

A Study of 16 Counterfeit CBHs from the Glazer Collection

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Background:

Throughout my studies of circulating contemporary counterfeit (CCC) Capped Bust half (CBH) dollars I have learned that you cannot always determine authenticity by visual evaluations alone. I know this first-hand after purchasing CBHs which I thought were counterfeit based on visual appearance only to find out later that they were indeed authentic and had experienced a certain level of post-mint damage. As a result, in order to best resolve the question of authenticity each suspicious piece should be measured and scientifically analyzed in order to improve the level of confidence surrounding authenticity.

My research and analysis of CCCCBHs began through XRF analysis of the planchet alloys in order to identify relatively accurate metallurgical compositions of each piece. Such analyses quickly resolved the question of authenticity while providing additional information on the metals and their relative proportions used in such alloys. However, having moved away from the lab where I conducted XRF analysis, I have since had to fall back on alternative methods of evaluating authenticity. In turn, the next closest option was measuring the specific gravity (SpG) of CCCCBHs. Specific gravity can provide a more general understanding of the density of alloys to determine authenticity.

Until now, I have personally handled and studied almost 90% of the known hand-made die struck CCCCBH varieties, but only about 50% of the transfer die varieties, and even fewer casts or suspected cast counterfeits. Given that transfer die and cast counterfeits are copy-counterfeits, those which directly copied a mint-struck coin, discerning their production methodology from visual, photographic appearances alone can be tricky and inconclusive. Some pieces which look cast, may in fact just be environmentally altered transfer die counterfeits, whereas some pieces which look like high-quality transfer die counterfeits may in fact be casts. Yet, on some occasions the qualities of a suspected copy-counterfeit can be so close to the genuine coin that it actually turns out to be a genuine coin! These questions were all aspects I wanted to test in studying a sample of 16 pieces from the Mark Glazer collection of CCCCBHs. Specifically, these were pieces in which I could not come to a more accurate conclusion of authenticity and production methodology from a visual, photographic interpretation, and instead this required me studying the pieces in-hand, scientifically.

Methodology:

Several attributes were identified as important to record in conducting such analysis. This included documenting the date, Davignon variety, edge type, dry weight in grams (g), wet weight (g), calculated SpG, suspected alloy, Overton variety (if known), other aspects, and the final results. Pieces were organized chronologically by date followed by Davignon variety.

The edge type was studied first. This was either recorded as plain edge (PE), lettered edge (LE), lettered-reeded edge (LE-RE), or more specifically describing the edge type and design.

Next, the dry weight was taken. This was measured to the hundredth of a gram using a digital scale. This measurement is important for the precision upon which the final SpG would be measured.

The wet weight was measured by taking a cup of water which was wider and deeper than the half dollar to be measured, placing that on the digital scale, and taring the weight of the scale to zero. The coin to be measured was then tied with cooking twine and then fully immersed in the water. The coin was never to touch the sides or bottom of the cup. The weight of the submerged coin was recorded. The coin was then removed from the twine. The saturated twine without the coin was then re-submerged in the water, and that weight was recorded. The weight of the submerged twine was then subtracted from the coin-twine submerged weight, and that was the final wet weight. This method for measuring wet weight is relatively precise, but contains a small amount of error which should be considered if results are not exactly as expected.

In order to calculate SpG, the wet weight was divided from the dry weight. These resulting values were then compared against known SpG standards for 90% silver and 10% copper coins as produced by the Philadelphia Mint, as well as alloys used by counterfeiters of CBHs from this period including German silver, copper, and brass (Table 1).

Table 1. Planchet Alloys Used in Genuine and Counterfeit U.S. Coins

Alloy	SpG
90% Ag	10.31-10.34
German silver	~8.58
Copper	8.92
Brass	8.40-8.70

Results:

The data collected is shown in Table 2. Figure 2 shows a graph of the calculated SpG from all 16 pieces compared against 90% silver, copper, and brass SpG values.

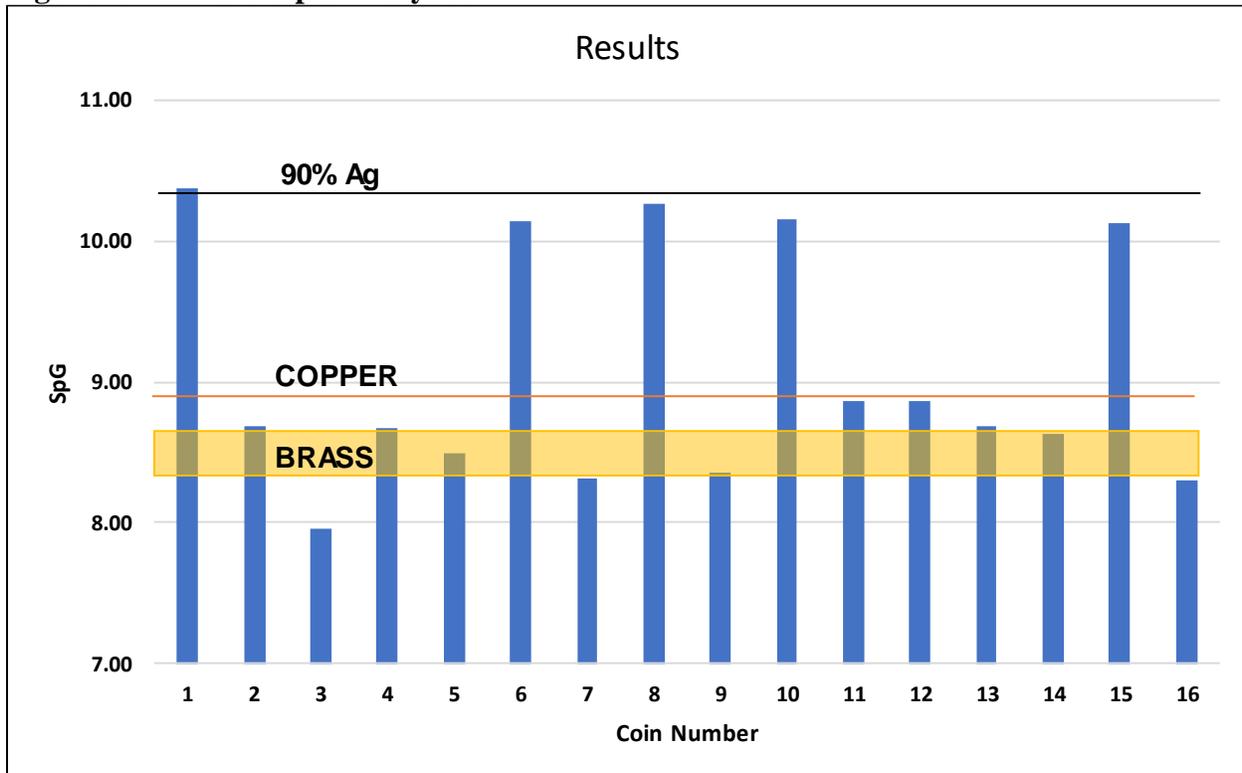
In total, five of the 16 pieces analyzed turned out to be genuine, eight appear to be die struck from transfer dies, and three have characteristics most closely resembling cast counterfeits. One cast counterfeit, 1818 5-E, resulted in an unexpectedly low SpG value. It was measured a second time with similar results. Thus, this piece may actually be cast in bronze and not brass whereby the zinc content of the bronze lowered the SpG value to less than 8.

One wholly unexpected result of this analysis was that 1826 13-M and 1829 10-K were both struck on planchets produced by the same manufacturer. Specifically, the edge designs on these two varieties are so far unique among all the other CCCCBHs I have studied. The edge designs are a repeated sequence of an incuse-square, with a thick raised circle in the middle, and a hollow point inside the circle. This edge pattern is reminiscent of those seen on portrait eight reales, and may suggest for the first time that the person who produced these CCCCBH planchets was also producing planchets for counterfeit eight reales. However, whether the edge design as used on these two CCCCBHs was intentional or accidental (since CBHs have lettered edges) is unknown at this time, and may never be resolved. Nevertheless, the idea that a single group of counterfeiters was producing both CCCCBHs and eight reales has persisted since the first-half of the 19th century, with documentary evidence backing this up.

Table 2. 16 pieces studied from the Glazer Collection

Date	Var.	Edge	Dry Weight (g)	Wet Weight (g)	SpG	Alloy	Other	Result
1808	3-C	LE	12.86	1.24	10.37	90%	O-104; damage	Genuine
1818	4-D	PE	9.99	1.15	8.69	Br	O-112	Transfer
1818	5-E	PE	10.35	1.30	7.96	Bz	O-117	Cast
1820	3-C	PE	10.49	1.21	8.67	Br	O-106	Transfer
1826	13-M	Square, circle, hole	9.77	1.15	8.50	Br	O-119	Transfer
1828	15-O	LE	10.95	1.08	10.14	90%	O-118; acid?	Genuine
1829	3-C	PE	11.14	1.34	8.31	Br	O-111	Transfer
1829	9-J	LE	13.14	1.28	10.27	90%	O-105	Genuine
1829	10-K	Square, circle, hole	10.45	1.25	8.36	Br	O-119	Transfer
1832	18-S	PE	12.79	1.26	10.15	90%	O-115; wear	Genuine
1833	27-AA	PE	10.29	1.16	8.87	Cu	O-101	Transfer
1834	8-H	PE	12.34	1.39	8.87	Cu	O-119	Transfer
1834	10-J	PE	10.41	1.20	8.68	Br	O-116	Cast
1836	1-A	PE	12.52	1.45	8.63	Br	O-122	Cast
1836	8-H	LE-RE	13.27	1.31	10.13	90%	O-112	Genuine
1836	9-I	PE	10.63	1.28	8.30	Br	O-123	Transfer

Figure 1. Results of SpG Analysis.



Conclusion:

The five genuine pieces were not an unexpected surprise. Prior to receipt of these pieces, I had hypothesized that as many as six of these 16 pieces could be genuine on the basis of their visual appearances from the photos observed in Davignons Second Edition and the high-quality color images Glazer provided me. The five genuine pieces all had color which looked like coin silver. Most of these had differing levels of damage which somewhat masked common methods of discerning authenticity, such as by checking weight. Four of these ‘counterfeit varieties’ were

newly reported in Davignons Second Edition, while the fifth, 1836 8-H, was first listed in the First Edition but the Second Edition used an image of a different example which was the same piece studied here.

The so-called '1836 8-H' studied here should have been obviously authentic from the start based on all manner of analyzing authenticity. By contrast, the First Edition photo of this variety may still exist as a cast, however that has yet to be independently verified, no ownership reference is made in the book, and the image quality in the First Edition is not strong enough to resolve that question at this time.

It is not certain if one or multiple people were responsible for identifying these now authenticated CBHs as counterfeit in the Second Edition. However, based on the photo quality and image consistency it appears that one individual may be responsible for this misattribution of authenticity for most, if not all these five pieces. Nevertheless, while at this time we do not know why these five pieces were originally thought to be counterfeits, several hypotheses can be speculated. These may include the person not being knowledgeable in authenticating CBHs, the post-mint damage resembling other poor-quality counterfeit CBHs, or possibly the hype of the upcoming Second Edition being published by Davignon.

Yet, misattributing the authenticity of CBHs is not isolated to this study. This author, and others, have been guilty of this in our somewhat blinded quests to grow our collection of CCCCBS, and be the first to identify, discover, and report certain varieties.

The sixth piece which remained a counterfeit was 1829 3-C. Among the six pieces, I had the least confidence this piece was genuine. However, from the images this piece looked either worn-down with natural discoloration and slight damage, or potentially a billon alloy. Instead, it turned out to be a transfer die counterfeit struck on a brass planchet.

Among the eight pieces which have been identified as transfer dies, most were previously identified as casts although no documentation has been found as to why that determination was originally made. And the three pieces determined to be casts, were also originally called cast counterfeits.

In conclusion, when I purchased my first Davignon book, the Second Edition, in 2010 I was excited to dive into an area of coins which I knew very little about. My assumptions were that this book was accurate and with little or no error, especially after the updates from the First Edition 15 years earlier. I did not question the content contained within it for several years because I trusted the expertise of the author over my own amateur understanding of the subject matter. However, once I began to closely study CCCCBS, I began to notice several errors, inconsistencies, and assumptions made by Davignon after cross-referencing my information with his. Similarly, the black-and-white images proved to be of limited assistance given that planchet color can also provide valuable information on alloy type, potentially assist in resolving questions of authenticity, and saving future researchers time and energy in answering the same questions on authenticity a decade after Davignons publication. My own personal biases, and trust that the information within Davignons book was accurate and precise, distracted me from double-checking Davignons results for a couple years throughout my current research efforts. Thus, in order to resolve questions of authenticity all contentious pieces should be rigorously and scientifically evaluated rather than blindly trusting the accuracy of the information and images being provided by the owner.