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"OUR LAGER PLEASES THEIR TASTES:" BEER AT INTERNATIONAL EXPOSITIONS, 1873-1900

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Abstract

Beer often occupied a prominent place at the International Expositions of the late nineteenth century—whether as a beverage enjoyed by visitors or as evidence of technological advances. This article examines the exhibits by brewers and firms that served the brewing industry at several of the significant expositions in the last decades of the 19th century. There were opportunities for exchanging knowledge of many types: of raw materials, of processes and equipment, of marketing, and of beer styles themselves. Technical information about the brewing process was likely shared through papers and concurrent meetings of brewers because few working master brewers would have had the time or resources to attend these events. Contests in which beer was evaluated by experts yielded little knowledge the brewers did not have already and were more important for the medals which could be touted in advertising. But brewers interested in new export markets could display their wares and manufacturers of equipment and supplies had ample opportunities to impress customers and the public at large with the advancements of science and industry. Ultimately, the displays at expositions helped place beer and brewing at the centre of the modern industrial world but seem to have had more effect on the curious public than on the accelerated development of the industry.

Introduction

The era of the international expositions focusing on industrial innovation is generally considered to have begun in 1851 with the Great Exposition in London.[1] These grand events were not held on any particular schedule or rotation but sometimes coincided with a significant anniversary (as in the case of the World's Fairs in the United States in 1876, 1893, and 1904).[2] Their purposes were manifold: to show off the products of the host country and visiting exhibitors, to encourage wider adoption of new technologies and products, and to draw tourists and their money to the host city. The Centennial Exposition of 1876 in Philadelphia recorded nearly ten million visitors in total — equal to 20% of the U.S. population at the time, and the World's Columbian Exposition of 1893 in Chicago (celebrating Columbus' first voyage a year late) attracted over 21 million people.[3] The 1900 exposition in Paris drew over 50 million visitors — which was more than the population of France at the time.[4] The expositions had an intentionally nationalist approach. Exhibits in the agricultural or industrial pavilions were often divided into national groupings which created a sense of competition in the mind of the public even if the actual exhibitors were more interested in cooperation.[5] The expositions also reflected the imperialist and chauvinistic attitudes of the powers of the era—startlingly exemplified by the racist exhibitions of native peoples at some of the events.[6] While there were increasing numbers of regional events during the last years of the century, the most important expositions were in the capitals of the great empires.

The millions of people who passed through the vast halls at the great expositions expected to be awed by the marvels of the age. Technology was presumed to lead logically to improvement of life and culture. The most important task of innovation was to apply technology to the mass reproduction of objects.[7] Commodification and consumption always have been at the heart of the exhibitions. They operated like museums that displayed what the modern world could create but also like catalogues to show visitors what they could possess.[8]

Among the multitude of manufacturers vying for the attention of the public at expositions were the beer brewers of the world. During the late 19th century, brewing was taking advantage of advances in manufacturing technology and brewing science to make beer of heretofore unknown consistency and quantity. Nowhere was this expansion more dramatic than in the United States, where production exploded from 2.6 million barrels in 1863 to over 40 million barrels in 1901.[9] As American brewers applied new technologies and marketing,



Figure 1. Visitors to World's Fairs had many opportunities to spend money on reminders of the marvels they saw. This spoon was most likely acquired by the author's great-grandparents while visiting the Chicago's Columbian Exposition in 1893. It depicts Machinery Hall, where many exhibits of brewing equipment were displayed. (Collection of and photo by author)

they became more integrated in formal trans-Atlantic exchanges of information through international expositions.

In order to stand out from the visual overload experienced by visitors, businesses or nations needed to make their exhibits memorable, so a specialized art of commodity display arose out of the exposition phenomenon.[10] Designers used a number of techniques to draw visitors to an exhibit and to send them away with a positive impression of the product. Raw materials were often included in displays of food and drink products, such as beer, to suggest "the natural origins and healthful properties of the processed product." They were also included as a testimony to the quality of the ingredients.[11] A particularly eye-catching form of display was to build a structure out of the product itself.[12] Brewers led the way in creating 'polyisomorphs' such as a giant bottle-shaped tower constructed of thousands of individual bottles.[13] This not only helped make up for the small size of the individual item, but also created an impression of abundance. A company that could make so many bottles of beer must be one of great size and wealth. The number of identical products also conveyed an impression of consistency and also implied that with such an enormous demand the product must be popular and dependable.[14]

The exposition grounds were large and lavish and needed to cater to tens of thousands of visitors. To slake the thirsts of their visitors, most of these events featured restaurants or drinking 'stands' featuring the local brews or of guest exhibitors who were anxious to reach new markets. Beer featured at many of these establishments on the grounds and guides for tourists directed visitors to places elsewhere in the city where they could find the beer of the country. This paper will focus on the presence of beer and related industries at four expositions: 1873 in Vienna, 1876 in Philadelphia, 1878 in Paris, and 1893 in Chicago. These are chosen in part because they are the events for which sources about the beer and beer-related businesses are readily available, but also because there is evidence of at least some trans-Atlantic transfers of knowledge in the brewing industry.

Weltausstellug, Vienna, 1873

Even though it had recently suffered from the crushing defeat by Prussia in the Seven Weeks War and the resulting cession of some imperial authority to Budapest, Vienna remained a vibrant cultural and economic capital of central Europe. Official visitors to the Exposition in Vienna wrote with wonder of the beer gardens, bar rooms and restaurants. Fred. W. Russell, reporting on behalf of a group of Massachusetts commissioners sent to evaluate the Exposition, wrote:

> Beer-Gardens […] are the most prominent feature of Vienna life. […] the beer-garden par excellence consists of a grove of trees filled with round tables and chairs, and the ground covered several inches deep with pebbles, sifted from the bed of the Danube, an admirable preventive of dampness.[15]

Henry Vizetelly, an English journalist whose expertise in wine earned him the position as his country's juror of fermented beverages at Vienna, remarked



Figure 2. The exhibit of the New Orleans Brewing Association at the Columbian Exposition of 1893 is an example of a 'polyisomorph,' in this case, a beer bottle sculpture created from beer bottles. *Western Brewer* (hereafter, *WB*) June 1893, p.1286.

In no city in the world is beer to be found of such general excellence and so uniform a quality as at Vienna, where it is almost invariably obtained in high perfection, owing partly to the more celebrated breweries being so near to the capital, but chiefly to the quick consumption at the numerous beer halls and gardens, which ensures fine condition as well as perfect freshness.

Vizetelly's critical analysis also observed that this rapid consumption meant that the poor-quality German pitch used to line the barrel would have less time to taint the beer and thus would be less noticeable.[16]

Russell and Vizetelly also described the beer itself, though with dramatically different levels of detail. Russell only described the styles widely available in the city whereas Vizetelly focused on detailed descriptions of beers exhibited at the Exposition for judging. Of Vienna's beer, Russell noted:

The beer is of two kinds; the Vienna a coarser quality, and the Pillsner [sic], so-called, originated, I believe, in Bohemia. This Vienna beer is about the same in quality as the Bavarian or Munich beer, but is claimed to be superior. Immense quantities of it are now manufactured for export, Dreher being the most

prominent manufacturer. The Pillsner beer is a comparatively new article, being an attempt to make a lighter, less intoxicating beverage. It is slightly more costly, of a lighter color, and more limpid, and does not wear so well in its use as Vienna beer. The latter […] costs about four cents a seitl [sic] or glass, and Pillsner five cents.[17]

Vizetelly, who had more technical knowledge of beer, had a higher opinion of Vienna lager:

The Austrian beers […] are brewed in accordance with the Bavarian system, and are generally a very superior class of beverage. They are of a pale amber colour, exceedingly bright and sparkling, and of a full pleasant flavour, entirely free from acidity, remarkably light drinking, are invariably in fine condition, owing to their being kept constantly iced when the weather is in the least degree warm, and always carry a rich creamy head. […] Austrian beer is not nearly so strong as English beer, yet from the quantity of unfermented extract which it contains, it drinks fuller so to speak in proportion to its strength and is infinitely more refreshing.[18]

Vizetelly also provided more specific insight as to what made pilsner special:

This beer is exceedingly pale in colour as well as remarkably light, being even weaker than Vienna beer, and contains a considerable amount of carbonic acid. Its distinguishing quality, however, is its strong, indeed almost medicinal bitter flavour, due to the Saaz hops, held in the highest esteem in the locality.[19]

He reported, as did Russell, that pilsner was more expensive than the local lager but was still quite popular despite the price.

Both Russell and Vizetelly were writing for general audiences but were specifically addressing their observations to policy makers. Russell was part of a commission specifically enjoined by the Massachusetts state legislature to publish reports on the Exposition. The editor of the report justified the effort hoping 'If [the articles] do something to stimulate further perfection in the manufactures in which we already excel, […] then the Commission will not have been sent out in vain'.[20] As a juror, Vizetelly was in a particularly good position to share technical expertise with his readers as well as information about the character of the beers themselves. He made special mention of those brewers who earned commendation at the Exposition — whether it was through a 'diploma of honor,' a 'medal of progress,' a 'medal of merit,' or honorable mention. The latter recognition was bestowed, among others, upon a Spanish brewery from Barcelona 'by way of encouragement for some very indifferent beer'.[21] But his emphasis on the beers of distinction was intended to guide progress in the brewing industry. Vizetelly made several comparisons of continental beers to those of his native land. In a seemingly condescending remark, he claimed that 'Vienna beer would not be considered sufficiently stimulating for general consumption in England, besides which it lacks the aroma and flavour of the hop'.[22] He observed that the German and Austrian beers 'have a mild and soft flavour, and it is rarely that any of them are so bitter as the English pale ales,' though he recognized that exception should be made for those of Pilsen.[23] He also claimed that while these lagers were 'most agreeably light and exceedingly refreshing, [they] are adapted solely for rapid consumption and cannot support even a moderately warm temperature'.[24] This latter complaint must be viewed within the context of the competition — the local breweries insisted on cold storage cellars which would show their products at their best while the offer of cellaring privileges came to late for the English beers that had already been left 'to simmer, if not to boil, in the high temperature of the Vienna Industrial Palace.' This also was the fate of 'three daring exhibitors who had sent beer all the way from New Zealand […]'.[25] Despite this momentary lapse into partisan injury, Vizetelly praised German beers which were more stable. He noted that several of the award-winning Bavarian beers had 'been heated in accordance with the process introduced by M. Pasteur some few years since […] in order to make it keep, and more particularly to enable it to travel […]' and added that the practice was quite common in Germany, Denmark, and Norway.[26] He called special attention to the export beer of Hinselmann of Schleswig-Holstein, '[…] which had made the voyage to Jamaica and home again'.[27]

Vizetelly's delight in the variety of beer styles and nationalities was evident in his description of the exhibitors. In addition to "all the great breweries in diverse parts of the complex Austrian empire" and Germany, he noted with satisfaction that excellent samples came from

Denmark, Norway, and Sweden; Russia and Poland too forwarded a few specimens, as well as France, Belgium, Italy, Switzerland, and Spain. There were also exhibitors of beer from Roumania, [sic] and even from China and the Brazils.

The German beers included 'salvator, schink, lager, luxus, braun, and Weiss beers' and German brewers also earned medals for their bottled export, salon, and bock beers.[28] Even though '[…] the great Berlin and other principal breweries forwarded no samples,' Vizetelly described the brewing scene in the Prussian capital:

Besides its Weiss bier Berlin is celebrated for its Bayerisch bier, brewed according to the Bavarian method, as well as its bitter, braun, josty, and weizen biere. The bitter beer is very thin, whereas the brown beer is thick and often sweet. The josty beer, which takes

its name from its brewer, has a flavour of herbs, and the weizen beer, brewed from wheat malt, dispenses altogether with hops.[29]

Russian brewers sent some fine examples of lager, though the ale from Riga and porter from Kiew [sic] earned no recognition.[30] Vizetelly noted with national pride that

> Messrs. Neville, Read and Co.'s Windsor ale and stout were found deserving of honourable mention, and Messrs. W. Younger and Co. of Edinburgh had a medal for merit given them for their excellent bottled ales.[31]

The opportunity provided to examine beers from around the world in a single location was of great value in an age where *Around the World in Eighty Days* had just been published. The nexus of information transfer was without parallel in its time. It therefore was with evident regret that Vizetelly reported the relative or complete absence of exhibits from several important brewing nations. French beer was not well represented in Vienna, and

> [e]ven Belgium, which is essentially a beer drinking country, and famous for its Faro and Lambick [sic] beers — the wort of which, after being subject to continuous boiling, ferments for weeks and even for months — sent very few samples of its beers to Vienna […].[32]

Perhaps most surprising was that 'There were no samples from the United States, where during the last few years the increase in the production of beer has been enormous'.[33] The reasons for this absence are not clear. The United States was not yet suffering from the collapse of bankers Jay Cooke & Co. that triggered the Panic of 1873, and excise records agreed with Vizetelly's assessment of American brewing. Over 4,000 breweries were in operation in 1871, and though many of them were small, a mix of established ale breweries and upstart lager breweries meant that brewing was an ever-growing source of employment and revenue. In addition, American beer had been represented at previous expositions. Two U.S. breweries exhibited at Paris in 1867, and the porter and ale of New York's Macpherson & Donald Smith earned a bronze medal.[34]

Notably, the Bohemian city of Budweis was not among the brewing centres mentioned by Vizetelly, but there is evidence that their beer was represented in Vienna and inspired visiting Americans. As part of his defence against a suit by Charles Conrad, creator of the Budweiser beer sold by Anheuser-Busch of St. Louis, Otto Lademan of the Joseph Uhrig Brewing Co., also of St. Louis, argued that he had not infringed on Conrad's trademark or process and had in fact learned about Budweis beer in Vienna at the Exposition.[35]

The Vienna Exposition was a veritable crossroads for the student of brewing. Vizetelly made special note of brewing processes, chemical analyses, and ingredients in his account, including the use of widespread use in Prussian breweries of adjuncts (ingredients other than barley malt, hops, water, and yeast) such as 'sugar and syrup, chiefly potato starch'.[36] He also reported the implications for taxation of the use of different ingredients as well as the overall excise situation in the major brewing nations. Even without formal participation by brewers from the U.S., knowledge of brewing expanded and apparently crossed the North Atlantic at least to some degree. In the years after Vienna, there was an increase in the number of Vienna, Pilnser, Munich, Kulmbacher, and other regional lagers produced by American brewers. However, this was more likely due to immigrant brewers recreating the styles of their homelands than to direct inspiration from the Exposition.

Centennial International Exhibition, Philadelphia, 1876

Scheduled to celebrate the centennial of United States Declaration of Independence, the Exhibition held in 1876 in Philadelphia is perhaps best known for the first public demonstration of the telephone and the public debuts of Heinz Ketchup and Hires Root Beer. But beer had a significant presence on the landscape — literally, because this event was the only one of its kind to feature a building entirely devoted to beer and brewing. The Brewers' Building, a large annex to Agricultural Hall, was built by the United States Brewers' Association and was the site of their sixteenth annual convention in June 1876. It was described as 'one of the most conspicuous buildings upon the grounds erected by private enterprise.' It was 272 feet (82.9 m) long, 96 feet (29.3 m) wide, and had a central tower 60 feet (18.3 m) high. This tower had a viewing platform accessible via a new Otis steam elevator.[37] The most remarkable exhibit in this building was the Centennial Brewery: 'a model brewery in complete working order, with all the latest improvements and appurtenances'.[38] This was not a small pilot system — it had a capacity of 150 barrels (176 hl) per batch. It was designed and built by Charles Stoll of Brooklyn, New York, who was a manufacturer of brewery and malt house machinery.[40] The building also housed a 'full display' of exhibitors of raw materials and '[…] all the mechanical appliances used in each branch of the brewing business' — 207 in all.[41] The emphasis on technology was much more pronounced than it was in Vienna — the opening ceremony concluded in Machinery Hall and featured President Ulysses Grant and Emperor Pedro II of Brazil starting up the Corliss Steam Engine which was a central exhibit in addition to powering much of the exposition.



Figure 3. Shown here in a stereoscope image, Brewers' Hall was one of the most impressive structures at the Centennial Exhibition at Philadelphia, and the only building at any World's Fair to be dedicated solely to beer and brewing. (The Library Company of Philadelphia).

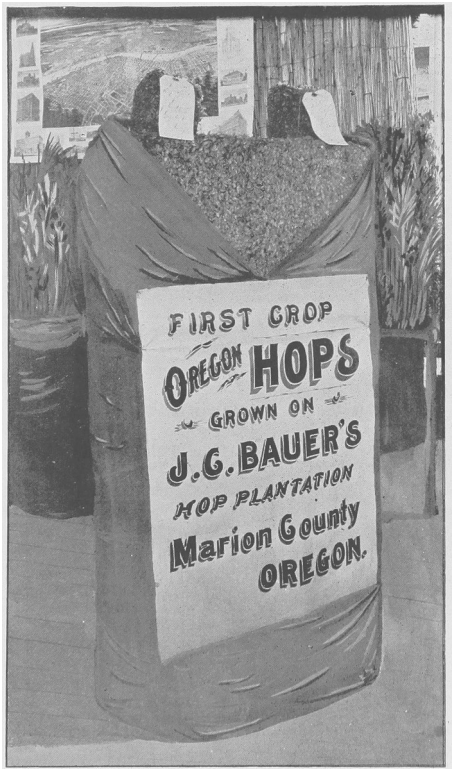


Figure 4. Exhibits of raw agricultural products were a popular feature of most World's Fairs. This exhibit of Oregon hops was presented at the Columbian Exposition of 1893. *WB* July 1893, p.1546.

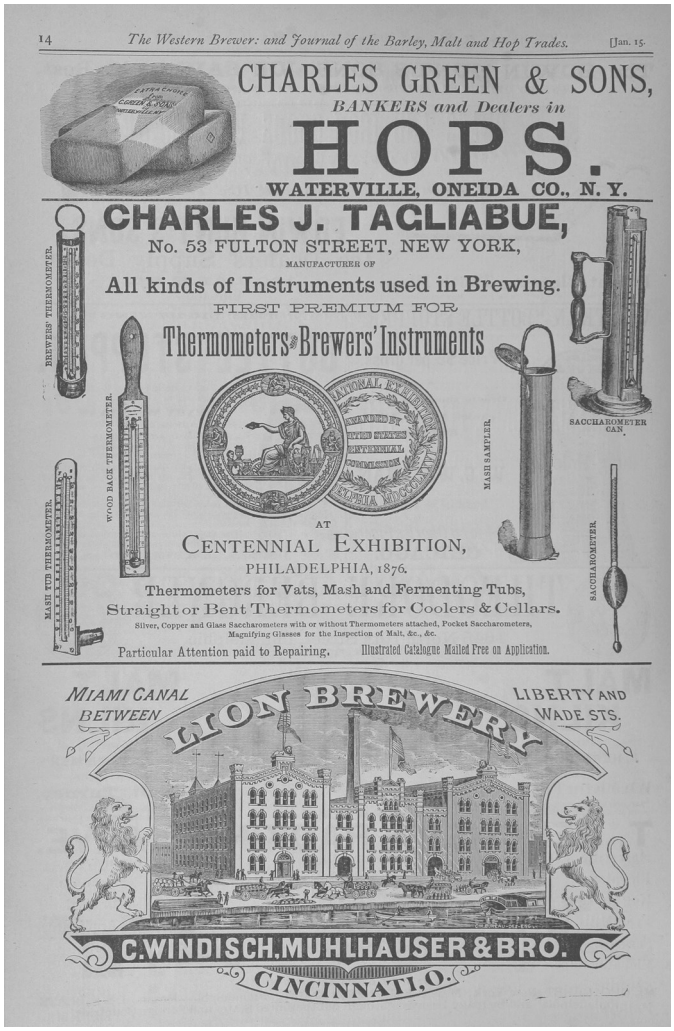


Figure 5. Industries that supplied the brewing industry touted their medals at World's Fairs in trade publications such as *Western Brewer* as proof of the superiority of their products. *WB* January 1878, p.14

The emphasis on technology dominated contemporary accounts, even in publications focusing on beer. While a competition is mentioned in one article, lists of breweries present or awards earned have been elusive. The exhibit of Philip [sic] Best Brewing Co. of Milwaukee (which in 1889 would become Pabst Brewing Co.) was worthy of mention in an official catalogue of the event for its 'large storage cask […] within [which] were seen a number of fantastic figures of gray-bearded dwarfs drinking beer.' Surrounding the cask were paintings of King Gambrinus, Ceres, and Pomona, all enclosed by frames composed of bottled beer.[42] Even less detail was given about the exhibit of the Berlin Brewing Company of Germany, except that it was an 'attractive' display 'and was situated near the main aisle'.[43]

However, the exhibits of equipment and raw materials were described in much more detail. The display of 'copper articles for brewers' by John Trageser & Son of New York included dimensions of the pipes, sizes of the kettles, and descriptions of how each machine worked. Barrel washers, bottle washers and other items were explained to a public fascinated by new technology however it was applied. The new industry trade journal *The Western Brewer*, published in Chicago, devoted space to describing the barley and hop competitions but completely ignored the exhibits of the breweries. The Malsters' [sic] Committee of the United States Brewers' Association offered 'several valuable prizes' in categories based on the variety of barley and the region of North America in which it was grown, with a separate prize for the best machine '[…] to separate and clean barley for

malting.' Likewise, the Hop Department offered prizes of $50, $30, and $20 in gold over and above the medals awarded by the Centennial Commission.[45] This suggests that the exchange of knowledge about raw materials and equipment was of more importance at this point in the development of the industry than an introduction to new styles of beer.

The relative importance of industrial efficiency over flavour is borne out by the advertisements which appeared in American trade publications such as *Western Brewer* during subsequent years. This seems to indicate that some knowledge was transferred through industrial journals not just in a one-time fashion through articles, but repeatedly through advertising. In a sample issue, January 1878, a reader need have gone no farther than the first page to see that Chas. Pope, a maltster of Chicago, was touting the medal and diploma received for their superior malt.[46] On the very next page, the George F. Blake Manufacturing Co. of New York celebrated '4 Medals of Honor & Diplomas of Merit!' for their steam pumps which were in operation in more than 500 breweries.[47] After a few dozen pages, any reader who did not recognize the medals awarded by the International Exhibition was not paying attention.[48] While some medals were awarded for significant developments like the Fisher Refrigerator system, Geo. B. Cornell of Chicago boasted that his company earned 'Positively the Only Medal Granted by the Centennial Commission for Bung Bushes and Inserters,' which probably was not a hotly contested category.[49] In contrast, none of the eminent breweries advertising in this issue mentioned anything about medals at the Exhibition. (This would change shortly.) But because the audience of *The Western Brewer* and other similar publications were members of the industry rather than the general public, it was more important for these business to exchange knowledge of technology than of the wide acceptance of their beer.

While comprehensive records of the beer available at the Centennial Exhibition do not appear to be extant, there are some tantalizing hints about the extent to which it was present. One account of the Brewers' Building noted that:

> Besides the main building there is another for the storage of malt liquors for exhibition and competition. In this building there are 'samples of malt liquors constantly on draught,' and 'visitors are invited, with the permission of the directors, to discuss the merits of the same.' The brewers' organ says of the custodian of these stored liquors that he is 'winning golden opinions from visitors by his hospitable dispensing of sample glasses'.[50]

Pennsylvania brewing historian Rich Wagner has cited statistics published in the *Philadelphia Times* boasting that individual restaurants on the grounds sold tens of thousands of gallons of lager beer in a matter of three months.[51] Some of this beer came from unlikely sources. *The West Bend* (Wisconsin) *Democrat* asked its readers in March 1876 'What say you to this? The West Bend Brewing Co., S.F. Mayer & Co., have contracted to furnish 1,000 barrels of lager beer to quench the thirst of centennial visitor [sic] to Philadelphia.' A few months later, it announced 'The Eagle Brewery [Kuehlthau & Janssen] is shipping lager beer to Philadelphia'.[62] While the amount the Eagle Brewery proposed to ship was not given, the brewery only manufactured 1,600 barrels the previous year, and the amount Mayer contracted for was equivalent to 40% of their 1875 production.[53] The fact that the Exhibition was seeking beer from two such relatively obscure and distant breweries suggests that many other breweries may have had their beer served on the grounds, though it was probably marketed simply as 'lager beer' or maybe 'Wisconsin beer.' However, the relative paucity of references to the beer itself seems to indicate that at this point in the development of the brewing industry the process was more important than the product. Brewing was moving from craft to industry, and proprietors of expanding firms needed the best information about how they could use technology to make their businesses safer, more efficient, and more profitable.[54]

Exposition Universelle, Paris, 1878

According to J.M. Wing, publisher and editor of *The Western Brewer*, the success of the brewers' pavilion in Philadelphia '[…] seems to have incited the brewers of Europe to making an extraordinary effort in the same direction […].' Whether this was cause and effect or just an expression of national pride, it suggests that transfers of knowledge in brewing went both ways across the Atlantic. Even before the Exposition opened in May, Wing was able to publish a list of the countries expected to participate and a list of American brewers who had already shipped their exhibits to France. He reported that Anheuser, Lemp, and Uhrig from St. Louis, Massey and Bergner & Engel from Philadelphia, Best from Milwaukee, and others 'have entered liberally into the enterprise, sending beer both in bottles and barrels, put up in a very attractive manner'.[55] This suggests that marketing with an eye toward increasing exports to Europe and elsewhere was to be more important than before.

The previous few years had seen an explosion in the bottling of lager beer by American breweries and a similar dramatic expansion in the amount of beer shipped domestically and abroad because of the opportunity that bottles presented. Wing confirmed this indirectly when lamenting the absence in Paris of breweries from his home of Chicago: '[…] but this shortcoming is accounted for by the well known fact



Figure 6. This Phillip Best Brewing Co. trade card of 1881 is among the earliest known items of brewery ephemera to use World's Fair medals to appeal to the general public. The company changed its name to Pabst Brewing Co. in 1889. (Photo by Robert Fogt, courtesy of University of Minnesota Press.)

that Chicago consumes much more beer than is manufactured there, and hence local brewers are not seeking for other markets'.[56] He continued in a separate column:

> Whoever among our brewers first opens a café on the Boulevard des Italiens for the exclusive sale of his bottled beer, will find a market and a demand for it in Paris, […] Our lager pleases their taste for light drinks, and in this regard finds fare greater favor than the heavy ales and stouts of the English brewers. My prophetic eye can readily foresee how Busch, Schandein, Bergner or Seipp, all of whom are now on the Continent, will realize the demand for American bottled lager, and set out to supply it.[57]

In fact, the advance of American light lagers into Paris was already underway. When Adolphus Busch arrived in Paris in July he was '[…] agreeably surprised to find his beer already in so many first-class hotels and cafés in Paris, when it is but a few weeks since his agent arrived to offer it'.[58] Per-



Figure 7. The Anheuser Brewing Association was the predecessor of Anheuser-Busch Brewing Co., but even at this date they still used the aggressive marketing tactics that would herald the company's rise to worldwide fame. *WB* April 1879, p.272 .

haps Wing was unable to find these cafés, for he waxed pathetic about the lack of suitable refreshment to counter the 'tropical sun.' In a passage showing both the provincialism of American Midwesterners but also the pride in their product, he complained that '[…] while beer alone seems to cool and quiet all classes,' it was

> […] not our good and wholesome lager, with its amber translucent glow and its creamy froth — but the insipid French beers, the 'Salvator,' made by Grueber, of Strasburg, sweet and sickening, or the pale and colicy brewing of the Italian Chiavenna. […] Austrian brews and Holland 'stews,' if we may thus characterize the thick and ropy manufacture of the Dutch, who live away down where father Rhine loses himself in the sands and never deigns to wed the sea. […] But I am proud in having a few bottles of Capt. Pabst's January brew packed down in the bottom of the larder at my hotel, and to-night, when all are dreaming but the concierge, I will enjoy the flavor of good Milwaukee beer, drank under the shadow of the Grand Opera.[59]

However, Wing was much more generous in his evaluation of the English brewers — both their products and their exhibits. He took special note of the 'English buffet,' which served Ind, Coope & Co.'s Burton ales and Romford stout, and which had 'imported fifteen English barmaids' for the event.[60]

When not complaining about the local beer, Wing was an interested visitor to the various exhibits. His description of Bergner & Engel's exhibit, which was the largest in the American delegation, emphasized that it demonstrated 'the whole process of manufacturing, advertising and selling the lager beer made by the firm' including 'a collection of all the placards and advertising devices of various kinds employed to bring the beverage to public notice'.[61] Even with the increased emphasis on marketing, it was still important for Wing's reports to serve the interests of his readers, who were primarily interested in raw materials and brewing equipment. He published a thorough description of the barley exhibit and the experimental varieties displayed therein including French barley 'with which the American maltster is less familiar' (but which did not impress Wing). He also noted that '[…] the foreign maltster and brewer seems far more catholic in his use of materials'.[62]

Accounts of advances in brewing science were also published during the course of the Exposition. The Parisian newsletter *L'Exposition Universelle de 1878 Illustrée*, which appears to have been designed for the general reading public as well as participants in the Exposition, carried numerous articles about beer and brewing during the time before and after the event. While some columns lamented the inconvenience of the beer stands on the grounds and the relative inability to find the beer of visiting exhibitors, others discussed Pasteur's methods and other techniques used by British, French and Belgian brewers to maintain the purity of their products.[63] The International Brewers' Congress met in Paris during October and those in attendance (mostly European brewers) were able to exchange information about technical advances through the presentation of papers.[64]

Nonetheless, the new rivalry among the largest American brewers to secure national and international markets caused more emphasis on awards for beer than had been evidenced before. Breweries trumpeted their awards on their advertising and eventually on their new bottle labels — which by this date were starting to move from being an aid in getting their bottles back to being a way to promote the quality of their beer. The text for the E. Anheuser Co.'s Brewing Association advertisement in The Western Brewer proclaimed that

> […] four distinguished International Juries, […] before whom the productions of the best Breweries of the Old and New World have been competing, have given First Award, being Grand Gold Medal, to the E. Anheuser Co.'s Brewing Association for the Superior Excellence of their Bottled Beer, in points of aroma, brilliancy of color, and keeping qualities. Thus the crowning triumph is added to the numerous victories achieved by Anheuser's renowned brand of Bottled Beer in many peaceful contests of industry.[65]

Left out of this celebratory account were the facts that two other American breweries, rising archrival Phillip Best of Milwaukee and Geo. Bechtel of Staten Island, New York, had also earned gold medals, and that the only Grand Prize bestowed on an American firm was that of Bergner & Engel of Philadelphia. (The only other Grand Prizes were awarded to Anton Dreher's brewery in Kleinschwechat near Vienna and to J.C. Jacobsen's brewery in Copenhagen.)[66] The Anheuser publicity machine apparently influenced the national press, because the *New York Times* also reported that Anheuser's beer had won first place overall.[67]

The Paris Exposition seems to have marked a change in emphasis for brewers, who were now at least as interested in capitalizing on the celebrity of their beers to benefit the export trade as they were to have the purity of their beer confirmed by experts. There were significant advances in raw materials and brewhouse engineering to share with the trade, but the dissemination of the ideas primarily happened through scientific papers at conferences and accounts shared by journalists rather than by brewers visiting the Exposition and learning firsthand.

Interval, Paris, 1889

The effort and enthusiasm necessary to host, promote, and participate in international expositions was difficult to maintain at a consistently high level. This was perhaps especially true for American brewers, for whom a trip to Barcelona in 1888 or Paris in 1889 was an ocean voyage of weeks rather than a train ride of hours. The lack of American participation in Paris in the Universal Exposition of 1889 was noted with disappointment by *The Western Brewer*:

> To the stranger seeking information and instruction in regard to the various improvements and scientific progress made in recent years in the art of brewing and its auxiliary industries in all parts of the world, the exposition is somewhat of a disappointment. […] It seems unfortunate, viewed from the stand point in which I find myself at this time, that the American brewery engineers and specialists in brewery machinery and appliances should not have taken advantage of this great opportunity to show the foreign trade how greatly they have improved upon the old stereotyped methods of manufacture so commonly in vogue on this side.[68]

However, the article concluded with approval that Americans were already looking forward to hosting a World's Fair in 1892, and that

> whatever location may be finally decided upon, there can be no question but that the proverbial enterprise of American brewers and brewery artisans will develop an exhibit that will be commensurate

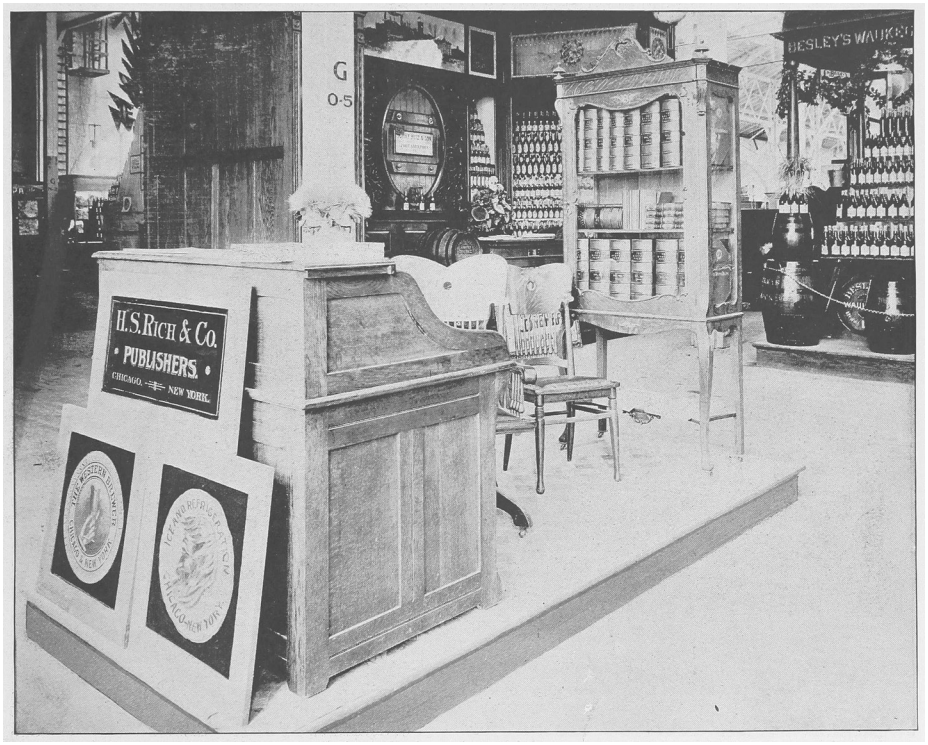


Figure 8. The publishers of *The Western Brewer* were essential to spreading technical and commercial information, but their exhibit was probably of less interest to the general public than those of the brewers. *WB* August 1893 p.1781

with the importance and magnitude of this art and its attendant industries in all parts of the civilized world.[69]

World's Columbian Exposition, Chicago, 1893

Originally proposed for 1892, the World's Columbian Exposition was designed to celebrate the traditional narrative of the linkages across the Atlantic Ocean initiated by the first voyage of Christopher Columbus in 1492. The White City, the lavish use of electricity to power the Exposition, and the display of American industrial might also had the subtext of suggesting that the "New World" had surpassed the old in achievement. While American brewers certainly hoped to participate in the exchanges of knowledge possible in the event, they also hoped to prove their pre-eminence among the brewers of the world.

Originally conceived to celebrate the arrival of Christopher Columbus in the Western Hemisphere in 1892, the World's Columbian Exposition did not open until May 1893 (though a dedication ceremony was held in October 1892 to mark the anniversary of Columbus' landing).[70] As was common practice, the United States Brewers' Association and the International Brewers' Congress scheduled their meetings in June to coincide with the Fair, but to emphasize the trans-Atlantic focus of the Fair, the two meetings were scheduled consecutively to maximize the presence of overseas brewers at the U.S.B.A. technical presentations. The correspondent of *The Western Brewer* (which had its own display among the brewing industry exhibits) was enthusiastic about the prospect:

> It goes without saying that these two meetings, coming simultaneously and in connection with the World's Fair, promise the most important gathering of the members of the brewing trade that has ever taken place in this country, and should mark an epoch in the trade. […] The meetings will therefore be composed of the representative brewers of the whole world, who will join in the work of the two meetings in a way to make them wonderfully interesting and at the same time to give the proceedings the highest possible value, both from a technical and a business standpoint.[71]

The events of the International Brewers' Congress would be open to all associated with the industry, and featured ten papers to be presented in person and additional scholarship that would be distributed in print. Lecturers came from Berlin, Munich, Copenhagen, Vienna, Burton-on-Trent and other European brewing centres to present their findings on



Figure 9. The exhibit of the B. Stroh Brewing Co. of Detroit displayed both keg and bottled beer, but the backlit bottles were much more eye-catching. *WB* June 1893 p.1285.



Figure 10. Pabst's spectacular terra cotta pavilion at the Columbian Exposition was later disassembled and moved to Milwaukee to serve as a solarium for Pabst's mansion which still stands on what is today West Wisconsin Avenue. *WB* August 1893, p.1779.



Figure 11. The detailed model of Anheuser-Busch's extensive plant was surrounded by samples of their bottled products and replicas of medals earned at previous expositions.



Figure 12. The Mayer Brewing Co. of New York City created an altar effect for their exhibit in Chicago. *WB* July 1893 p.1542.

topics ranging from preparing pure yeast and malting to 'Diseases of Beer, Their Symptoms and Diagnosis'.[72]

The number of breweries in attendance from around the world amplified the possibilities for international exchange of knowledge. The host nation was represented by 25 breweries, arriving from diverse locations ranging from New York to New Orleans to Denver. Germany led the foreign brewers with twelve exhibitors, Great Britain had eleven (two of which were from Dublin), Australia had nine, Canada had six, Mexico sent four, and Uruguay three. Belgium, Spain and France had two each, and Denmark, India, Italy, Japan, Norway, Russia and Switzerland were each represented by a single firm. Interestingly, no Austrian brewers were present, though five maltsters and seven hop merchants represented the Empire.[73] This suggests that Austrian brewers had little interest in gaining new markets in the U.S. but that suppliers of raw materials were interested in providing information about their products. *The Western Brewer* took several months to describe adequately the many spectacular exhibits, several of which had a representative of the company available to answer questions from the public. The displays of Christian Moerlein Brewing Co. of Cincinnati, B. Stroh Brewing Co. of Detroit, David Meyer Brewing Co. of New York and others featured elaborate arrangements of their products — mostly in bottles so the electric lights prevalent at the Exposition could highlight the colour and clarity of the beer. The Bartholomay Brewing Co. of Rochester, New York, brought a model brewery based on their plant at 1/1728th scale. It was a '[…] working model in all respects, although owning to internal revenue regulations it is simply in motion at the Fair, and not brewing.' It had a capacity of one barrel per day and was fabricated at a cost of $5,000.[74] The three exhibits that commanded the most attention and admiration were, unsurprisingly, those of the three biggest exporting breweries in America — Schlitz, Pabst, and Anheuser-Busch. All three had elaborate displays inside lofty pavilions: the St. Louis company had a 25-foot-square model of their brewery in a 27-foot-high pavilion, but Pabst bested them by having their model of the brewery plated in gold.[75] Franz Schwackhöfer, a chemist of the Austrian research centre for breweries and maltsters in Vienna, remarked that the exhibits left nothing to be desired from a decorative point of view but were meaningless for any professional study.[76]

Ultimately, what most of these exhibits conveyed was an impression of the success of the company, but they also spoke to the diversity of the products of American breweries. Most of them had several different beers on display: Anheuser-Busch had five plus their malt tonic, Pabst one-upped them with six plus a malt tonic. Even less well-known breweries like Besley's Waukegan Brewing Co. (just north of Chicago) had five ales for the inspection of visitors and the John F. Betz brewery of Philadelphia appears to have beat them all with nine different ales and lagers, several of which were presented in both bottles and 'in wood' — a lineup that would impress most 21st century craft brewers.[77]

While overshadowed by the garish displays of beer and architecture in the brewery exhibits, the manufacturers of equipment for the brewing trade were impressive in their own way. The De la Vergne Refrigerating Machine Co. not only had one of their largest machines on display in Machinery Hall, they also had two plants cooling the ice in the Midway Plaisance and a tiny one in Bartholomay's model brewery.[78] Many of the companies represented produced equipment for specific tasks, such as Reliance Gauge Co., Cleveland Faucet Co., and Pratt & Whitney, which is now in the aircraft engine business but in 1893 was manufacturing automatic weighing machinery.[79] The company presenting the most transformative new product at the Fair was hidden among other unrelated exhibits,

> […] but the faithful searcher after truth will be able to find 'E-A-2' in the Annex, if he keeps at it long enough. And when he has got there, he finds Mr. Mott G. Gillette in charge of the exhibit of the Crown Cork and Seal Co., of 500 E. Monument street, Baltimore.

While the exhibit contained machinery for their popular seal stopper (or 'Baltimore Loop Seal'), the real revelation was

> […] the 'Crown Seal,' that splendid new stopper by this company, which the big breweries of St. Louis and Milwaukee are using up almost as fast as the company can make them now. A steam power beer machine is now in course of construction, which the company expect to have ready this fall, when the 'Crown Cork' will be accessible to the entire trade.[80]

The Crown Cork is now simply called the 'bottle cap' and is in such wide use today it is difficult to envision the reaction of brewers in 1893 seeing the device for the first time and considering how much time and expense it could save them.

While the exhibits provided great opportunities to exchange knowledge about the brewing industry, the meetings of the USBA and the International Brewers' Congress offered more to those who were not shopping for new equipment or marketing ideas. The USBA meeting was mostly concerned with the business of the organization and issues more fiscal or political in nature, especially taxation and temperance. At the Brewers' Congress,

> […] the attendance of foreign brewers was not so numerous as was expected, but a number of foreign scientists were represented by elaborate papers, extracts from which were read in one language

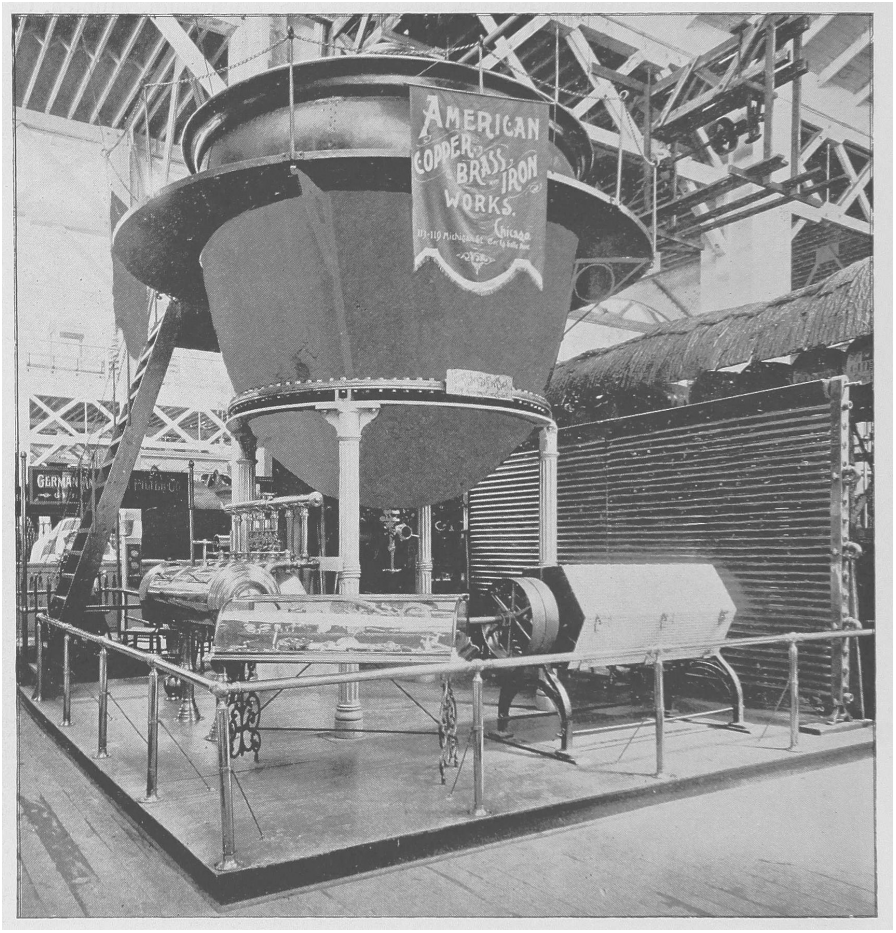


Figure 13. The Zymotechnic Institute exhibit at the Louisiana Purchase Exposition in 1904 in St. Louis featured cabinets full of the chemical instruments used to analyze beer samples. *WB* July 1893 p.1544 .

(English or German), while the papers as published in the other language were distributed among the assemblage.

The only papers read by their authors were by Dr. Wyatt of New York and Prof. Siebel of the Zymotechnic Institute of Chicago (which still thrives in 2023 as the Siebel Institute). Foreign brewers in attendance included more than a dozen from Germany, one from Odessa, Russia, and one from Wellington, New Zealand.[81] The papers were published later in *The Western Brewer* and other trade journals where they could reach a wider audience. In a similar way, Schwackhöfer wrote a detailed account of the advances in brewing science in America for his Austrian audience, but none of the descriptions of malting, brewing or refrigeration were dependent on his observations at the Exposition. While it is impossible to trace any specific change in brewing practices at any moment in time to a particular change at these meetings absent the specific testimony of a brewer, events like this likely increased enthusiasm for new research and technology and made adoption more likely.

Visitors to Chicago had no trouble finding American lager on the grounds of the exposition. Pabst had secured nearly exclusive rights for beer sales at the World's Fair and planned for 87 different beer stands. It was estimated that 'the counters over which [the beer] will be handed out will be more than two miles in length' and that the concession would be worth over $400,000.[82] Fellow Milwaukee brewer Miller Brewing Co., though not an exhibitor, won the contract to serve beer in the restaurant 'connected with the captive balloon exhibition on the World's Fair grounds,' an attraction that could carry 20 people to a height of 1,500 feet (457 m).[83]

For the brewing industry, the most memorable, as well as most notorious aspect of the World's Columbian Exposition was the evaluation of exhibited beers, which evolved into a

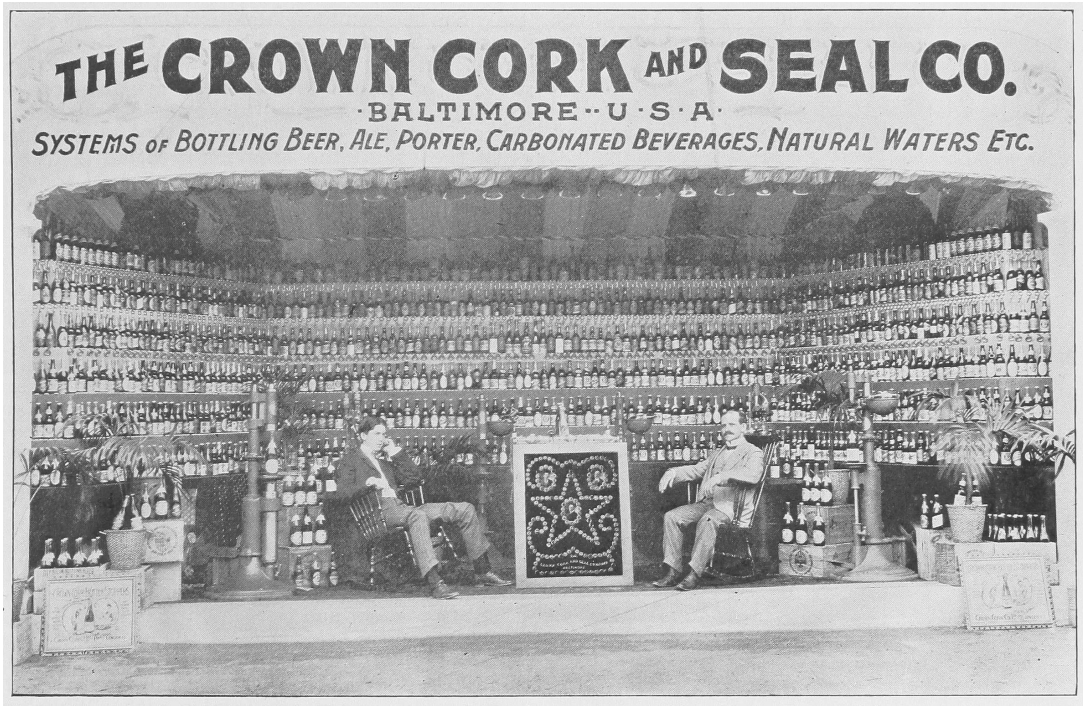


Figure 14. By 1900, when this photo was taken at an exhibition in their hometown of Baltimore, the crown cap seals of Crown Cork and Seal were used by breweries all over the world, as this jaw-dropping collection of bottles demonstrates. *WB* August 1900 p.333..

fierce competition. In general, expositions had a significant financial incentive to be generous in the awarding of medals because the chance of an award would make businesses more likely to spend the money and effort to create an exhibit. All beers that earned 80 points or more out of 100 would earn a bronze medallion and a parchment certificate. However, the original criteria were changed just before the judging began to include 20 points for 'commercial importance value,' which was widely believed to be a way to guarantee that Pabst, Schlitz, and Anheuser-Busch would end up at the top of the list. Furthermore, this also meant that the competition could no longer be a blind tasting and analysis, but would have to be at least partially open to judge the commercial importance.[84] Pabst and Anheuser-Busch both chose to make the event a referendum on which company brewed the finest beer in the world, even though the jurors' scores were supposed to be secret and the prizes were all the same. As events unfolded, Anheuser-Busch struck first by claiming that Budweiser had earned a higher score that Pabst Select (later called 'Blue Ribbon'). However, Pabst claimed that the chemical analysis was flawed and Select took the lead. Anheuser-Busch then threatened legal action and the judges altered their count again, only to have it reset in favour of Pabst and ruled as final over a year later.[85] Ironically, Select was not even Pabst's highest scoring beer (that was their Hofbrau), and Ireland's Guinness Stout and Germany's Erlanger both outscored the American flagship lagers.[86] Ultimately, the major exporting brewers sought publicity and accolades, and in this all were successful. Schlitz even claimed victory because their beers scored the highest the purity category.[87] While the publication of the judges' rankings allowed the public to see and discuss fine points of chemical analysis, any exchange of best practices in brewing was definitely subordinate to the quest for bragging rights.

Twilight: Paris, 1900; St. Louis, 1904

A combination of factors may have contributed to a decrease in emphasis on international expositions as a method of promoting beer and brewery equipment. This decline is noticeable in the newspaper accounts of the events, exposition publications, and more notably in publications like *The Western Brewer* — whose coverage of the 1900 Exposition Universelle in Paris and of the Louisiana Purchase Exposition in 1904 in nearby St. Louis was minimal compared to previous years. Many of the most notable advances in brew-





Figures 15 a & b. The medal from the Paris Exposition of 1900 was displayed prominently on Gund's advertising for several years. (The same medal appeared for decades on cans of Campbell's soup.) (Photos by Robert Fogt, collection of Tye Schwalbe, courtesy of University of Minnesota Press.)

ing technology--steam power, artificial refrigeration, the Crown cap — were well established and now in the refinement and application stages. Even as early as 1893, *The Brewers' Guardian* wryly observed about a similar event in England 'The fifteenth annual Trade Exhibition has come and gone, and by many is already forgotten.' The columnist attributed the lack of attendance and interest to the fact that 'novelties in this particular branch of the trade [brewing] ... are not forthcoming every year, at least not in numbers'.[88]

Furthermore, brewers were somewhat less attracted by the prospect of medals. The great exporting brewers already had enough accolades and their increasing commercial success was sufficient proof of quality. Adolphus Busch had become disenchanted with medals, and some of his competitors likely had similar feelings after the controversy in Chicago.[89] Smaller brewers continued to seek awards, at least in part to claim that the quality of their beers was equal to the best in the world. The John Gund Brewing Co. of La Crosse, Wisconsin was awarded a medal at Paris in 1900 and featured it in advertising signs for several years after.[90] Gund also earned a gold medal at St. Louis for what was described alternatively as 'excellence,' or 'purity,' or 'commanding superiority' in newspaper advertisements.[91] However, Gund's crosstown rival, G. Heileman Brewing Co., poked fun at Gund by proclaiming that the Heileman flagship, Old Style Lager, was the 'medalless beer' and that quality 'speaks for itself'.[92] It was difficult for brewers to tell how much difference awards made in their sales — which was the ultimate goal. The fairs of 1876 and 1893 were in the midst of or followed by economic depressions in the United States which made the effect difficult to measure. Other factors may have also been more important: Phillip Best (Pabst) experienced record growth after the 1878 medal in Paris, but the increase was more likely due to the expansion of bottled beer and the opening of new markets in the western United States.[93] Anheuser's lager was available in Paris before any awards were presented. American brewers were also increasingly distracted by the rise of prohibitionist legislation which had already rendered some parts of the nation dry.

Conclusion: beyond the backlit beer bottles

Expositions provided insight into how people perceived their culture and how they understood their dreams and achievements.[94] As Penelope Harvey noted:

Culture and technology were the objects of display, economic and political power the motivations for the very costly sponsorship of participation. Up until the First World War, such exhibitions were



Figure 16. This unusual coaster from the Ballantine Inn at the New York World's Fair could also be mailed as a postcard. (Author's collection).

defined not only by their scope but also by their optimism, their extravagance and their spirit of international competition.[95]

Beyond the nationalist and imperialist implications, the expositions displayed a world of innovation and plenty. World's Fairs have served as stages for technologies that were often used for spectacle and entertainment before they were widely applied in commercial use.[96] Therefore, the international expositions were spectacular showcases for the success of breweries and related industries. Breweries could impress the beer-drinking public with their application of technology to make more beer of better quality. Likewise, manufacturers of equipment could tout the novelty of their inventions to fairgoers while still targeting breweries directly at the event and through continued advertising afterward. While the purposes of the organizers were to present a spectacle, promote national pride, and to make money, the conditions they created encouraged the growth of knowledge around beer and brewing.[97] However, transfers of technical brewing information were more likely to occur out of the public eye in conferences held in conjunction with the expositions and through professional journals.

While it can be difficult to assess how much breweries learned from each other's exhibits, analysis of expositions clearly shows the intent to exhibit new developments in technology and marketing. Publications intended for the general public focused more on the rapid growth of a nation's brewing industry or that of individual firms, but this too was proof of the application of science and technology. Visitors could sample beers of other lands and regions, but it is not clear that they went home and demanded the newly discovered brands. American brewers of this period were most influenced by the beers of their homelands and, in contrast to the craft brewers of the 21st century, were unlikely to add a new product to their lineup based on enjoying it at an exposition (with the possible exception of Budweiser).

The widespread adoption of radio, movies, and television in the years after World War I made World's Fairs less necessary as a means of communicating the existence of new items and technologies. The public, as well as those involved in the industry, now had many other ways of finding out about new inventions and products.[98] But beer maintained a prominent presence on the grounds as a source of



Figure 17. Nearly three decades after the awarding of the last medal depicted, Anheuser-Busch was still using past laurels to guarantee the quality of their beer. (*LIFE*, 15 March 1937, p.77, GoogleBooks).

refreshment. Chicago's Century of Progress in 1933 and 1934 featured Pabst's enormous Blue Ribbon Casino, and Pabst joined Ballantine Brewing Co. of New Jersey and Heineken from the Netherlands among the breweries with lavish pavilions at the New York World's Fair of 1939. Displays of 'How Beer is Made' or spectacular exhibits by individual brewers became less common because of the expense compared to the potential return, but they continue in the 21st century on a smaller scale. For example, in recent years the Minnesota Craft Brewers' Guild has established a regular pavilion at the Minnesota State Fair which exhibits the raw materials, has a display of 'How Beer is Made' and hosts presentations by brewers, historians, and other experts. Flights of brews made by members of the Guild can be purchased at the exhibit, allowing the public to sample beers they may not have tasted before. In a small way, these types of exhibits echo the experience of fairs of an earlier century, but without the same sense of awe by the visitors. Breweries continued to tout their awards on labels generations after they earned them but since most of the large legacy breweries now are advertising lifestyle rather than quality, this too is fading.

British exhibition commissioner John Forbes Watson proclaimed in 1872 'The public — the exhibiting and the visiting public — are the real actors in the Exhibitions. The whole thing is done by and for them'.[99] Ultimately, the expositions were important as a snapshot in time of the state of industry and the values of the exhibiting nations and businesses. However, they were also crossroads in which brewers and their suppliers could meet and show off the progress that could be made with the application of science and technology to an ancient craft. The general public could learn about the beverage, but mostly welcomed its presence at the World's Fairs as a welcome refreshment.

Acknowledgements

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17. Russell, F. (1875) op. cit., p.565.

18. Vizetelly, H. (1874) op. cit., p.161.

19. ibid., p.163.

20. Hill, H. (ed.) (1877) op. cit., unpaged preface.

21. Vizetelly, H. (1874) op. cit., p.178. The identification of this brewery as Spanish rather than Catalan is Vizetelly's.

22. ibid., p.162.

23. ibid., p.163.

24. ibid., p.160.

25. ibid., p.159.

26. ibid., p.165

27. ibid., p.168.

28. ibid., p.159, 165.

29. ibid., p.169.

30. ibid., p.176-177.

31. ibid., p.171.

32. ibid., p.175, 176.

33. ibid., p.178.

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35. Charles Conrad v. Joseph Uhrig Brewing Company; testimony of Otto Lademan (1881) St. Louis Court of Appeals, Case No.1377, Missouri State Archives. (Thanks to Maureen Ogle for directing my attention to this testimony and providing a copy.)

36. Vizetelly, H. (1874) op. cit., p.170.

37. *The Carbon Advocate* (Leighton, Pennsylvania) 9 September 1876, p.2; *The Western Brewer*, September 1876, p.42. Ironically, this account is labeled as being reprinted from *The National Temperance Advocate*. The article used the favorable depiction of the Brewers' Building more to emphasize the power of the brewing industry over American culture and the insidiousness of the claim that malt liquors were healthy and the beverage of temperance.

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42. Ingram, J. (1876) op. cit., p.322.

43. ibid., p. 451.

44. ibid., p.322.

45. *The Western Brewer*, August 1876, p.12. As of 2021, $50 in 1876 would be worth about $1,470 according to measuring-worth.com, or about €1330 or £1140. (All inflation calculations in this article will be from measuringworth.com)
46. ibid., January 1878, p.1.
47. ibid., p.2.
48. ibid., pp.11, 13, 14, 15. Ads ended after page 18 but resumed on page 36; medals were also depicted on pp.37, 38, 40, 43, 44, 45, 53, 55, and 56, which was the last page of the issue.
49. ibid., pp.55 (Fisher), 53 (Cornell). A bung bush is a metal sleeve into which a bung (or plug) is hammered into the side of a beer keg. The inserter screws the bush into the hole in the wood.
50. *The Western Brewer*, September 1876, p. 42.
51. Wagner, R. (1994) op. cit.
52. *West Bend Democrat* (Wisconsin, USA), 8 March 1876, p.3; 19 July 1876, p.3.
53. Anon. (1876) 'L. Schade, '*Brewers' Hand-Book for 1876*. Washington, DC: The Washington Sentinel, p.151.
54. This subject is covered in more detail in Baron, S. (1962) *Brewed in America: A History of Beer and Ale in the United States*. Boston, MA: Little, Brown & Company, especially pp.219-246, and Cochran, T.C. (1948) *The Pabst Brewing Company. The History of an American Business*. New York, NY: New York University Press, especially pp.102-128.
55. *The Western Brewer*, April 1878, p.219.
56. ibid., July 1878, p.423.
57. ibid., July 1878, p.423. Emil Schandein was brother-in-law of Frederick Pabst and was vice president of Phillip Best Brewing Co.; Conrad Seipp was the leading lager brewer of Chicago.
58. *American Register* (London, UK), 13 July 1878, p.8.
59. *The Western Brewer*, July 1878, p. 423.
60. ibid., July 1878, p.423.
61. ibid., August 1878, p.501.
62. ibid., July 1878, p. 423.
63. *L'Exposition Universelle de 1878 Illustrée* (Paris) especially June 1878, p.578; August 1878, pp.745, 760-761. Other articles, such as in February 1878, p.396, provided logistical details to exhibitors. Online at https://gallica.bnf.fr/ark:/12148/cb42511822k/date1878, 02.19.2022.
64. *Der Amerikanische Bierbrauer*, November 1878, pp.359-361.
65. *The Western Brewer*, April 1879, p. 272. Interestingly, Henry Vizetelly was among the jurors again in Paris, but does not seem to have left the same type of account as he did from Vienna in 1873.
66. ibid., October 1878, p.660; *Der Amerikanische Bierbrauer*, November 1878, pp.363-364. It may not be a coincidence that Gustav Bergner was the only American among the officers of the International Brewers' Congress.
67. *New York Times*, 7 September 1878, p.5, in Ogle, M. (2019) *Ambitious Brew: A History of American Beer*. Middletown, DE: Blue Willow.
68. *The Western Brewer*, October 1889, p.1982.
69. ibid.
70. http://livinghistoryofillinois.com/1893_worlds_columbian_exposition_chicago_illinois.html
71. *The Western Brewer*, April 1893, p.825.
72. ibid., p.829.
73. Handy, M.P. (ed.) (1893) *World's Columbian Exposition 1893 Official Catalogue: Part 1. Agricultural Building and Dairy Building*. Chicago, IL: W.B. Gonkey & Co., pp.39-40, 210-211, 219-220, 238, 252, 255, 262, 290, 298, 313, 317, 323; *The Western Brewer*, May 1893, p.1038; June 1893, p.1283. *The Western Brewer* version adds five U.S. breweries but leaves out several nations.
74. *The Western Brewer*, July 1893, pp.1539-1540. ($5,000 in 1893 would be about $175,000, or €158,500 or £136,000)
75. ibid., July 1893, p.1539; August 1893, pp.1779-1780; December 1893, p. 2669. The terra cotta pavilion from the Pabst display was later moved to Milwaukee and attached to the Pabst residence. Frederick Pabst may have had this in mind from the beginning because the terra cotta in the residence and pavilion are a perfect match. Eastberg, J.C. (2009) *The Captain Frederick Pabst Mansion: An Illustrated History*. Madison, WI: University of Wisconsin Press 2009, pp. 84-85.
76. Schwackhöfer, F. (1894) *Bericht über die Amerikanische Brauindustrie auf der Weltausstellung in Chicago*. Vienna: Verlag der K.K. Central-Commission, p.3. Thanks to Dr. Jana Weiß for directing me to this volume. Interestingly, Schwackhöfer reported different totals for the brewers representing Germany and the U.S. from the other sources used here.
77. *The Western Brewer*, July 1893, p.1539; August 1893, pp.1779-1780. A unique item among the beers exhibited in Chicago was a very rare early example of a beer supporting a political cause. Ph. Zang Brewing Co. of Denver, Colorado featured a beer called 'Free Coinage'—supporting the populist goal of mandating free (unlimited) coinage of silver at the ratio of 16 ounces of silver to one of gold. The label also bore the legend 'Patronizing Colorado's Manufactures Insures Colorado's Prosperity.' *The Western Brewer*, September 1893, p.2015. The search for a specimen of this bottle continues.
78. *The Western Brewer*, June 1893, p.1287.
79. ibid., p.1288.
80. ibid., August 1893, p.1781. The same issue also contained the first ad for the Crown Cork caps, which included a page showing how to remove the caps with a variety of stunningly inappropriate tools guaranteed to maim the handler (pp.1852-1853).
81. ibid., June 1893, p.1315.
82. *Milwaukee Sentinel*, 9 February 1893, p.1. (about $14m or €12.7m or £10.9m)
83. ibid., 30 March 1893, p.3.
84. *The Western Brewer*, October 1893, p.2258; Ogle, M. (2019) op. cit., pp.90-91.
85. Ogle, M. (2019) op. cit., pp.92-96; Cochran, T.C. (1948) op. cit., pp.137-138.
86. *Milwaukee Sentinel*, 17 November 1893, p.5.
87. *Milwaukee Journal*, 18 November 1893, p.6.
88. *The Brewers' Guardian*, 7 November 1893, p.314.
89. Ogle, M. (2019) op. cit., p.96.

90. Advertising and the medal itself from the collection of Tye Schwalbe, depicted in Hoverson, D. (2019) *The Drink that Made Wisconsin Famous: Beer and Brewing in the Badger State*. Minneapolis, MN: University of Minnesota Press, pp.157, 464. Holding this medal was one of the early inspirations for this article.

91. A few examples among many include *Minneapolis Tribune*, 11 September 1906 p.9; 15 November 1906 p.8; *Omaha Daily News*, 26 September 1905, p.6.

92. *St. Paul Globe*, 16 April 1905, p.33.

93. Cochran, T.C. (1948) op. cit., p.138.

94. Cawleti, J. (1968) *America on Display: The World's. Fairs of 1867, 1893, 1933* cited in Schlereth, T.J. (1990) (ed.) op. cit., p.265.

95. Harvey, P. (1998) op. cit., p.140.

96. Adams, J. (1995) 'The Promotion of New Technology Through Fun and Spectacle: Electricity at the World's Columbian Exposition,' *Journal of American Culture*. 18.2, p.45.

97. Filipová, M. (2015) op. cit., Introduction.

98. Harvey, P. (1998) op. cit., p.140.

99. Cited in Geppert, A.C.T. (2010) op. cit., p.6.