The Great Holt Glass Myth: A Study of Misidentification

Bill Lockhart, Beau Schriever, Carol Serr, and Bill Lindsey with contributions by Bruce Silva, Warren Freidrich and David Whitten

There are numerous bottles basemarked with only the letter "H" below a three-digit number that are found in the West by archaeologists and collectors. These were undoubtedly made by a number of manufacturers, although the Holt Glass Works has been popularly identified with many of the marks. Current research has not carefully investigated these marks and possible companies. Our research and that of Bruce Silva shows conclusively that Holt could not have made the bottles with the "H" logos. Our conclusion provides a surprise ending.

Histories

Campbell Glass Works, West Berkeley, California (1884-1885) Campbell Glass Mfg. Co., West Berkeley, California (1885)

John Campbell and J.H. Flickinger built the Campbell Glass Works in West Berkeley, California, in 1884. The factory made "prescriptions, drug and chemical bottles, wines and beers." The plant became known as the Campbell Glass Mfg. Co. in 1885, but Campbell closed the plant in July over a dispute. The Holt Glass Works was built on the former Campbell site eight years later (Toulouse 1971:129-130; 231; Silva 2010a).

Both Jones (1965:[34]; 1966:15) and Toulouse (1971:129) noted a CGMCo mark, although only Toulouse ascribed the logo to the Campbell Glass Mfg. Co. We have been unable to find an example and suggest that the logo was probably misreported to Jones who passed the information to Toulouse. See the section on the Cohansey Glass Mfg. Co. for more discussion.

O'Neill Flint Glass Works, Berkeley, California (1886-1887)

Citing a "Bay area newspaper," Silva (2010a) noted: "January 15 1887 - O'Neill Flint Glass Works of West Berkeley burned and planned to be rebuilt." This suggests that the O'Neill plant had already been built. Since a reference (see below) suggests that a succeeding factory was built on the site, the O'Neill plant was probably not rebuilt. This was probably an intermediary factory between Campbell and Holt.

West Berkeley Glass Works (Holt), Berkeley, California (1893-1896)

The popular attribution of "H" marks to the Holt Glass Works is undoubtedly due to the account by Toulouse, who not only attributed to the factory a productive span of 13 years, but provided this colorful account of its demise:

Its final moments as a glass plant are known almost to the exact minute; it was completely destroyed during the earthquake of April 18, 1906, and never rebuilt (Toulouse 1971:231-232).

This account almost certainly confused the West Berkeley glass factory with Holt's later retail business in San Francisco. Actual evidence, however, is more compelling.

The West Berkeley Glass Works was established by William Holt on the site of the former Campbell Glass Co., Berkeley, California, in 1893. It is uncertain how successful it was, but it was short-lived. In May, 1896, the plant was closed "temporarily" due to the breaking of the melting pots, which the company had to import from the east. It seems likely that this circumstance strained the company's finances, because the plant was being sold at a sheriff's sale in August (Brothers 1952:256; Toulouse 1971:231; *Oakland Tribune* 1896; *National Glass Budget* 1896a; 1896b). We have found no record listing the products made at the plant.

It is highly unlikely that the factory ever reopened as a glass plant. A portion of the property was leased in January, 1897 for the manufacture of soda carbonates. In May, 1906, "the old Berkeley glass works ... after a long period of idleness" was leased to three San Francisco manufactures (not glass makers) who were burned out following the San Francisco earthquake (*Oakland Tribune* 1897; 1906).¹

¹ Brothers (1952:256) stated that "the works were in operation at the time of the San Francisco earthquake which occurred on the morning of April 18, 1906, but it was never subsequently used, due to its structure having been rendered unsafe for the further production of

William Holt, San Francisco, California (1900-1906)

City directories indicate that Holt himself, who continued to live in Berkeley, worked in San Francisco from at least 1899 until 1906. His San Francisco business was listed in the 1905 directory as "Prism Glass, plate and window glass." This was evidently the business that was destroyed in the quake. Since the account of the 1906 Berkeley lease (see above) mentioned that the new occupants intended to use "the building," the old glass factory structure must have been still standing.

Silva (2010c) quoted a pamphlet entitled "San Francisco: Her Great Manufacturing, Commercial and Financial Institutions are Famed the World Over," published by the Pacific Art Co., San Francisco, 1904. In discussing prism glass, the pamphlet noted that "one of the largest exponents of this art work and handicraft is W. Holt, with an extensive factory at 280 Stevenson St. Mr. Holt . . . for some five years has made a specialty of prism glass manufacturing." The 1910 census listed Holt as "glass merchant" – suggesting that his manufacturing days were over. William Henry Holt died on October 28, 1919, at San Francisco.

Given the foregoing evidence (limited though it is), a healthy skepticism seems warranted in regard to the many "H" marked bottles found throughout the West and attributed to Holt. The factory was in production for only three years; it seems to have appeared rarely in glass trade journals or the local press; and we have found no ads for it. And given that the breaking of the pots – a circumstance faced and overcome routinely in glass plants of that time – spelled its actual demise, it is fair to wonder how productive it really was. Finally, we have so far found no contemporary evidence that Holt ever made bottles – only prism glass.

The Heunisch Connection

Although we will discuss this in more detail in the Discussion and Conclusions section, we hypothesize that the Illinois-Pacific Glass Co., under the direction of Adam Heunisch, manufactured the bottles with the "xxx / H" basemarks between 1902 and 1907, with a probable extension as late as ca. 1911. We present a history of the ancestral firms of Illinois-Pacific here.

glass." Unfortunately, Brothers failed to cite his source for this information.

Abramson-Heunisch, San Francisco, California (1893-1902)

Our story begins with the firm of Abramson & Bacon (Edward Abramson and Gaston E. Bacon), chemists and druggists, listed in a yearbook of the University of California (1878:90) in 1878. According to the San Francisco city directory, the store was located at the southwest corner of Dupont and Sutter by 1880, with a second location at 717 Clay St. (Figure 1). Although the principals became involved in other pursuits (see below), the drug store remained until



Figure 1 – Abramson & Bacon bottle (eBay)

Charles A. Bayly purchased the business upon Bacon's retirement in 1888 (*Western Druggist* 1888:111).

In 1881, a pill-box salesman (possibly dealing more broadly in bottles and bottling supplies) named Adam Heunisch joined with the druggists to form Abramson, Bacon, & Heunisch – wholesale druggists' and bottlers' supply.² They soon became importers of various types of bottles – including wine, whiskey, mineral water, beer, flasks, panel extract bottles,

preserve jars, and other container types – from Gerresheimer Glashuettenwerks (see the Hermann Heye section for more on Gerresheimer), the Illinois Glass Co., and other Eastern glasshouses. In early 1893, Bacon sold half of his interest to the Armstrong Cork Co., the other half to the Illinois Glass Co. The remaining partners renamed the firm the Abramson-Heunisch Co. (Byington & Lewis 1931; Jones 1965; Quinn 2002:x-xi; Toulouse 1971:268).



Figure 2 – Abramson & Heunisch (Pacific Art Co. 1901:303)

 $^{^{2}}$ It is possible that only Abramson teamed up with Heunisch initially. Quinn (2002:x) claimed that Bacon joined the firm in 1883.

About 1896 Abramson-Heunisch partnered with the Illinois Glass Co. to open an office in Chicago as the U.S. Bottlers & Supply Co., but Illinois Glass acquired the Abramson-Heunisch share of the firm two years later (Figure 2). In 1898, possibly using funds from the Chicago sale, Abramson-Heunisch purchased a two-fifths interest in the San Francisco & Pacific Glass Works, entering the production end of the glass business (see the



Figure 3 – Abramson-Heunisch Glass Co. card (icollector.com)

section on SF&PGW – in the "S" volume – for more on that firm). They followed up the following year, obtaining the rest of the glass house business and becoming the Abramson-Heunisch Glass Co. (Figures 3 & 4).³ The firm built a new plant at 15th and Folsom in late 1899 or early 1900 (Jones 1965; Toulouse 1971:268).

In a merger with the Illinois Glass Co., the firm incorporated as the Illinois-Pacific Glass Co. in 1902. Adam Heunisch was the first president of the new corporation, with Edward Abramson as vice president. At some point, Heunisch became a vice president (Jones 1965; Toulouse 1971:268). The San Francisco Call reported

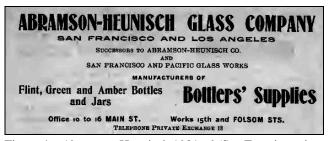


Figure 4 – Abramson-Heunisch 1901 ad (San Francisco city directory 1901:2035)

on January 11, 1908, that Adam Heunisch had committed suicide shortly after 6:00 PM the following day. Heunisch poisoned himself in a bout of despondency after he had made several unwise stockmarket decisions right before a crash in the market. Not only had he lost his fortune, he was in danger of losing his home. For more on the Illinois-Pacific Glass Co., see the section on that firm.

³ A trade card for the Abramson=Heunisch Glass Co. (using the equals sign) noted that the plant was "Established 1863." The date, however, was for the San Francisco Flint Glass Works, an ancestral company to the San Francisco & Pacific Glass Co.

Containers and Marks

Sorting out basemarks with a single "H" – with or without numbers – is an almost insurmountable task. As noted in other sections, the W.H. Hamilton Co., Hart Glass Mfg. Co., Hazel Glass Co., Hazel-Atlas Glass Co., H.J. Heinz Glass Co., and Hemingray Glass Co. *all* used the letter "H" to mark bottles and/or jars. Hazel, Heinz, and Hemingray also used numbers in conjunction with the "H" logo. Although we will explore the various combinations of "H" marks and numbers in the following study, our primary concern is to find the glass house that made numerous soda, whiskey, and other bottles found in the U.S. West in contexts from ca. 1900-ca. 1910 or slightly later.

{number} / H

Thomas (1998) noted that liquor bottles made by Holt "have their coding on the base of these bottles.⁴ It always appears as a number with the letter 'H' underneath." He showed twoand three-digit numbers only and illustrated an example with the {number} / H embossed horizontally across the center of the base. Thomas (1998) suggested that the "coding has nothing to do with the type of glass, or date the bottle was made. It is only a reference to the style of the bottle. There is a possibility that this coding can also tell if the bottle is a slugplate of a private mold." The numbers shown in his table correspond to specific companies and bottle styles. We concur with Thomas that numbers identify special orders for customers, and numbers on unembossed containers probably indicate bottle styles (i.e. catalog numbers).

We have a series of flasks made for Gulley's Family Liquor Store, Portland, Oregon, in quart, pint, and half-pint sizes. The bases were embossed in sequence from quart to half-pint "591 / H," "592 / H," and "593 / H." This makes the identification of the numerals as model numbers almost certain (Figures 5 & 6). According to Thomas, the Gulley family opened the business in 1906 continued to operated until Oregon Prohibition closed the operation in 1915. Gulley opened a second store at 304 1st St. in 1908, not closing that branch until 1911.

⁴ Although we dispute the Holt identification, we will use the term in this section, since that has heretofore been the common identification. See the Discussion and Conclusions section for a deliberation on the topic.

Elliott and Gould (1988:113, 127, 136, 138-139, 144, 155-156, 189) listed nine examples of the {number} / H mark, and Fowler (1998:15, 22-24, 26, 37, 41, 43, 50, 69, 72-73) added 15 more. Miller (2008:19, 68, 83, 100, 142) illustrated five bottles with the same "H" mark – although with different numbers (Figure 7). Markota and Markota (2000:30, 38, 48, 53, 97) listed five numbers found on Hutchinson bottles as well as the letter "H" with no numbers and two other slight variations. Colcleaser (1965:35, 56; 1966:14, 32-33) showed bottles with the typical mark (e.g., 423 / H). McCoy (n. d.:2) illustrated



Figure 6 – Gulley's base

two marks from the Tom Kelly Bottle

House, Rhyolite, Nevada, and we have added several more from the same place. All of these were embossed on bases of beer or Hutchinson soda bottles. These bottles included both plate and side

embossed varieties. An observation of bottle base photos from the Kelley walls, taken by Bill Lindsey, showed that the "H" in the marks is not uniform. Some are vertically elongated, while others are of "normal" proportions. All, however, used sans serif fonts (Figure 8).

All sources but McCoy included date ranges for individual bottles and/or companies that used them (i.e., not dates for the marks). In general, these date ranges fit within or overlapped the Toulouse dates for the Holt Glass Works. However, a few exceptions in both Fowler (1998) and Elliott and Gold (1988) were too late for the Toulouse date range for Holt. McCoy (n. d.:2) suggested three possible manufacturers for the mark: Holt Glass Works (1893-1906), Hart & Co. (1889-1918), and Dunkirk & Co. (ca. 1900). Other sources only mentioned Holt.



Figure 5 – Gulley's flasks



Figure 7 – H logo (Robert Hines)

Indeed, Toulouse (1971:232) noted that the Hart Glass Mfg. Co. used an "H" mark from 1918 to 1938. The company was the Fletcher Hart Co., Bellaire, Ohio, from 1879 to 1882; Maring, Hart, & Co. (also in Bellaire) from 1889 to 1918, and the Hart Glass Mfg. Co., Dunkirk, Indiana, from 1918 to 1938 (see the section on Hart Glass for



Figure 8 – H logo (Tom Kelly bottle house)

more information on

that firm). Even if the earlier Hart enterprises used the "H" to mark their wares, it still would not explain why the bottles are so prevalent in the West and will not fit the temporal range for these bottles.

We also found an oddity in the Fort Stanton bottle collection that should be noted. One 12-ounce, mouth-blown, crown-finished beer bottle

was embossed "772 / H" on the base with "ABCO" on the heel. This bottle was made by the American Bottle Co., and their mold/catalog numbering system could easily be mistaken for a



Figure 10 – ABCo heelmark

Holt bottle, especially if only the base were found. This is especially possible, as the "ABCO" mark is often faint on the heel. The placement of the numbers and letter, however, was slightly different. In the American Bottle variation, the number was horizontally embossed across the center of the base, with the "H" centered in the lower half. The alleged Holt marks are evenly centered as a whole unit on the base (Figures 9 & 10).

Figure 9 – ABCo bottle

H / {number}

Toulouse (1971:231) showed this mark with an emphasized (i.e., bold or "thick") "H" above a two-digit number, dated the mark 1893 to 1906 (his Holt dates), and noted that "the numerals vary with the bottle." He admitted that several companies used the "H" mark, but, "if the bottle or jar also carries the name of a western company as a user, and fits the period of years, it is probably a Holt bottle." As noted in the history section (above), it is highly unlikely that Holt made any bottles. Pollard (1993:56-57, 129, 136) illustrated a crown-top soda bottle from Plattsburg, New York, with a post-bottom base embossed "H / 1192." The finish was tooled. He noted that the brewery that used the bottle was in business at Plattsburg from 1900 to 1915.

This configuration is found on some Heinz bottles (e.g., Zumwalt 1980:226, 231), and we have recorded an H above a single-digit number on at least one bluing bottle. To further complicate the issue, jars made by the Hazel Glass Co. were sometimes marked in this format (H / {number}) from ca. 1886. The marks were also used on jars made by Hazel's successor, Hazel-Atlas Glass Co. from 1902 to at least the 1930s (Caniff 2001:6-7).

Buchner et al. (2007:235) recorded two white, milk-glass jars with these marks. One was embossed "H / 12 / dot" in a circle (presumably on the base). We suspect the circle was a post bottom or simply an indentation. The other jar was recorded as: "interior: 'H' over '984"" (presumably on the inside bottom of the jar. The report attributed the marks to the Hart Glass Mfg. Co., citing Toulouse. Since these jars were found in Memphis, Tennessee, Hart is a much more likely manufacturer than Holt (although the mark may have been used by another "H" company).

{number} H

Colcleaser (1966:16) showed a whiskey pint with a "brandy" finish, embossed with "697 H" on the base. We have recorded a distilled water bottle from San Diego embossed on the base with "656 H." The Hemingray Glass Co. made water bottles during the 20th century, although the typical number was "H 510." See the Hemingray section for more information. We have also observed a Schnepp Bros. Silver Gate soda bottle from San Diego, California, marked "782

H," also on the base. In addition, we have a King Soloman's Bitters bottle embossed with "384 H" on the base, probably dated ca. 1910, although Ring (1980:283) did not list that variation.

This mark is also listed by Markota and Markota (2000:22). However, it is likely that the "657-H" mark is a typographical error for "657 / H." The authors attributed the mark to the Holt Glass Works, although they dated its use on the California Bottling Works Hutchinson containers from 1905 to



Figure 11 – 71 H (Tuscon Urban Renewal collection)

1913. We also found a "71 H" basemark on a beer bottle from the Tucson Urban Renewal collection at Tucson, Arizona (Figure 11).

Except for the water container, all of these bottle types are consistent with ones bearing the {number} / H configuration, currently attributed to the Holt Glass Works. It is entirely possible that the company that made the molds periodically failed to use the prescribed format. Thus, both styles may be tentatively assigned to same glass house.

H {number}

This format, an "H" followed by a two-digit number embossed horizontally across the bottom of a round base, was found in the Tom Kelly bottle house at Rhyolite. The H {number} format was also used by the Hemingray Glass Co. on beer bottle bases, along with the H - {number} configuration (Bob Stahr personal communication, 2006; Whitten 2007). Like the marks above (H / {number}), jars made by the Hazel Glass Co. were sometimes marked with H {number} from ca. 1886. The marks were also used on jars made by Hazel's successor, Hazel-Atlas Glass Co. from 1902 to at least the 1930s (Caniff 2001:6-7).

Colcleaser (1965:81) showed an "H10" mark on the base of an H. J. Heinz food bottle. Eastin (1965:36) also showed the same bottle in her Heinz section (Figure 12). Other Heinz bottles have identifying numbers embossed on their bases but no letters. Some have the Box O mark of the Owens Bottle Co. or the H-over-A of the Hazel-Atlas Glass Co. along with the Heinz



Figure 12 – H 10 Heinz bottle (eBay)

number. We have not found this configuration on bottles that suggest a use by companies other than Hemingray and Heinz (see those sections for more information). Note that Hemingray beer bottles with this configuration were all machine made.

H - {number}

Whitten (2007) and Stahr (personal communication, 2006) noted that this configuration was used by the Hemingray Glass Company, Muncie, Indiana, ca. 1924-1935. The configuration especially appeared on beer and soda bottles. Heinz food bottles were also made in this format. See Heinz and Hemingray sections for more information.

Η

Toulouse (1971:232) reported a lone "H" used by the Hart Glass Mfg. Co. from 1918-1938. If his dates are correct, the mark should only appear on machine-made bottles. Also see the section on Hart.

Herskovitz (1978:8) listed an "H" mark but noted no accompanying numbers. When the Bottle Research Group visited Fort Bowie, we discovered a ginger or bluing bottle with the serif H basemark (Figure 13). Although he attributed the mark to Holt, the "H"



Figure 13 – H on ginger oval (Fort Bowie)

almost certainly indicated the bottling firm. David Whitten reported a similar bottle from a Midwestern context and Jay Hawkins noted finding them in Pittsburgh. These "ginger oval" bottles are practically identical to the a bottle illustrated in Wilson (1981:80), found at Fort Union, New Mexico (1865-1891).

Wilson's bottle had a paper label noting that it was a scalp treatment made by Ruben P. Hall and was embossed on the base with an "H." The serif "H" on the base very likely indicated Reuben P. Hall. Similar bottles had a sans serif "H" basemark, probably also an indication of



Figure 14 – H on ginger oval (Fort Riley)

Hall. The Bottle Research Group also found these bottles at Fort Riley, Kansas (Lockhart et al. 2012:29-30 – Figure 14).

Markota and Markota (2000:18, 32, 62) recorded "H" marks with no accompanying numbers on Hutchinson bottle bases. Date ranges for two of the marks fall into the 1902-1910 range, but the final one, from T. Hilderbrand, extended from 1884 to 1888. The Hilderbrand mark almost certainly represents the bottler rather than the maker. The other two may be manufacturer's marks, as they seem unconnected with either the Bradley Springs Water Co. or the Crystal Bottling Co. None of the listed owners of the bottling companies had names beginning with the initial "H."

Discussion and Conclusion

Silva (2010b), along with both Lindsey and Schulz, questioned whether the "H" marks were used by Holt and noted that the sheer volume of bottles with the {number} / H marks known to exist is staggering. The idea that a small factory, only open for a few years, could produce the large number of bottles that have survived stretches credibility. In addition, Holt apparently did not advertise. However, virtually all bottles with the {number} / H basal configuration were used by companies on the West Coast or from nearby states (e.g., Arizona and Nevada). The absence of any other West Coast glass house beginning with "H" is problematic to say the least.

The best duration of the Holt Glass Works from historical sources is 1893 to 1896, and all examples of bottles we have seen, along with the excellent descriptions from Thomas (1998, 2002), indicate that Toulouse was in error as to the placement of the parts of the mark. The twoor three-digit number was always embossed horizontally across the center of the base of the bottle with the letter "H" centered just below it.

McCoy's alternative companies (Hart & Co.; Dunkirk Co.) as possible users of the "H" marks are unlikely candidates. Although Toulouse reported that the Hart Glass Co. used the mark from 1918 to 1934, that is much too late for bottles found at the Tom Kelly bottle house (built in 1906), unless these were replacement bottles added at a later time. However, since there are quite a few bottles with the mark, they were likely part of the original group. We have

found no references to a Dunkirk Co. as a glassmaker, although Dunkirk, Indiana, was the location of the Hart factory. Assuming the Toulouse dates are accurate, Hart may also be excluded as a maker of mouth-blown bottles with "H" basemarks.

Researching a mark that consists of only a single initial is difficult. The list of companies beginning with "H" is daunting. Toulouse (1971:613-614), alone, listed 25 companies that were involved in glass production (as well as other individual names and related companies). Thus, we have not attempted to include all possible companies beginning with "H" in this assessment.

Because of the known or accepted use of several configurations by more than one company (Holt, Heinz, and Hemingray, for example), as well as the occasional use of one or more formats by other glass houses (e.g., a basemark with the {number} / H configuration with a heelmark of ABCO), notably the American Bottle Co., all identification should take into consideration the style of bottle, manufacturing characteristics, and possible age as determined by the end-user (e.g., brewery, soda bottler, etc.) when identifying a bottle maker.

Age of the bottles is another matter of contention. Lindsey (one of the authors) suggested that some bottles with the {number} / H marks appear to be of more recent origin than 1906. This problem is compounded since historical sources place a final date for Holt at 1896. Increasing circumstantial evidence makes it unlikely to the point of impossibility that Holt could have been the user of the mark.

Our task centers around a glass house that meets four criteria. The factory must be one that: 1) made bottles for sale in the U.S. West (that likely means that the factory was also located in or near the West); 2) was sufficiently large to produce the numbers of known bottles; 3) made whiskey, soda, and beer bottles; and 4) was open during the ca. 1900-1910 period, possibly a few years earlier or later – but certainly during the 1900-1910 decade.

We conducted a comprehensive search for Western glass houses beginning with the letter "H" during the 1895-1915 period. Even extending our search as far east as Nebraska, Kansas, Oklahoma, Texas and eastern Missouri turned up no results. As noted above, the Holt Glass Works is simply a misidentification, but there are no alternatives – with one possible exception. Adam Heunisch was the guiding force behind the Abramson-Heunisch Co., making bottles from 1893 until the firm became the Illinois-Pacific Glass Co. in 1902. Heunisch was the first president of Illinois-Pacific from 1902 until 1907, the year before he died. Heunisch begins with the letter "H" and was in the right place at the right time.

To explore this more fully, we do not know what products Abramson-Heunisch made at the former San Francisco & Pacific Glass Works, but we can hazard an educated guess. Since Abramson-Heunish was a jobber in soda, beer, and whiskey bottles, and its predecessor made similar containers, it is logical to assume that the glass house produced those items under the Heunisch management. We have not discovered any bottles with an "AH" logo or any other identifying mark that would indicated Abramson-Heunisch. Thus, we can hypothesize that Heunisch had his initial embossed on molds for Abramson-Heunisch products.

We also know that molds were the most expensive components of the glass container manufacturing process and that virtually every glass house continued to use molds until they wore out. When Heunisch and his associates formed the Illinois-Pacific Glass Co. in 1902, they would almost certainly have continued to use the molds remaining from Abramson-Heunisch. With Heunisch in the presidential seat from 1902 to 1907, he could easily have continued using an "H" logo on bottle bases from that firm, possibly by simply ordering molds from the same mold maker and failing to tell him any differently. After the retirement (or death) of Heunisch in 1907/1908, Illinois-Pacific would have continued to use the same molds until they wore out.

In attempting to date bottles with the Illinois-Pacific IPGCo logos, we were unable to find any made during the 1902-1910 period. Equally interesting, Hutchbook (Fowler 2016) does not list any IPGCo marks on Hutchinson soda bottles, typically popular during that period. Von Mechow (2016) only listed three bottles with IPGCo markings on them, two sodas, one beer. One had a "cork" finish, while the other two had crown finishes. However, we know from the 1916 Illinois-Pacific catalog that the plant made bottles of these types (for more on the firm, see the Illinois-Pacific section in the "I" volume or Lockhart et al. 2005).

As a single example that is representative of relevant bottle books, Miller (2008:11, 19, 65, 66, 68, 83, 100, 142) illustrated, dated, and discussed five bottles with the {number} / H logo

and three with the Diamond-IPGCo mark.⁵ Those with the "H" logo encompassed a date range of 1899-1906, while the Diamond-IPGCo marks were used during the 1912-1918 period. It is important to note that Miller was dating the use of the bottles by local Arizona bottlers rather than by logo. He may have been biased by the Toulouse date range for the "H" logo, but there is no reason to suspect a bias for the IPGCo mark. Toulouse and others had dated the latter mark 1902-1925.

Elliott & Gould (1988:144-145, 154, 188-189) provided additional support. The Lahaina Ice Co. on Maui used bottles embossed "323 / H" and "347 / H" ca. 1908-1909, then switched to bottles embossed "PCGW" (Pacific Coast Glass Works). This suggests that the Lahaina firm switched to another glass house at the end of the "H" period – possibly due to the death of Heunisch. Markota & Markota (1999:22, 36) also showed this migration to Pacific Coast Glass Works bottles.

Even more striking, the Honolulu Brewing Co. used a bottle embossed "664 / H" on the base ca. 1911, but the firm changed names slightly – Honolulu Brewing & Malting Co. – and used bottles embossed I.P.G.Co. in a diamond or IPGCo in a diamond shape from ca. 1911-1917. This is the only direct connection we have found between the "H" logos and "IPGCo" marks.

While the identification of Heunisch remains hypothetical, the explanation fits with the use of the letter "H," includes a firm with a large production capacity, that made the right kinds of bottles during the correct time period – and we have found no other glass house that fits the requirements. Although this resolution may raise the hackles of some researchers, it is important to remember the words of Sir Arthur Conan Doyle's famous detective, Sherlock Holmes, who said, "When you have eliminated the impossible, whatever is left, no matter how improbable, is correct." In the end, we are left with the question: If not Heunisch, who?

⁵ We selected Miller as the example because one of the authors has worked extensively with him and has been impressed with the quality of his research.

Acknowledgments

We would like to thank Bob Saunderson, reference librarian at the Berkeley Public Library, Berkely, California, for providing us with helpful information from the Berkeley city directories. Thanks, too, to John Aronavici for checking sources at the Berkeley Historical Society and to Bob Stahr for sharing his knowledge about bottles made by the Hemingray Glass Co. Additional gratitude to Greg Spurgeon for letting us use the North American Glass photos and to Doug Leybourne for allowing us to reproduce drawings from the Alice Creswick books. Finally, a bouquet of thanks to Wanda Wakkinen for proofreading.

Sources

Brothers, J. Stanley 1952 "Early Glassmaking in California." *Glass Industry* May.

 Buchner, C. Andrew, Eric Albertson, Carl E. Brown, and N.C. Kaplan
2007 Lamar Terrace Treasure: Data Recovery Excavations at Site 40SY695, Memphis, Tennessee. Panamerican Consultants, Inc., Memphis, Tennessee.

Caniff, Tom

2001 "The Hazel-Atlas Story." In *Fruit Jar Annual: The Guide to Collecting Fruit Jars*, Vol. 6. Privately published by Jerome J. McCann.

Colcleaser, Donald E.

1965 Bottles of Bygone Days. Privately Published, Napa, California.

1966 Bottles of Bygone Days, Part II. Privately Published, Vallejo, California.

Eastin, June

1965 Bottles West, Vol. I. Press-tige, Ontario, California.

Elliott, Rex. R. and Stephen C. Gould

1988 Hawaiian Bottles of Long Ago. Hawaiian Service, Inc., Honolulu.

Fowler, Ron

1998 *Ice-Cold Soda Pop 5¢: An Illustrated History of Oregon Soda Pop Bottling.* Privately published, Seattle, Washington. [Revised version of the 1986 edition]

2016 "Hutchinson Bottle Directory." Seattle History Co., Hutchbook.com. http://www.hutchbook.com/Bottle%20Directory/

Giarde, Jeffery L.

1980 *Glass Milk Bottles: Their Makers and Marks*. Time Travelers Press, Bryn Mawr, California.

Haynes & Co., D. O.

1900 *The Era Blue Book: A Universal Price List and Directory of Manufacturers for Drug Trade Buyers.* D. O. Haynes & Co., New York.

Herskovitz, Robert M.

1978 Fort Bowie Material Culture. University of Arizona Press, Tucson.

Jones, May

1965 The Bottle Trail, Volume 5. Nara Vista, New Mexico.

Lockhart, Bill

1999 "From Barrett's Jersey Dairy to City Dairy: Otero County Dairies 1889 to 1977." *Pioneer* 2(3):1-22.

2001 You Can Whip Our Cream, But You Can't Beat Our Milk: The Dairies of Otero County, New Mexico, 1889 to 1977. Townsend Library, New Mexico State University at Alamogordo. http://alamo.nmsu.edu/~lockhart/AlamoSod/index.html

Lockhart, Bill, Bill Lindsey, Beau Schreiver, and Carol Serr 2012 *New Insights from the Bottles Excavated at the Fort Riley Hospital Privy*. Privately printed, Alamogordo, New Mexico.

Lockhart, Bill, Michael R. Miller, Bill Lindsey, Carol Serr, and David Whitten 2005 "The Dating Game: Illinois Pacific – A Division of the Illinois Glass Co." *Bottles and Extras* 16(4):73-80.

Markota, Peck, and Audie Markota

1993 *Western Blob Top Soda and Mineral Water Bottles*. Privately published, Sacramento.

1999 *A Look at California Hutchinson Type Soda Bottles*. Privately Published, Sacramento, CA.

McCoy, Susan

n.d. "65 Different Bottles Used in Tom Kelly's Bottle House." Unpublished manuscript for BLM.

Miller, Michael R.

2008 A Collector's Guide to Arizona Bottles & Stoneware: A History of Merchant Containers in Arizona. 2nd ed. Privately Printed, Peoria, Arizona.

National Glass Budget

1896a "General Glass Notes." National Glass Budget 12(4):2.

1896b "General Glass Notes." National Glass Budget 12(12):2.

Pacific Art Co.

1901 Men of California. Pacific Art Co., San Francisco.

Pollard, Gordon

1993 Bottles and Business in Plattsburgh, New York: 100 Years of Embossed Bottles as Historical Artifacts. Clinton County Historical Association, Plattsburgh.

Quinn, Tom

1998 "The German Connection." In *Whiskey and Liquor Containers from the State of Oregon* by John L. Thomas. Privately published, Soquel, California.

Ring, Carlyn

1980 For Bitters Only. Nimrod Press, Boston.

Thomas, John L.

1998 Whiskey Bottles and Liquor Containers from the State of Oregon. Privately printed.

2002 *Whiskey Bottles of the Old West*. (Revised & Updated Edition). Boyertown Publishing Company, Boyertown, PA.

Toulouse, Julian Harrison

1971 Bottle Makers and Their Marks. Thomas Nelson, New York.

Silva, Bruce

2010a "Extra, Extra - Read all about it!" *Western Whiskey Tool Top Gazette* February 26. http://www.westernwhiskeytooltopgazette.com/2010/02/extra-extra-read-all-about-it.html

2010b "Ladies and gentlemen of the jury; have you reached a decision?" *Western Whiskey Tool Top Gazette* March 4.

http://www.westernwhiskeytooltopgazette.com/2010/03/ladies-and-gentlemen-of-jury-ha ve-you.html

2010c "William Holt; The man behind the myth." *Western Whiskey Tool Top Gazette* March 13.

http://www.westernwhiskeytooltopgazette.com/2010/03/william-holt-man-behind-myth.h tml

University of California

1878 Register of the University of California, 1878-79. Berkley.

Von Mechow, Tod

2016 "Soda & Beer Bottles of North America: Bottle Attributes - Beer & Soda Bottle Manufacturers." http://www.sodasandbeers.com/SABBottleClosures.htm

Western Druggist

1888 "State Items." Western Druggist 10(3):111-114. [March]

Whitten, David

2007 "Glass Factory Marks on Glass." http://www.myinsulators.com/glass-factories/bottlemarks.html

Wilson, Rex

1981 Bottles on the Western Frontier. University of Arizona Press, Tucson.

Zumwalt, Betty

1980 *Ketchup Pickles Sauces: 19th Century Food in Glass.* Mark West Publications, Fulton, California.

Last updated 4/25/2016