The President's Letter
By Chris Pilliod

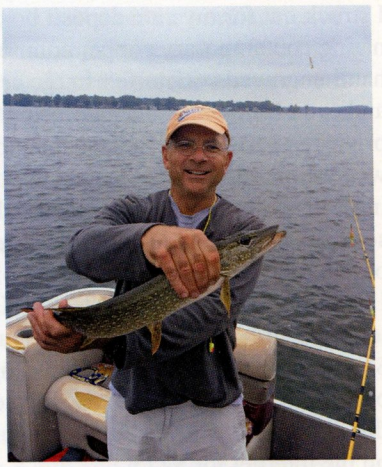
This is my 52nd President's letter and I would like to tell you about a good friend here at work named Keith. Although Keith has no numismatic interests and couldn't tell the difference between a shilling and a shinplaster, as a characterization engineer with his technical skills and acumen, he's played a heavy role in advancing the hobby. Together we have tested and unraveled some interesting numismatic puzzles. The key to discovery lies in the word "characterize." Employing patience of judgment while detailing the true character of a piece, and then finally rendering an authoritative attribution is the path to true discovery. We may spend a couple hours simply analyzing a piece before dissecting the data and then attributing.

The analysis portion was the fun part, or as some call it "getting our arms around the data." We would often analyze the findings over lunch at a Thai food cuisine, or even on a ski lift in the Pocono Mountains which is a favorite destination of his. Over the years, we had a lot to talk about. Years ago, leading numismatist and all-around good guy Sheridan Downey sent me a rare 1832 Bust Half Dollar Proof issue that had absolutely no proof-like surfaces. The entire surfaces were matte-like, not at all resembling a proof surface. When Keith directed a low-energy beam of X-Rays at the surface of the coin, a high energy peak showed up that had never been encountered in normal work nor during our Saturday morning numismatic sessions. Each element had its own unique array of wavelength peaks and after scratching our heads and researching just about every known metal from Arsenic to Yttrium, we finally plugged in mercury and bam! Mercury? What's up with mercury? We'd analyzed a lot of coins but had never seen mercury in a coin before. I was a bit nervous even calling Sheridan and telling him what we had found.

"Ahah!" Sheridan boomed when I revealed our findings. "Chris, don't you remember as a kid those chemistry kits you'd buy and with the bottle of mercury you'd shine up your tarnished pennies?" It dawned on me that my neighbor buddy Tommy Carpenter and I had done that exact same thing back in the 60's. "Well, unfortunately, some nitwit decided to splash mercury on a very rare piece!!!"

Some of the most fun I had was analyzing several 1795 Bust Dollars which are famous for exhibiting the silver plugged center - now a highly sought-after Red Book variety. These were some of the most intriguing pieces analytically. Like mowing a lawn, we would scan the surface taking compositional readings every few microns in the host coin and across the plug. Enough data was generated that statistically it was determined the silver plug was of the same chemistry as the host coin, confirming the theory that the pieces were salvaged for being underweight. Early banks were in dire need of the most trusted coinage of the early nation and rather than melt the pieces and start over, they had some lackey drill a hole in each piece and augment the weight with a silver plug.

We have analyzed 1792 Half Dismes and 1792 Dismes, some genuine but more than you would believe were counterfeit. We have magnified mintmarks on suspicious coins up to 5000x and found seams and tooling marks diagnostic of counterfeits.



Over this past winter, the specialty steel business went tepid with the sharp decline in oil prices, and rumors of golden handshakes grew at the plant. For those of you not in the know, golden handshakes are designed to reduce a company's overhead by cutting the workforce as painlessly as possible. Usually senior management with many years of service are targeted and a sweet package is offered to entice them into retirement. Keith confided to me early in the process that an employee with 43 years of service and 65 years of age would be a prime target, and he would be taking the package if offered. For him, about 1.5 years of paid salary would be included in the deal.

So I became a college kid in finals week, plotting how I could cram in as much analysis as I could. Lunches were great motivation, even a simple Wendy's burger. It turned into a finals week alright with precise specific gravities and chemistries. The night before the rumored layoffs, we were still at the plant at 7:00 p.m. squinting at the data as it unfolded.

My favorite subject? Contemporary counterfeits. Contemporary counterfeits are those pieces produce during the time period, generally the 1800's, and were designed for spending. The best pieces are those struck from hand-engraved dies, not unlike the extremely popular Hobo nickels which would mostly show up later in time. During the era, enterprising and illicit men would set up small basement shops where they would fashion dies of genuine circulating coinage from steel. Hand-engraving was tedious and cumbersome and in some cases these charlatans would simply take genuine coins and bang them into the die steel, creating "impact dies." After all their hard work, they would continue their endeavors by manufacturing blanks, typically of a base metal much cheaper than silver or gold, and then strike their coins to pay for a meal, or in the cases of the gold counterfeits, much much more.

During their day, they were looked upon with scorn by the merchant community and all others deceived by their bogus handiwork. It was not unusual for them to struggle, both artistically and numismatically. Unknown die pairings also exist - 1838 With Stars Obverse on a Seated Dime, 1842 Bust half Dollars. The same holds true artistically. Perhaps the favorite piece in my counterfeit collection is a 3-cent silver. Although this issue was heavily counterfeited, this particular piece must have been an early attempt. Every letter on the obverse is backwards!

But as time passes, the collecting community has opened their arms to the pieces, and the charlatans have been transformed into numismatic Van Goghs. But of particular curiousity is the lower denomination counterfeits, particularly the cent. Why would anyone make the effort of producing a die and striking a cent, when even back in the 1800's, its spending power was quite

So back to Keith, over 200 golden handshakes were handed out, and Keith was indeed one of the chosen. But whew-ww, he was one of a few asked to stay on board for six months before retiring. Even though that gave me a little breathing room, I struck out for my safe deposit box and gathered up all the fascinating contemporary copper counterfeits I owned. I had heard of hand-engraved counterfeit Large cents made contemporaneously, and even Half cents, but I unfortunately never owned one. Surprisingly, I had three Indian cents that required investigation, as well as one Lincoln cent. One was definitely bogus - a fascinating 1891 from obvious hand-carved dies that I paid $1 at a Jacksonville, Florida, coin shop. The dealer had it in a single-row box of common G/VG's labeled "You pick at $1 each." It was 2001, I was on a golf vacation at Jeckyll Island and it rained all day long so I drove to Jacksonville for a coin escapade. The lowly $1 purchase of this 1891 Indian cent was the highlight of the day by far. Over the years, I've come across a few more examples of this counterfeit 1891, including one this year which quickly sold on the internet for $275.

Then there was a suspicious 1890 and an undated piece that I was uncertain of as well. Both pieces I purchased as genuine examples but my eye told me they "weren't quite right." We would run a specific gravity test as well as a chemistry, both nondestructive tests. During the entire time we ran the tests, I kept wondering aloud, "why would someone go through so much effort to make a penny?" I find them on the ground all the time. The only answer I could summon was if they made five, they had a nickel, if they made ten, then they had a dime and so on. But at what cost? Why would anyone go to the trouble of fabricating a cent from hand-made dies when the raw material probably cost them 1 cent by itself?

I assembled a total of four cents that I felt or knew were suspicious as contemporary counterfeits. Three were Indian cents and one Lincoln cent - all I felt were struck from homemade dies. In two cases, the dies were of such high quality that they may have been stolen from the Mint. The only reason these pieces were in my Counterfeit Box was that they simply just did not "look right," either the color or strike was "off." It reminds me of what my good friend John Dannreuther often says when asked why he thinks a certain piece is counterfeit… "It just doesn't look right," he'd say. You'll hear that line often from the veterans.

The data analyzed is assembled below in table format. In all four cases the determination was either counterfeit or "likely counterfeit." The two pieces struck from proper dies are likely counterfeit as well. Why? Genuine Indian cents always analyze with tin (Sn) present, usually about 2%. So to display absolutely no tin is an attribute of a counterfeit. But all the pieces are copper-based and the weights are in line with Mint standards, so how could anyone possibly afford to fabricate cents profitably?

Only two scenarios may account for this. By the late 1800's and early 1900's, the prices of both precious metals and base metals had fallen precipitously, a result of a strong U.S. dollar and the long drawn-out recession of 1873. I would estimate that the value of copper in a cent was somewhere in the neighborhood of a one-half of a cent. So as laborious as it indeed was, the enterprising charlatan could still make out, as long as he made a LOT of them! The additional advantage of fabricating bogus pennies was that they would "fly under the radar" of any suspicious merchants, unlike a higher denomination coin such as gold, or even quarters and half dollars. So they were easily transacted to an unsuspecting vendor.

Date	Cu	Zn	Sn	Ni	Total	Weight grams	Specific Gravity
18(?)	89.8%	10.2%	--		100.00%	2.92	8.75
1890	82.2%	17.8%	--		100.00%	2.97	8.57
1891	89.9%	10.1%	--		100.00%	3.02	8.65
1921	88.0%	11.6%	--	0.40%	100.00%	3.32	8.63

Surprisingly, contemporaneous manufacturing of cents was still being performed as late as 1921, as can be seen from the Lincoln cent shown. This piece came through Rich Uhrich and John Kralevich and is just a cool addition to my cent collection. What is additionally curious is that, based on the similarities of the chemistry and specific gravity, it appears that the 1891 Indian cent and the 1921 Lincoln were made from the same stock, indicating perhaps the same person's handiwork! Another possibility is that the suspects had access to the copper sheet from their jobs or the raw material was even stolen. In analyzing other series of counterfeits, the data revealed that in some cases, it appeared the counterfeits were actually struck on genuine US Mint blanks!

Collecting of counterfeits has evolved into a new type of artwork and is gaining popularity. All the suspects are long gone and their status has transformed from criminal to iconic. But finding Indian cent counterfeits is a lifetime process and much patience is needed. Perhaps when Keith and I complete our work and he heads out the door one last time, I will publish all of our findings.