public,"[4] and the public that reacted to food and drug issues during the period epitomized that transition. "The state of warfare," as one legal commentator wrote in the *American Law Reporter* in 1899, "between producers and consumers required political rather than judicial solutions."[67] With courts refusing to pass judgment (because of their constitutionally proscribed boundaries) on the adequacy or oppressiveness of food and drug laws, consumers took the issue to the legislature. Readers of the *Ladies Home Journal* responded to such articles as "The Great American Fraud" with letter writing campaigns that some historians have credited with bringing the issues of product adulteration and industrial fraud to the attention of President Roosevelt. Many of the writers were women. The Pure Food Committee of the General Federation of Women's Clubs petitioned and wrote letters to the President, the Secretary of Agriculture, and members of Congress.[2,16,44,68,69]

Letter writing campaigns brought the issues of product adulteration and industrial fraud to the attention of the President and Congress.

The competitiveness of foreign food and beverage products in American markets greatly increased during the last quarter of the nineteenth century, threatening product saturation in domestic markets. Foreign legislation required foreign food and beverage exports to meet standards of product quality and inspection. England had enacted a national pure food and drug law in 1875; Germany and other countries followed with similar legislation shortly thereafter.[14,20,70] Compared to those countries' products, unregulated American goods seemed even more unattractive.

In addition, some foreign competitors had developed bases in the United States for production and distribution, enabling them to make their prices competitive. In the 1880s, Germany, France, and England subsidized their own brewing companies within the United States.[21] American tariff legislation between 1894 and 1897 helped to lower the prices of foreign products to domestic consumers. The 1894 tariff, for example, assisted the domestic sugar refining and liquor industries, but challenged the positions of domestic vegetables, fruit, meat, drugs, and some of the beverage industries. Although revisions of the tariff legislation in 1897 increased duties to protect domestic industries, the President's ability to reduce the duties continued to threaten the domestic coffee, tea, wine, and brandy industries.[71,72]

At the same time, legislation governing inspection of and standards for food, beverages, and drugs in other

countries implicitly discredited the unregulated American imports. Some foreign countries even explicitly rejected American products. During the American pork crisis between 1879 and 1891, for example, European countries boycotted American pork products. Even after most countries resumed trade with American pork producers, Germany held out; its self-proclaimed superior methods of analyzing pork products undermined meat sales in Germany until the analytical methods themselves were discredited.[73]

Product Regulation and Quality Certification Strategies

As early as the 1880s, most domestic food, beverage, and drug industries had recognized the need for product certification to increase the competitiveness of their products.[4] Initially, in the 1890s, some industries proposed their own supervisory and investigative teams in lieu of those of the federal government, hoping to use the authority of science to validate the quality of their products. When the federal government alleged adulteration in the beer, drug, and other industries, these industries claimed that the government, as a non-specialist, did not understand their production techniques. They proposed that a team of specialists from within the industries supervise and investigate production. Some industries encouraged inspections by city and state boards of health and by journalists, secure that their claims to expertise would shield them.[2,21,25,47] Other industries attempted different types of self-regulation. The patent medicine industry, for example, talked of policy changes, calling for an end to narcotics in nostrums, reduction of alcohol content in products, and elimination of fraudulent advertising.[2]

When these early efforts failed to improve domestic and foreign markets in the 1890s, industries began to express the need for federal legislation that would regulate and certify product quality. The choice of federal regulation was not surprising; by the end of the nineteenth century federal legislation regulating industries was an attractive rational solution to market problems. The success of foreign products whose quality was certified by foreign laws offered an example to American industries of the way in which regulation encouraged sales.

Moreover, industries had commonly resorted to politics and legislation to solve market problems. Food, beverage, and drug industries already had experience in turning to the federal government for legislation to ameliorate problems in the marketplace. Between 1848 and 1899 Congress enacted laws that prevented foreign producers from dumping their products on American markets by requiring inspection and compliance with standards for exports, and imposing protective tariffs to chill the rate of imports. In response to the pork crisis, in what many regard as foreign diplomacy based on commerce, the industries compelled the Saratoga Agreement of 1891 to pressure Germany to remove its ban on American pork products and used teams of federal government scientists to discredit the analytical methods of inspection that discredited American pork.[73]

Changes in constitutional doctrine also influenced the industries' choice of federal over state legislation to certify product quality. After enactment of the Interstate Commerce Act in 1887, many state laws on commerce were seen to conflict with federal law.[4] Furthermore, experience had taught the industries that effective action must begin with a federal law that would supersede disparate laws and set uniform standards; the conflict of local standards within foreign countries with the national standards imposed by the Saratoga Agreement exemplified this problem.

Industries could see that laws regulating business during this period tended to encourage rather than to inhibit industrial development. Although antitrust legislation restricted trusts, for example, business evolved more efficient structures in response.[5,28,74] Regulation of railroads resulted in increased growth and prosperity among the railroad companies; from the 1870s on, railroads welcomed the intervention of the federal government.[75] Assurances of reasonable profits relaxed businessmen and encouraged their "reforming impulses";[5] "manufacturers and distributors hoped that mild regulation would destroy their marginal competition."[6]

The state organizations of the National Association of Food and Dairy Departments realized that they needed a national law. By 1898, major segments of those industries which a national law might affect had joined with state and federal officials in National Pure Food and Drug Congresses to draft mutually agreeable legislation.[2,9] Many manufacturers supported the pure food movement to the extent possible without "incurring too much animosity from others in the trade."[9]

Even other industries which had been less aggressive in pursuing federal regulation manifested their acceptance of awareness of the inevitability of federal legislation. Increasingly, the patent medicine companies inserted "red clauses" in their advertising contracts with periodical publishers. These clauses released the companies from their advertising contracts with periodical publishers in the event that federal legislation passed. Although the clauses pressured publishers indirectly to join the patent medicine companies in opposing federal regulation,[2] they also revealed the industry's perception that federal regulation was very likely to become a reality. By 1899, even the Proprietary Medicine Association assented that some sort of bill should be agreed on; by 1905, in a secret meeting, the Proprietary Medicine Association urged the committee on legislation to work for a law that would exercise restraints on narcotics in nostrums, alcohol in patent medicines, and fraud in advertising.[2]

Industry—needing time for substandard "product dumping"—forestalled legislation until they were ready "to accommodate federal regulation."

Having reached a consensus about the need for legislation, industries prepared for enactment of the federal law by anticipating the initial financial impact that the legislation would have on them. Many industries needed to sell off their goods that would be unmarketable under the new standards to be imposed by a federal law, and therefore worked to delay passage of an act until after such time as markets for product dumping were discovered and used. Industries' control over the scheduling of enactment until they prepared adequately explains the lapse in time between consensus for federal regulation and enactment of a federal law, and subsequently between enactment and the effective date of the legislation.

Between 1902 and 1906, domestic producers of food, beverages, and drugs vigorously dumped their goods on foreign markets. As the likelihood and the desirability of

federal legislation increased, domestic industries began testing for receptive repeat markets by dumping strategically on countries that had very low product standards or none at all. Producers dumped their products in alternate years. Drug industries, particularly patent or proprietary medicines, dumped heavily in 1902; food and beverage industries dumped mostly in 1903. Industries that dumped their goods in 1902–03 did not do so again until 1905–06; those that started dumping later in 1903–04 repeated in 1906–07.[76–79] This staggered pattern may reflect coordinated efforts to disguise the practice.

By 1905–06, most industries, having perceived the need for regulation and having prepared for its impact, were finally ready to accommodate to federal regulation; they signaled Congress to act. Political resistance to the Act dissolved. Although evidence of explicit directions to members of Congress from industry representatives exceeds the scope of this article, evidence exists that industries released traditional political controls on, and no longer used their opportunities to block, passage of the legislation. In a Senate governed by special interests,[7,65,66,80–89] the absence of significant opposition to such legislation by 1906 strongly suggests that those interests supported the legislation. On February 21, 1906, the Senate leader announced that he would hear the bill; it passed that day by a vote of 64 to 4.[18] In the House, it passed 241 to 17. In both houses, many chose to answer "not voting" or "present" rather than vote against the Act; 22 in the Senate and 112 in the House answered "not-voting" and nine in the House answered "present".

Although traditional voting blocks had already begun to split during this period, and issue rather than party politics governed voting patterns,[90] the Democrats' failure to oppose the Act to any significant extent suggests the breadth of support that pure food and drug legislation had acquired. More Republicans than Democrats voted for the Act but Republicans were in the majority in Congress at the time. As Table 1 indicates, representatives of both large urban industrial centers[92,93] and smaller communities supported the Act. Support from industrial centers where urban consumers predominated does not necessarily indicate that the interests of the consumers won out; more accurately it suggests that the industries chose not to exercise their political opportunities to block the legislation and aligned with consumers in advocating legislation. Somewhat less support in communities of less than 25,000 inhabitants may indicate that residents of these communities needed such legislation less than those in the large, growing cities.

Representatives of the southern states, whose cottonseed oil and rectified whiskey production the Act would restrict from marketing, opposed the Act. Many were Democrats, but they opposed the Act on grounds other than party differences. In the Senate, opponents claimed that the states retained authority over commerce within their borders, even if the goods were in interstate commerce.[94] Opponents in the House argued that the federal government lacked the authority to regulate manufacture.[95] Yet recent federal legislation and Supreme Court decisions had already proved these arguments false. The Interstate Commerce Act and the Sherman Antitrust Act had given the federal government the authority to regulate not only items that traveled in interstate commerce but also the business practices of the industries that produced such items. It is more likely that the southern states opposed the Act because it threatened to destroy their leading industries which—unlike other industries—could not dump their products one year, change production techniques, and continue with only slight modifications. They could neither rationalize their markets with legislation nor make regulation an integral part of their planning.

Meat Inspection Amendment Repeats Pattern

Some historians have argued that the momentum for the Meat Inspection Act of 1906 carried the Pure Food and Drug Act and insured its passage.[9,11] But the pattern of industry support of the legislation undermines that argument and indicates that the reverse is more likely. The momentum for the Meat Inspection Act is yet another example of the effort to rationalize markets that characterized the food, beverage, and drug industries as a whole. Meat inspection had become a political issue that demanded redress in 1906, if only to keep the President from releasing the results of a federal commission's investigation of the American meat-packing industries. But Congress could have proposed and passed a

TABLE 1—Votes of Congressional Representatives on the Pure Food and Drug Act by Size of Place Represented*

Size of Place**	Total Number	Republicans				Democrats				Combined		
		Total	Y	N	NV	Total	Y	N	NV	Y	N	NV
500,000+	33	20	15	0	5	13	6	1	6	21	1	11
499,999–250,000	14	11	10	0	1	3	2	0	1	12	0	2
249,999–100,000	28	21	16	0	5	7	4	1	2	20	1	7
99,999–50,000	20	16	9	0	7	4	2	0	2	11	0	9
49,999–25,000	32	26	21	0	5	6	4	1	1	25	1	6
24,999–10,000	47	35	24	0	11	12	4	3	5	28	3	16
9,999–0	205	116	81	0	35	89	43	11	35	124	11	70
Total**	379	245	176	0	69	134	65	17	52	241	17	121

*SOURCE: References 19, 91, 92 and 93. In 1906, 379 Congressional Representatives responded to the roll call for voting on the Act. This Table omits mention of three representatives who did not vote: Representative Lester, a Democrat from Georgia who died before the roll call and whose successor had not commenced office; Representative Williamson of Oregon, a Republican who never qualified for representation; and Speaker of the House Cannon, a Republican of Illinois.

**Place is defined as where the Congress member represents according to the Congressional Directory. If the Congress member represents a large city and several wards or counties, this Table represents the largest city that this Congress member represents. For purposes of this Table, New York City, Manhattan, Brooklyn, and the Bronx have separate population figures. SOURCE: References 91, 92 and 93.

NOTE: Y = Yea; N = Nay; NV = Not voting (see text).

Meat Inspection Act and omitted a Pure Food and Drug Act had the latter been as undesirable and as controversial as traditional histories assumed.

The history of the Meat Inspection Act virtually repeats the pattern that emerged in the food, beverage, and drug industries during the last quarter of the nineteenth century. American stock-raising and meat-packing industries grew rapidly after the Civil War, gaining both foreign and domestic markets. They also took advantage of technological innovations in refrigeration and transport to reach new markets. But by the 1880s, foreign and domestic markets had begun to resist sales.

European countries, feeling significant competition from the American packers, implemented protective measures for their own packers. "By 1881 . . . Great Britain, France, Greece, Turkey, Italy, Austria, and Germany had placed restrictions or outright prohibitions on American pork."[70]

To assuage troubled European markets, American hog-raisers and meat-packers backed federal legislation that provided for inspection of meat for export. This eased the European countries' restrictions, although Germany held out until the threat of an American duty on sugar encouraged them to remove the ban on pork under the Saratoga Agreement. The Bureau of Animal Industry organized its own investigating teams in the 1890s.[70]

Just as the initial attempts of the food, beverage, and drug industries had failed to restore product credibility, so did the efforts of the meat-packers at self-regulation. By 1891, local restrictions in Germany diminished the impact of the Saratoga Agreement; mandatory reinspection of the imported products added to the packers' costs. America sent its own investigators to Europe only to have them meet with increased resistance to their investigations that included discrediting the American scientists' analytic techniques and withholding data from them. By the time American scientists knew enough to discredit German microscopy as unreliable,[70] however, the domestic market was in chaos.

The momentum of the pure food and drug movement may have contributed to mobilizing public opinion against the practices in the meat-packing industry. Upton Sinclair wrote *The Jungle* as a novel, intending to motivate readers to support socialism rather than as a diatribe against the practices of the meat-packing industry; his account of the packers was fictional and took less than three pages in the whole book. Yet, as historians of the period note, although Sinclair "aimed at the hearts of the readers, he reached their stomachs."[2,9] A public, well-educated about abuses in the food, beverage, and drug industries, read the novel as evidence of abuse in the meat-packing industry, evidence entirely consistent with what they had learned about other industries. Press coverage on the meat-packing industry mixed reformist zeal with publishers' efforts to protect themselves from libel suits.

Domestic markets for American meat crumbled. Packers' efforts to restore product confidence failed in a short time. In the spring of 1906, meat sales fell sharply. As the food, beverage, and drug industries had done before them, packers attempted to restore product confidence with strategies that involved measures other than legislation. J. Ogden Armour wrote self-promotional pieces that the *Saturday Evening Post* published. When a well-known publicist, Elbert Hubbard, referred to *The Jungle* as an insult to intelligence, the packers circulated his statement in an effort to discredit the allegations in the book.[9] By late spring of 1906, however, the Neil-Reynolds Commission, appointed by the President to investigate the packing industry, completed its own investigation. Rumors circulated that the results would devastate the packing industries.

Just as the other industries had done, the packers turned to federal legislation to help them after failure of these initial efforts. Some packers believed that legislation would block publication of the Neil-Reynolds report and save foreign markets. Analyzing the federal meat inspection act in 1906 for J. P. Morgan, George Perkins repeated a rationale familiar to other industries. The Act, Perkins wrote, "would hurt the packers in the short run, but by providing a 'government certificate' in foreign trade, it would reward the packers handsomely."[9]

Swift enactment of the Meat Inspection Act suggests that the pure food and drug movement revealed to the meat-packing industry that federal regulation was the industrial strategy of choice, made necessary by science and consumer pressure, but one by which industries could ultimately benefit. No voting blocks mobilized to oppose the Act. On May 25, 1906, the House proposed a Meat Inspection Act and passed it on June 19. The Senate concurred in the House bill, and it was enacted the same day as the Pure Food and Drug Act, effective July 1, 1906, six months prior to the effective date of the latter Act. The date of enactment suggests that market conditions in the meat-packing industry had reached such emergency proportions that immediate remedial action in the form of regulation was needed. The Pure Food and Drug Act and its companion bill, the Meat Inspection Act, were both signed into law on June 30, 1906.

REFERENCES

1. McCormick RL: The discovery that business corrupts politics: a reappraisal of the origins of progressivism. Am Historicai Rev 1981; 86:247–274.
2. Young JH: The Toadstool Millionaires: A Social History of Patent Medicines in America before Regulation. Princeton: Princeton University Press, 1961; Princeton Paperback, 1974.
3. Reiger CC: The Era of the Muckrakers. Chapel Hill: University of North Carolina Press, 1932.
4. Keller M: Affairs of State: Public Life in Late Nineteenth Century America. Cambridge: Harvard University Press, 1972; Belknap Press, 1977.
5. Wiebe RH: Businessmen and Reform: A Study of the Progressive Movement. Cambridge: Harvard University Press, 1962; Chicago: Quadrangle Books, 1968.
6. Wiebe RH: The Search for Order, 1877–1920. New York: Hill and Wang, 1967.
7. Kolko G: The Triumph of Conservatism: A Reinterpretation of American History, 1900–1916. London: Free Press of Glencoe, Collier-MacMillan, 1963.
8. Sonnedecker G: Drug standards become official. *In:* Sonnedecker G (ed): The Early Years of Federal Food and Drug Control. Madison: American Institute of History of Pharmacy, 1982.
9. Sullivan M: Our Times: The United States 1900–1925. Vol. II: America Finding Herself. New York: Charles Scribner's Sons, 1927.
10. Wiley HW: An Autobiography. Indianapolis: Bobbs-Merrill, 1930.
11. Ihde AJ: Food controls under the 1906 act. *In:* Sonnedecker G (ed): The Early Years of Federal Food and Drug Control. Madison: American Institute of History of Pharmacy, 1982.
12. Pure Food and Drug Act of June 30, 1906, 34 Stat. 768, ch. 3915, Public Law 384.
13. Dunn CW: History of the United States' Food and Drug Law. Address to the New York Bar Association, n.p., October 1982.
14. Toulmin HA: A Treatise on the Law of Food, Drugs, and Cosmetics. Cincinnatti: W. H. Anderson, 1942.
15. Christopher TW, Dunn CW: Food Law Institute Series: Special Food and Drug Laws, Annotated. Chicago: Commerce Clearing House, 1954.
16. Wilson S: Food and Drug Regulation. Washington, DC: American Council on Public Affairs, 1942.
17. Roosevelt T: Message to the 59th Cong, 1st sess, December 5, 1905.
18. US Congress: House, Senate vote on Senate bill 88, 59th Cong, 1st sess. Congressional Record February 21, 1906; 40:2773.

19. US Congress: House, vote, 59th Cong, 1st sess. Congressional Record June 23, 1906; 40:9075–9076.
20. Clemen RA: The American Livestock and Meat Industry. New York: Ronald Press, 1923.
21. Cochran TC: The Pabst Brewing Company: The History of American Business. New York: New York University Press, 1948.
22. Singer C, Holmyard EJ, Hall AR, Williams T (eds): A History of Technology. Vol. 5: The Late Nineteenth Century c. 1850 to c. 1900. Oxford: Oxford University Press, 1958.
23. Anderson OE: A History of Refrigeration in the United States. PhD Dissertation, Harvard University, 1948.
24. Clark VS: History of Manufactures in the United States. Vol. III: 1893–1928. New York: McGraw Hill, 1929.
25. Baron S: Brewed in America: A History of Beer and Ale in the United States. Boston: Little Brown, 1962.
26. Barger H: Distribution's Place in the American Economy since 1869. Princeton: Princeton University Press, 1955.
27. Armour JO: The Packers, The Private Car Lines and the People. Philadelphia: H. Altemus, 1906.
28. Chandler AD: Strategy and Structure. Cambridge: MIT Press, 1962.
29. Chandler AD: The Visible Hand: The Managerial Revolution in American Business. Cambridge: Belknap Press, 1977.
30. Faulkner HU: Politics, Reform and Expansion, 1890–1900. New York: Harper and Row, 1968.
31. Swift LF (in collaboration with van Vlissingen A Jr): The Yankee of the Yards: Biography of Gustavius Francis Swift. Chicago: A. W. Shaw, 1927.
32. National Wholesale Druggists' Association: A History of the National Wholesale Druggists' Association. New York: The Association, 1924.
33. Haynes WN: American Chemical Industry. Vol. I: Background and Beginning. New York: D. Van Nostrand, 1943.
34. National Wholesale Druggists' Association: Proceeedings of the 31st Annual Meeting of the National Wholesale Druggists' Association. New York: The Association, 1905.
35. *Powell v. Pennsylvania,* 127 U.S. 678.687 (1887).
36. *Plumley v. Massachusetts,* 155 U.S. 461.
37. *Crossman v. Lurman,* 192 U.S. 472.
38. US Congress: House, 59th Cong, 1st sess. Congressional Record June 21, 1906; 40:8912–8913.
39. Boorstin D: The Americans: The Democratic Experience. New York: Random House, 1973.
40. Handlin O: The American People in the Twentieth Century. Cambridge: Harvard University Press, 1954; Rev Ed, Boston: Beacon Press, 1965.
41. Handlin O: The modern city as a field of historical study. *In:* Handlin O, Burchard J (eds): The Historian and the City. Cambridge: MIT Press, 1963.
42. Fox RW, Lear TJJ (eds): The Culture of Consumption: Critical Essays in American History 1880–1980. New York: Pantheon Books, 1980.
43. Mott FL: A History of American Magazines 1885–1905. Cambridge: Harvard University Press, Belknap Press, 1957.
44. Wilson CP: The rhetoric of consumption: mass market magazines and the demise of the gentle reader. *In:* Fox RW, Lear TJJ (eds): The Culture of Consumption: Critical Essays in American History, 1880–1980. New York: Pantheon Books, 1980.
45. Lear TJJ: From salvation to self-realization: advertising and the therapeutic roots of consumer culture, 1880–1930. *In:* Fox RW, Lear TJJ: The Culture of Consumption: Critical Essays in American History 1880–1980. New York: Pantheon Books, 1980.
46. Lambert IE: The Public Accepts. Albuquerque: University of New Mexico Press, 1941.
47. Anderson OE: The Health of a Nation: Harvey W. Wiley and the Fight for Pure Food. Chicago: University of Chicago Press, 1958.
48. Sullivan M: The patent medicine conspiracy against freedom of the press. Collier's 1905; 36:7.
49. Bok E: The patent medicine curse. Ladies Home J 1904.
50. Adams SH: The great American fraud. Collier's 1905; 36:14–29.
51. _____. Peruna and the "braces." Collier's 1905; 36:17–19.
52. _____. Liquozone. Collier's 1905; 36:20–21.
53. _____. The subtle poisons. Collier's 1905; 36:16–18.
54. _____. A fraud's gallery. Collier's 1906; 36:18–20.
55. _____. The fundamental fakes. Collier's 1906; 36:22–28.
56. Mr. Roosevelt's views on "patent medicines." Ladies Home J 1906; 23:21.
57. Russell CE: The Greatest Trust in the World. New York: Ridgeway Theyer, 1905.
58. Collier's 1905; 36:7.
59. Wiley HW: 1907 Report of the Bureau of Chemistry. *In:* Dunbar PB (ed): Food Law Institute Series, Federal Food Drug and Cosmetic Law 1907–1949. Chicago: Commerce Clearing House, 1951.
60. US Department of Agriculture, Bureau of Chemistry: Annual reports for the department year ended June 30, 1905. Washington, DC: Govt Printing Office, 1906.
61. US Congress: Senate, 59th Cong, 1st sess. Congressional Record January 23, 1906; 40:2649.
62. US Congress: House, 59th Cong, 1st sess. Congressional Record June 21–22, 1906; 40:8891–8909; 8975; 9026–9049.
63. US Congress: House, 59th Cong, 1st sess. Congressional Record January 23, 1906; 40:1415–1417.
64. US Congress: Senator McCumber speaking for the Pure Food and Drug Act, Senate bill 88, 59th Cong, 1st sess. Congressional Record January 23, 1906; 40:1415.
65. Needham HB: The senate of special interests: the story of the pure food bill in the United States senate. World's Work 1906; 2:7206–7211.
66. Lowry R: The senate plot against pure food. World's Work 1905; 10:6215–6217.
67. American Law Review 1899; 3:502–503.
68. Congdon LA: A Fight for Food. Philadelphia: J. B. Lippincott, 1916.
69. Roosevelt T: *In* Morison EE (ed): The Letters of Theodore Roosevelt, Vol. 4: The Square Deal; Vol. 5: The Big Stick. Cambridge: Harvard University Press, 1952.
70. US Congress: House, Appendix, 59th Cong, 1st sess. Congressional Record June 21, 1906; 40:8900.
71. Taussig FW: The Tariff History of the United States. New York: G. P. Putnam's Sons, 1892; 7th ed, New York: G. P. Putnam's Sons, 1923.
72. Taussig FW: Some Aspects of the Tariff Question. *In:* Harvard Economic Studies, Vol. 12. Cambridge: Harvard University Press, 1929.
73. Cassedy JH: Applied microscopy and American pork diplomacy: Charles Wardell Stiles in Germany 1898–1899. Isis 1971; 62:5–20.
74. Taylor FW: The Principles of Scientific Management. New York: Harper and Bros, 1911.
75. Kolko G: Railroads and Regulation, 1877–1916. Princeton: Princeton University Press, 1965.
76. US Department of Commerce and Labor, Bureau of Statistics: The Foreign Commerce and Navigation of the United States for the Year Ending June 30, 1905. Washington, DC: Govt Printing Office, 1909; 443–766.
77. US Department of Commerce and Labor, Bureau of Statistics: The Foreign Commerce and Navigation of the United States for the Year Ending June 30, 1909. Washington, DC: Govt Printing Office, 1910; 466–739.
78. US Department of Commerce and Labor, Bureau of Statistics: Statistical Abstract of the United States 1906, 29th Number. Washington, DC: Govt Printing Office, 1907.
79. US Department of Commerce and Labor, Bureau of Statistics: The Foreign Commerce and Navigation of the United States for the Year Ending June 30, 1906. Washington, DC: Govt Printing Office, 1907; 792–849.
80. Blum JM: The Republican Roosevelt. Cambridge: Harvard University Press, 1962 (c1954).
81. Chamberlain J: Farewell to Reform: The Rise, Life, and Decay of the Progressive Mind in America. New York: John Day Company, 1932–33; Reprint Ed, Gloucester, MA: Peter Smith, 1958.
82. Bowers CG: Beveridge and the Progressive Era. Cambridge: Riverside Press, 1932.
83. Garraty JA: Right Hand Man: The Life of George W. Perkins. New York: Harper, 1960.
84. Harbaugh WH: Power and Responsibility: The Life and Times of Theodore Roosevelt. New York: Farrar, Strauss, 1961.
85. Jessup PC: Elihu Root, Vol. 2: 1905–1937. New York: Dodd, Mead, 1936.
86. Mowry G: The Era of Theodore Roosevelt 1900–1912. New York: Harper and Row, 1958.
87. Rothman DJ: Politics and Power: The United States Senate 1869–1901. Cambridge: Harvard University Press, 1966.
88. Stephenson NW: Nelson Aldrich: A Leader in American Politics. New York: Charles Scribner's Sons, 1930.
89. White DA: The men about the president. Munsey's 1903: 1–6.
90. McCormick RL: The party period and public policy: an exploratory hypothesis. J Am Hist 1979; 66:279–298.
91. US Congressional Directory, April 1906, 3rd Ed. Washington, DC: Govt Printing Office, 1906.
92. US Department of Commerce and Labor, Bureau of the Census: Thirteenth Census of the United States Taken in the Year 1910. Washington, DC: Govt Printing Office, 1912; Vol. 1: Population General Report and Analysis. Washington, DC: Govt Printing Office, 1913; Vol. 9: Manufactures 1909: Reports by States with Statistics for Principal Cities. Washington, DC: Govt Printing Office, 1912.
93. US Department of Commerce, Bureau of the Census: Manufactures 1905: Part 1: United States by Industries CCVII-CCIX. Washington, DC: Govt Printing Office, 1907.
94. US Congress: Senate, 59th Cong, 1st sess. Congressional Record February 1906; 40:2665.
95. US Congress: House, 59th Cong, 1st sess. Congressional Record 1906; 40:6467–8898, 8957–8959, 8971, 8975.