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Errorscope
Online Supplement

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CONECA

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Our Inaugural Issue !

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The Skeptical Eye

Unique errors are, paradoxically, quite common.

by Mike Diamond, CONECA President

From time to time you'll see an error described as "unique" or "possibly unique". In many cases, these claims are not exaggerated. One might jump to the conclusion that unique errors are seldom encountered. But the reality is that unique errors are fairly common.

Now, I'm not referring to the trivial fact that some errors are highly variable. Certainly, off-center strikes and double-strikes show limitless variation in the degree and direction of off-centeredness. I don't consider such variants to be "unique". Instead, I'm referring to a more profound uniqueness involving fundamentally distinct errors.

Statistics tells us that such errors MUST be common. This paradoxical situation arises from the fact that there are a large number of basic error types, numerous subtypes and sub-subtypes, and a variety of effects associated with many of these types and subtypes. In total, we are dealing with many hundreds of singular errors. But errors often come in complex and compound forms. Two, three, and sometimes more errors can be found on a single coin. That means we are confronted with a huge number of possible combinations and permutations.

Some time ago I published a comprehensive checklist of errors and varieties (available on the CONECA website). The list contains mostly singular errors; I tried not to pad it with error combinations. I periodically update the list, adding some entries and dropping others. Right now the list consists of 19 single-spaced pages. There are approximately 25 entries per page, making a rough total of 475. If you combine any two of these in a random fashion, you have 225,625 possible combinations and 451,250 possible permutations.

Naturally, some error combinations are highly unlikely. It's not likely that you'll get an off-metal foldover strike (although I've seen one!). And it's certainly true that some errors are mutually exclusive or incompatible. For example, it's obvious that you can't have a planchet that is both rolled-thin and rolled-thick. So, for the sake of argument, let's say there are only 250 legitimate, self-standing errors and varieties in the list. That still leaves 62,500 possible combinations and 125,000 permutations.

At the same time, the number of theoretically possible error combinations and permutations is undoubtedly far greater than 125,000. As I mentioned, it's not uncommon to find three, four, or more different errors on the same coin. Also, an error or error combination might be unique for the year, the denomination, the type, the composition, the country, etc.

In short, each unique error is one-of-a-kind. But as a group, unique errors are rather common.

In sizing up a "unique" error, you must establish at what level uniqueness is established. If it's unique at the level of the basic type, that would really be something. Right now I can think of only one basic error type that consists of a single example. There are probably others, though. If it's unique at the level of the basic subtype, that's significant. If it's unique at the level of the sub-subtype, that has lesser significance. If it's a unique combination and permutation, the significance is further reduced. Let's take an example:

In the November/December 2006 *Errorscope* I described a 1976 cent struck on a damaged, 2.51 gram, solid copper-nickel planchet that corresponds to nothing being struck by the U.S. Mint at that time. It is an "orphan" off-metal error, probably representing an unknown foreign planchet. I've never seen or heard of another cent that precisely matches this one. It's probably unique.

This cent fits into the basic error category of "wrong planchet error". It is also an "off-metal error", which in most cases can be considered a subcategory of the former. Below that, it can be assigned to the category of "foreign off-metal error".

At none of these three levels can the coin be considered unique. At a still lower level of classification, the coin falls into the category of "orphan off-metal error". Now these are pretty rare, but by no means unique. As far as I know, the coin IS unique for this year and this denomination. Its specifications may also be unique, but one would have to carefully search Mint records to see if there are any other solid copper-nickel planchets of approximate cent diameter that weigh around 2.5 grams. The presence of prestrike damage creates a combination error. This obviously can't make the coin any more unique than it is, but it does add an extra component. It should be recognized that there are other wrong planchet/off-metal coins that show prestrike damage.

I'm not trying to downplay this coin. It's a deeply intriguing and highly desirable error. But one needs to place it in perspective as one of a number of orphan off-metals that are known to exist.

If you're itching to acquire a unique error purely for that reason, there is no need to jump at the first high-priced example you come across. With patience you'll be able to acquire a unique error for a modest expenditure. Those of you who've read my articles for the past eight years are aware that I've accumulated quite a stash of unique errors. With a little diligence and patience, anyone can do the same.

Club news…

With this issue, *Errorscope* returns to a 36 page format. I'd like to thank you all for your patience during the 6 months that *Errorscope* went to a reduced-page format. ■

Bi-Metallic Mania

by Jeff Ylitalo

Bi-Metallic, (BIM), error coins continue to be studied and researched. In previous columns of *Errorscope* we examined an assortment of BIM errors which could be encountered and the "joining process" of both the outer ring and inner core. The hunt and quest continues for these scarce and elusive types of errors.

This column will highlight three different errors from different countries, but which are similar and which can be very unsettling to the unaccustomed eye. These exemplary errors could be easily explained away and accounted for, but this would be a complete injustice to the thrill of finding, studying and coming to understand their complex natures. These groupings of errors do share a very important characteristic, but are different from one another. Their end state condition is what separates them individually. They remain in a family of their own, whether a cousin, or an uncle, sister or brother. They warrant both a closer look and a detailed study in order to give an adequate, comprehensive overview and explanation. Doing anything less would consign the truth and research behind it to a black vault of secrecy and inattention. This particular column took many turns, and has left me startled as to what I would discover to be the truth. Let the sun shine in and take a moment, if not several, to explore this journey I've recently completed.

For a quick review let's recall some fundamental knowledge. We know from recently published Bi-metallic Mania columns that the ring and the core travel together and both ultimately experience the "joining process". Both components fully bond during the actual die strike to create a strong interlock. One of these two components, either the ring or the core, is always responsible for penetrating the other creating a strong inter-lock. Which component does what to whom and how, depends entirely on what method of joining is employed by the country of origin and their chosen technology. This final joining of ring and core resists the forces of relative axial and rotational movement between the two components during its entire circulation life.

Let's start with an extended look at this 2004 dated 500 Pesos BIM error from Colombia. It is of normal weight — 7.5 grams — and is listed as KM # 286 in Krause World Coins. The outer ring is normally comprised of 92% copper, 6% aluminum and 2% nickel. The core is comprised of 65% copper, 20% zinc and 15% nickel. In the case of a 500 Pesos BIM coin, the greater amount of nickel composition is resident in the core which in terms of hardness is greater than the hardness of the ring. Therefore, the core penetrates the ring during the joining process. Remember, the center hole of the ring is normally punched out of a solid disc of metal during its initial preparation stages and before it ever sees the core. Later, the insertion phase of the core into the hole of the ring will take place, but not before the punching or piercing of the center hole itself.

Our first BIM error has an especially exaggerated, elliptical, egg-shell shaped core on the reverse face, but

Obverse of 2004 Columbian 500 Pesos implies all is well...at first glance.

before we get wrapped up with it, let's examine the obverse face. When viewing the obverse all things appear normal at first. A closer look, however, affords much more detail that all is not right. A significant gap or space between the core and ring is present. This gap and the visible separation between the ring and core indicate that the core was unable to fully penetrate the ring. We see that a long, thin, semi-circular portion of the ring has expanded and has been die struck with design detail of the "Guacari" tree. We can see this expansion best at the trunk of the Guacari tree. Looking immediately to the left and right of the trunk we see the ring takes an abrupt turn and then resumes a more normal, circular pattern the rest the way around the core.

Further examination of the obverse provides us with a close, intimate view of this space between the core and the ring. This void is a result of expansion taking place in primarily one direction during the strike. We can see that core was never allowed to make contact or to join with this innermost portion of the ring. This space also allows a closer look along the outer edge of the core. The core edge is indeed grooved and the adjoining walls of the groove are in pristine condition without any contact or compression having taken place against the ring. This critical side-view also verifies the adopted technique join with the ring. As mentioned before, there is now no doubt as to the chosen method for the joining process of the ring and core for a Colombian 500 Pesos BIM coin. The core is designed to penetrate the ring.

Now turn the coin over to the reverse face and we see a huge and dramatic difference in relationship to the obverse face of the core. The reverse of the core is grotesquely misaligned on the reverse! Why? What exactly has happened?

For most folks, including the sage veteran error collector, our visual senses cannot automatically comprehend this eccentric appearance. This huge abnormality is a dramatic departure from most error coins which are not bi-metallic in nature. Knowing some of the finer elements involved during the preparation, striking, and joining phases of BIM coinage is imperative

Reverse of 2004 Columbian 500 Pesos bears a inner core that is severely elongated and now oblong rather than the normal circular shape.

and it is important to instill just a bit of mental discipline to see beyond this impossible looking feature for a full explanation.

Through various phases of study and examination I was fortunate to gather up an assortment of these types of errors in various states and conditions and learned a great deal. To understand how the reverse of the core materialized into this elliptical, oblong, egg-shell shaped core, we need to again remember that the core is inserted into the center hole of the ring. This action of insertion is carried out prior to both components being struck. Something unique has happened during the insertion phase. What we see is a major misalignment. To be exact, it is a misalignment of the core during its insertion into the center hole of the ring.

The inner core never aligned properly, meaning it never fit correctly within the center hole of the ring prior to both components being die struck. This is a significant event. The amount of misalignment combined with metal expansion of both components during the strike determines the extent, size and shape for this type of error. The core itself was misaligned and partially overlying a portion of the ring. The appearance of the reverse face of this core is visually unfamiliar, but it is real and it is legitimate as we will come to see and understand.

The core was struck in its misaligned position and resulted in this exact condition. The misaligned core had little choice and was forced to mate

With backlighting, it is easier to see where the interlocking of the inner core to the outer ring has unintended spacing.

and bond with the ring. The pressures imparted by the striking dies further exaggerated the final condition of this major misalignment. It is amazing that the core could still successfully penetrate the ring and manage to create a strong inter-lock. This is not always the case as we will see with our last specimen in this column. To date, this awkward, but successful partial joining of this 500 Pesos error has unwaveringly withstood the elements of time and the axial and rotational stresses existing between the two components.

I will mention a couple of things before we get started with our second BIM error. It is coin # 2 that fit the entire puzzle of this type error together. There is no way without this particular coin that I would have or could have written this column. My data was incomplete and I was missing critical proof. Rather than explain everything away as I've mentioned I will never do, I must share with you that I've never seen another example like it. It is the missing link that allowed everything to connect. Although not visually extraordinary or powerfully dramatic in an outward sense, this error coin contains several critical clues that provide proof, the evidence, and moreover a common sense thread as to how these types of BIM error occur. Even more astounding were the odds stacked against my success to hunt it down, recognize its legitimacy and finally acquire it. At my wits end, it came along when I needed it most. If this sounds like a confession, I suppose it is.

This kindred spirit to our previous specimen is also a 500 Pesos BIM error, dated 2004 and from Colombia.

A second BIM error also happens to be a 2004 Columbian 500 Pesos. For reasons which remain a mystery, this core while at first being misaligned and overlying the reverse face of the ring, found its way back into the center hole of the outer ring after leaving an indent on the reverse face of the ring.

It too has the correct specification weight of 7.5 grams. What should have been an elliptical, egg-shell shaped reverse core did not occur! While the core appears to have fully bonded with its host outer ring, a much closer examination reveals otherwise. For reasons which remain a mystery, this core while at first being misaligned and overlying the reverse face of the ring, found its way back into the center hole of the outer ring after leaving an indent on the reverse face of the ring. This is incredible.

Given everything we have discussed with our first specimen, the major difference with this error coin is the indent on the reverse face of the ring. Please look at it closely. You will notice the indent is somewhat out of round, not a full circle. This is the result of the originally misaligned core which was partially overlying the reverse face of the ring. Somehow, after the indent occurred, the core wiggled its way back into the center hole of the ring. Now direct your attention to the obverse face of the core to examine this evidence. It is amazing proof. If you're questioning this, as I have, hold onto your hat.

Notice the unstruck semi-circular zone of the core at the top right of the Guacari Tree. Here, significant die design elements are completely absent. What should be fully developed leaves of the tree is instead replaced with a mottled or matte surface texture consistent with two planchets which were struck, forced or compressed together. The tree's die design detail was not struck and transferred to this quadrant of the core because this part of the core was too thin. The core in this unstruck zone shows some convexity which matches the concave surface of the indent at this location when the core had been misaligned while overlying the ring! As previously mentioned, it is a mystery as to how the core was able to re-position to the center hole of the ring after the indent was created.

Now closely examine the reverse face of the coin where the indent on the ring meets with the outer edge of the core. We can actually view the groove along the core edge which is responsible for penetrating the ring. The groove of the core edge at this location is fully exposed and it is smashed or squeezed together. This is the part of the core that was struck into the ring, creating the indent. The core which is centered within the hole of the ring created the indent on the ring. The core then somehow was able to re-position to the center hole of the ring and was then fully struck with die design detail on its reverse face.

Note the unstruck area of the core above the Guacari tree. The die design did not transfer to this area during the strike due to the core being thinner in this location. A thinness which coincides with the indent on the opposite side of the coin.

Is it possible that this coin was struck twice? Did the first strike occur while the core was misaligned (creating the indent)? Was this then followed by a second strike with enough of a pause in-between to allow the core to slide or move back into the center hole of the ring? Although I cannot be certain that this did not occur, if you look at the peripheral design elements on the ring, "COLOMBIA", appears to have doubling of some sort. I do not think this supports the double strike scenario, but I feel it is worth noting. I do, however, feel that there can be no doubt that this core was fully responsible for the indented portion of the ring and that somehow the core was then able to properly re-position to the center hole of the core. The reverse face of the core is die-struck with full design detail as can be seen with "500 PESOS" and no expansion of the core itself took place.

One other keen observation must be mentioned. After my initial write up of this column, I asked writer/researcher, **Mike Diamond** give a studied look at these specimens via these digital photos. Mike noticed some possible rotation of either the ring around the core, or the core itself rotating as it found its way back into the center hole of the ring for a snug fit. I have verified that

Close examination of the reverse face of the coin where the indent on the ring meets with the outer edge of the core reveals the groove along the core edge which is responsible for penetrating the ring. This is the part of the core that was struck into the ring, creating the indent. The core then somehow was able to re-position to the center hole of the ring and was then fully struck with die design detail on its reverse face.

there is indeed rotation. What this means is that the rotation occurred while the core was wiggling, or repositioning back into the center hole of the ring, but before both components were die struck. I believe this because the die design elements are correctly aligned on the core and the ring. I've verified this alignment with normally struck specimens. Without the unstruck zone on the core, it would be impossible to gauge or to measure the rotation. Thanks to Mike, as I would have been hard pressed to pick up on this very cool feature.

I believe the core was definitely misaligned when it was first inserted into the center hole of the ring. I also conclude that the core must have bounced, wiggled, or slid its way back into the center hole after creating the indent which is present on the ring. The core is fully die-struck on both faces, except for that portion of the obverse face which is missing the large clump of Guacari leaves in the tree top design. It seems impossible, but with the available evidence there is little doubt that this core created the indent as the proof is in the crescent shaped indent that matches that portion of the obverse face of the core which is void of any die design. The core had to be overlying the ring in a misaligned condition. This particular error has fully convinced me as to how these elliptical, egg-shell shaped core errors transpire. This error type begins with a major misalignment of the core by not being first properly inserted or fitted into the center hole of the ring.

NOTE: Some possible factors aiding in the misalignment during the insertion phase of the core into the ring could be;

(1) Hole too small, meaning the hole in the ring itself, (too small to accommodate a correct fit for a correctly sized core).
(2) An incorrectly sized core which will not fit into a normal sized hole of the ring.
(3) An improperly inserted core due to malfunctioning equipment or inattentive workers, (even when both components are without flaw).

(Any of these three could create a misalignment of the core from the start once both components enter the striking chamber).

Continuing on with our final specimen, coin # 3, it is a wild and stunning variation of this type. This error coin consists of a single component. "Impossible", you say? Oh, but it is true. It is an isolated core, which on very rare occasion manages to surface. This core hails from Canada.

This isolated core is from the 2 Dollar Canadian BIM coin series featuring the Polar Bear reverse design and is listed in *Krause World Coins* as KM # 270. The outer ring, which is absent, is normally comprised of elemental nickel and the core is an aluminum-bronze alloy. The ring is much harder than the core and if you're on track, you know that the ring will always penetrate the core for this enterprising design of BIM coinage.

This isolated core was not struck alone. In other words, this core did enter the striking chamber with an outer ring. Here again, the core was misaligned, lying haphazardly over the ring during its insertion to the center hole of the ring. Both the ring and this core were struck producing the familiar egg-shell shape. Again, the same happened with our two Colombian 500 Pesos errors, except here the outer ring of our Canadian BIM core has long since disappeared.

Expansion of the core on the obverse face occurred when it was forced down onto and into the ring while it was misaligned over the ring. This time, however, die design elements intended to be struck onto the ring

Canadian 2 Dollar design struck on an isolated core.

were imparted to the expanding portion of the core as seen with the lower portion of the letters, "ELIZABETH II" on the obverse.

Several additional observations must be pointed out that make this particular isolated core unique. This isolated core failed completely to join with or bond to the ring. Because of this failure the ring simply dropped away from the core after both components exited the striking chamber. With this Canadian 2 Dollar BIM, the ring should penetrate the core.

We can see on the Polar Bear reverse that the core has a large crescent shaped zone which has not been die-struck. This crescent is void of any design elements and lies opposite of the expanded obverse which is die-struck, with the partial letters of "ELIZABETH II". The reverse of the core was overlying the obverse face of the ring. This unstruck crescent also shows a matte surface texture that is often seen when two coins are forcibly imposed upon each other. This texture is an additional sign of authenticity.

If the isolated ring were present, we would be able to see the indent created by the misaligned core. Just as we see with our Columbian 500 Pesos specimens, the Canadian 2 Dollar core has also expanded into an oblong shape. The unstruck crescent on the reverse proves that the core impacted the ring while misaligned. Again, this was done during the insertion phase of the core into the center hole of the ring. Had this Two Dollar core joined successfully with the ring we would now be seeing an error similar to our first Columbian 500 Pesos, but this is not the case. Fortunately, our isolated core was able to find its way out of the Canadian Mint, into circulation and the hands of error collectors. It provides us with additional insight, clues and evidence as to how these astonishing types of BIM errors occur.

This particular research has been an extraordinary experience. The nature and the truth of these weird error coins has fostered an ever-growing respect for the exotic nature of the minting process involved with bi-metallic coinage. The many variations of errors that can be encountered both twist and agitate the senses. It has repeatedly confused the grey brain matter of the sharpest cherrypickers and collectors. BIM errors have been long overlooked and regarded as too difficult, or not worth mentioning. The most challenging, but rewarding tasks have been the gathering and ferreting out of adequate error BIM material to examine, study, and make sense of. As many of you know, this can take months and sometimes years. There are different tastes and stratagems of coin collecting, and error/variety coin collecting is no different. It is availability that most impedes research and the seemingly sly, and elusive truth of these exotic errors. There must be strong will and interest as ever-present companions to succeed. Additional challenges are the vast oceans that separate countries, the ability to traverse language barriers and overcome perceptions which are often not easily understood. Finally, putting this information to the written word for all of us to enjoy and understand has been the greatest reward. Until next time, keep the faith and good luck. ■

Membership News

by Paul F. Funaiole

Thanks once again for these generous donations: **Donald Welch** for his $10.00 YN fund donation and his $5.00 General and Publications funds donations; **William Hostutler** for his $10.00 YN fund donation; **Marc Bravstein** for his $10.00 YN fund, General fund and Publications funds donations, **Felix Dausilio** for his $10.00 General fund donation and **Vernon Gentry** for his $25.00 General fund donation. These donations are most appreciated. We wish to say welcome to the following 17 new members: ■

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In Memory Of

Russ LeBeau

November 8, 1950 — May 14, 2007

Russ died of a sudden heart attack in his sleep. He is survived by his son Michael, his daughter Lauren, his father, brother and sister. He will truly be missed and I want to thank everyone for being a friend during this time and while he collected his many Lincoln Cents. — Michael LeBeau

Shattered! A Short Discourse on Shattered Dies and Catastrophic Die Failure

by Mike Diamond

The term "shattered die" is often used (and sometimes misused) in the error hobby to denote a die that is cracking up and close to terminal failure. There is no single criterion that clearly distinguishes a shattered die from a lesser degree of die failure. It's a subjective assessment – a case of "I know it when I see it."

In the everyday world, the adjective "shattered" implies the violent splintering of a brittle material, like glass. Among error collectors, however, the term is something of a misnomer. A shattered die is still a functioning die, and is sometimes capable of striking numerous coins despite its desperate-looking condition. The term "catastrophic die failure" is instead used to describe a die that is caught in the act of breaking apart. The coin that documents a catastrophic die failure is the very last coin struck by that die. As you might imagine, such errors are extremely rare.

The online CONECA glossary (http://www.conecaonline.org/content/glossary.html) defines a shattered die as follows:

"Three or more die cracks radiating toward the center of the die, usually 90 degrees apart, indicates that the die has begun to shatter into several pieces."

I don't know the original source of this definition, but the criteria presented are too trivial and too restricted to encompass the myriad combinations of cracks and breaks that satisfy the threshold for a "shattered die". For me, three short radial die cracks fall far short of the severity I'd need to see in a shattered die.

I will now present a diverse array of coins that can reasonably be considered as having been struck by "shattered dies".

Figure 1 is a 1973-D dime struck by an obverse die with two splits. A "split die" occurs when a rim-to-rim die crack propagates deep into the die shank, allowing the sides of the crack to spread apart (Diamond 2006). In this case a median, or midline split extends from 2:00 to 8:00 (obverse clock position). The lower half of the die developed a second split that runs vertically from 6:00. It presumably met the horizontal split, effectively dividing the die face into three compartments.

The thick raised lines that correspond to the splits fade out as they approach the center of the coin. The splits in the die face did not actually

Figure 1. A 1973-D dime struck by a shattered obverse die. The die face shows a full split and a half-split in the southern hemisphere. Photo courtesy of Lindy Stone.

Figure 2a, b. A 1903 Mexican 20 centavos struck by a shattered reverse die. Numerous radial and curved die cracks have spread across the reverse face.

pinch out, however. Note that the design also disappears in the center of the coin. This is apparently the result of "die subsidence" (sunken dies), an error that often accompanies split dies (Diamond 2004a, 2004b). The die face actually sank in and the design simultaneously lost its clarity as the metal deformed. A subtle elevation of the coin's surface is partly responsible for the failure of coin metal to squeeze into the splits in this area. The elevation was not great enough to affect the strength of the reverse design, which is normal. (When subsidence is more pronounced, however, the reverse can be weakly struck.) Another factor may have contributed to weakness in the center of the design. The ends of the splits may have bled off enough pressure to reduce the effective striking pressure in the center of the coin.

This is the only double split die I know of, but it's not the only way to define a shattered die.

Figure 2 shows a 1903 Mexico 20 centavos with what I consider to be a mild example of a shattered die. The reverse face shows five radial die cracks that extend in from the edge, and three curved die cracks that are limited to the interior of the die face. Despite the many prominent die cracks, it does not appear that any of them indicate impending failure of the die. Quite a few coins could have been struck after this one was minted.

Figure 3a,b. A 2000 Indian 2 rupees coin with four severe bi-level die cracks converging on the center of the coin. Photos courtesy of Jeff Ylitalo.

Figure 4a,b. A 1913 Chinese 100 cash coin with numerous intersecting bi-level die cracks. The cracks divide the obverse face into blocks of different height.

A more extreme example of converging radial die cracks can be seen in Figure 3. This 2000 Indian 2 rupees coin shows four radial die cracks that meet in the center of the obverse face. Instead of being conventional die cracks, like those seen in the Mexican coin, these are bi-level die cracks. In a conventional die crack the metal spreads apart, leaving a thin raised line on the coin. In a bi-level die crack there is vertical displacement at the site of the crack (Diamond 2004a,b). In other words, the die face sinks in on one side of the crack.

A more extensive set of bi-level die cracks can be seen in the 1913 Chinese 100 cash coin shown in Figure 4. The obverse face shows at least seven bi-level die cracks and a few smaller conventional die cracks. At least one crack shows characteristics of both. This is not that unusual, as you can have both horizontal spread and vertical displacement in the same location, or a transition from vertical displacement to horizontal spread as you proceed along the crack.

Many of the die cracks intersect, producing a complex network of rising and falling steps. Vertical displacement is great enough in some areas

Figure 5a, b. An 1863 Civil War token struck by a shattered obverse die. A large number of thick radial die cracks converge on a centrally located circular die crack. The pattern resembles the hub and spokes of a bicycle wheel. Severe clash marks on the reverse seem unrelated to the fractured surface of the opposing die.

Figure 6a. A 2001b dime with a huge retained cud and three bi-level die cracks. The reverse is normal.

Figure 6b. Oblique view of the retained cud showing dramatic vertical displacement.

Figure 6c. Two bilevel die cracks appear on the right, one of which extends in from the retained cud, the other extending in from the rim.

Figure 6d. Close-up of a small bi-level die crack extending from the retained cud and passing through the "O" of GOD. Significant horizontal offset is seen at the edge of the retained cud in this area.

that it produced weakness on the opposite face.

Despite its tenuous structural integrity, I suspect this die was nowhere near terminal failure and was able to strike quite a few more coins in this condition.

Die cracks of even greater severity do not necessarily imply imminent failure. Figure 5 shows a well-known 1863 civil war token struck by the Broas Pie Bakery of New York City. The obverse face was struck by a badly shattered die. Over a dozen radial die cracks of the conventional sort extend in from the edge, with most meeting at an irregular, ring-like die crack in the center of the coin. This die looks like it was about to break apart completely, but that would be a false assumption. A large number of identical-appearing tokens were struck by this shattered die, which is why individual specimens are relatively inexpensive.

The reverse die shows a very strong die clash and some die cracks of its own. It does not appear that a clash was responsible for the fractured obverse die, since no clash marks are visible on the obverse face.

A shattered die should not be limited to die cracks alone. There are numerous other manifestations of brittle fracture that, in combination, can constitute a shattered die.

Figure 6 shows a 2001-P dime whose most visible defect is a 50% retained cud (retained die break) of the obverse die. The part of the die

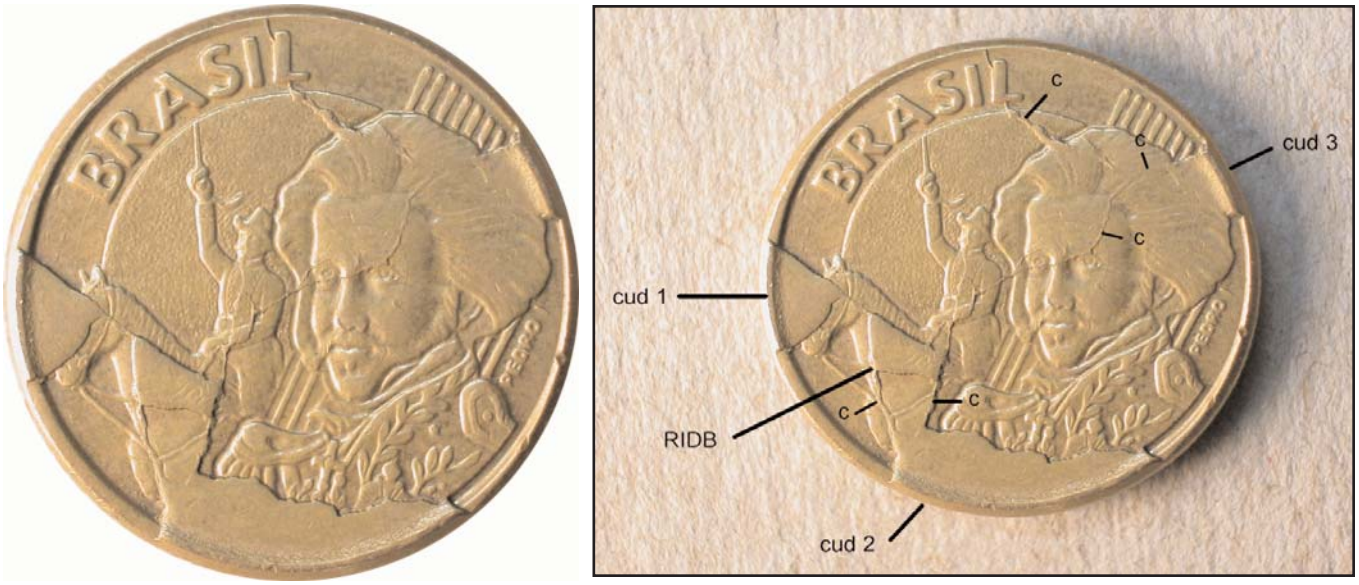

Figure 7a,b. Obverse face of a 2002 Brazilian 10 centavos with various manifestations of brittle fracture. Abbreviations: RIDB, retained interior die break; c, die crack; other labels are self-explanatory.

Figure 7c. Reverse face of the same coin, showing areas of weakness opposite some of the cuds.

enclosed by the jagged, curved line actually broke away and sank in below the level of the die face. I don't know whether this was the hammer die or the anvil die, as the obverse die was used in both capacities during this time period. The retained cud shows extensive vertical displacement along most of its course and very obvious horizontal offset around IN GOD WE TRUST.

What elevates this error to the level of a shattered die are the three subsidiary bi-level die cracks that exist alongside the retained cud. One extends in from the edge and is independent of the die break. The other two die cracks branch off the retained cud.

I have seen four dimes struck by this obverse die and they are all identical to this specimen. So, despite its apparent critical condition, this die held together and struck at least a small number of dimes.

Many types of brittle fracture are seen on the obverse face of a 2002 Brazilian 10 centavos (Fig. 7). There are three cuds, one retained interior die break, and a tracery of intersecting die cracks of both the conventional and the bi-level type. For those unfamiliar with the term, a retained interior die break occurs when an interior section of the die face breaks free and sinks into surrounding softer metal (Diamond 2004a). This glorious wreck of a die may have been able to strike a few more coins like this, but I suspect the number was limited.

A rather similar error is seen in a 1985 India 25 paise coin (Fig. 8). It features a large retained cud, a small retained interior die break, and numerous die cracks, most of them bi-level. The right side of the obverse face (and the corresponding left side of the reverse face) are weakly struck. Part of this is due to a sinking in of the die face on the right side of the

Figure 8a,b. A 1985 Indian 25 paise coin showing various types of brittle fracture, that, in aggregate, elevate it to the level of a shattered die. Abbreviations: RIDB, retained interior die break; c, die crack; other labels are self-explanatory. Photos courtesy of Jeff Ylitalo.

Figure 8c. Oblique view showing vertical displacement at the edge of the retained cud.

Figure 8d. Reverse face showing numerous weakly struck areas. The largest and most profound area of weakness (upper left side) was due to a tilted die, which, in turn was probably caused by a broken die base or shaft.

obverse that is part and parcel of the development of a large bi-level die crack that extends through the three-headed lion. But I suspect a good deal of the weakness is due to a tilted die error (vertical misalignment) of the entire obverse face. The left side of the obverse is quite strongly struck, despite the large retained cud. This should have led to a reduction in effective striking pressure. The fact that it didn't indicates that this part of the obverse die face was tilted down, while the opposite pole was tilted up. This tilt was most likely due to a break at the base of the die or through the shaft of the die – a break that allowed the die to tilt down strongly toward one pole. A little later on we'll see another specimen that shows a severe vertical misalignment in conjunction with a broken, shattered die.

We now will turn our attention to examples of catastrophic die failure.

Figure 9 shows a two-coin sequence that captures the instant a die broke apart completely. Figure 9a shows an off-center quarter struck a moment before terminal failure occurred. The die was already in bad shape, having lost the date area. This is a common area for cuds to develop in quarters. In addition to the cud, there are sev-

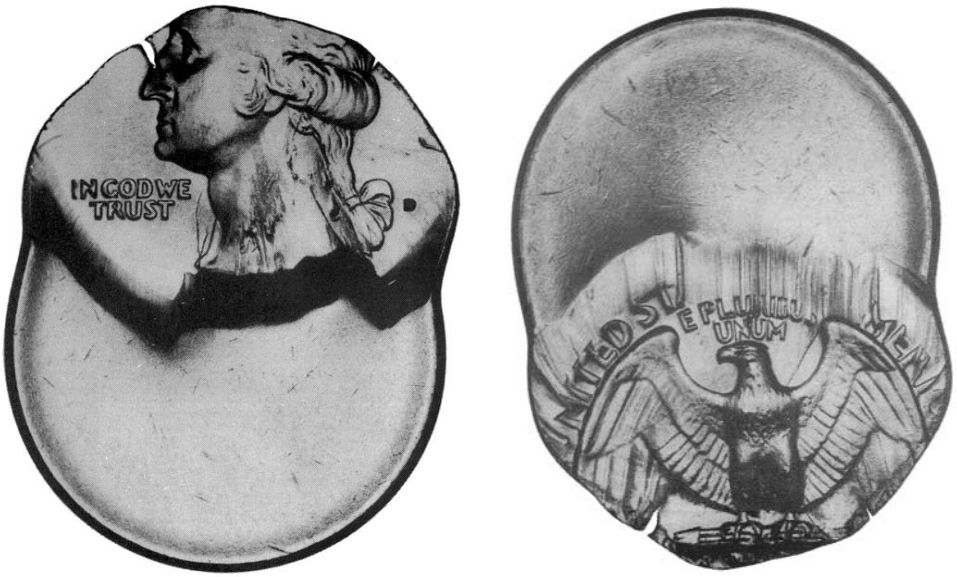

Figure 9a, b. First of a two-coin set documenting catastrophic die failure. This off-center quarter shows a cud in the date area, a few die cracks, and conspicuous die damage on Washington's neck. Photos courtesy of "Lonesome" John Devine and The Numismistake.

Figures 9c,d. Second coin. Most of the remaining portion of the obverse face broke away at the moment of the strike, stretching out the planchet. The only intact part of the die face left is a small corner incorporating Washington's chin and IN GOD WE TRUST. Severe clash marks are present on both faces.

eral die cracks and heavy die damage on Washington's neck. After this coin was struck, the dies clashed heavily, further weakening the obverse die. The strike that produced the second off-center quarter was the final insult that caused most of the obverse die to break away. The prolonged, ragged "slide zone" records the lateral movement of the broken die face as it struck the coin. After this, the only part of the die left intact was the area that incorporates IN GOD WE TRUST and Washington's chin.

A classic example of catastrophic die failure is **Ken Hill's** remarkable 1919 buffalo nickel (Fig. 10). As reported in the May/June 1996 *Errorscope*, this coin shows a huge and enormously elevated retained cud on the obverse face (Hill, 1996). In buffalo nickels the obverse die functioned as the anvil die. Numerous die cracks criss-cross the surface, at least eight of which are visible to the naked eye. The collar is split vertically at 12:00 and 7:00, and the right side of the obverse face is wider than normal between these

Figure 10a,b. Catastrophic die failure of the obverse (anvil) die in a multi-struck 1919 buffalo nickel. A huge retained cud with extreme vertical displacement stands amidst a profusion of die cracks. The whole business is surrounded by a broken collar. Photos courtesy of Ken Hill.

two points. It would seem that these two splits therefore define the endpoints of a retained collar cud. (A retained collar cud occurs when a section of the hardened working face of the collar breaks off and sinks into surrounding softer metal). A few clash marks can be seen, although they're not especially prominent or widespread. According to Ken Hill, the reverse face was covered by one or more planchets during the strike. That's consistent with the featureless surface, but I don't quite understand the presence of a thickened raised donut around a smaller central recess. Perhaps something more complex was going on. There is evidence of at least four strikes, and perhaps many more. There is little doubt that this was the last coin struck by this die pair.

Our final specimen is a double-struck Roosevelt dime that may have captured the aftermath of a catastrophic die failure or may record the two strikes immediately before and after such a calamity.

The reverse face of the larger of the two off-center strikes was struck by a shattered anvil die. There is a mesh-work of prominent die cracks, most of them bi-level. Both the reverse and obverse faces show strong, multiple clash marks, which may have contributed to the breakdown of the reverse die.

The smaller off-center strike was produced by a very small portion of a die. Most of the obverse die was apparently gone by the time this strike occurred. Certainly, the area above and to the left of IN GOD WE TRUST is nowhere to be seen. The rim and field to the left and below the motto was also gone. The small area of die-struck design is tilted about 45 degrees relative to the planchet's surface and is driven deeply into the planchet. There is no doubt that we're dealing with a monumental tilted die error (vertical misalignment). The reverse face shows no design, but is not a typical uniface strike. It shows a strange pattern of closely-spaced microscopic lines running in two different directions. I don't know what could have produced them. The first strike shows no evidence of die tilt.

Reconstruction of the precise chain of events is hampered by the absence of the reverse design on the second strike and the fact that there is no area shared in common by the two off-center strikes. There are several possibilities:

1. The larger strike came first. The upper part of the obverse die face broke off between the first and second strikes, leaving just a small portion of the die face intact. At the same time, the base or shaft broke completely across, causing massive die tilt as the broken die was driven into the unstruck part of the planchet.

2. The smaller strike was delivered by a die fragment trapped between the larger, intact portion of the die and the planchet. This would account for the very small area of design present and the exaggerated tilt. In this scenario, it's possible that the smaller strike came first and the fragment was kicked out of the striking chamber before the second, larger strike was delivered. Of course it's possible that the fragment broke off after the larger strike was delivered, and was driven into the planchet on the second strike.

3. The two strikes were delivered by two different (and presumably adja-

Figure 11a,b. Double-struck dime with the larger strike showing a shattered reverse die. Numerous bi-level die cracks cross a surface covered with multiple sets of clash marks. The obverse face shows such heavy, closely-spaced clashing that the individual clash marks are blurred, along with the low-lying parts of the design. The smaller strike was delivered by a tiny portion of an obverse die. It was delivered at an angle of approximately 45 degrees. See text for further details.

Figure 11c. Close-up of the reverse face.

cent) die pairs. Perhaps the reverse die of one pair and the obverse die of the other pair were breaking apart. Or perhaps an obverse die fragment from the chamber with the shattered reverse die was kicked into the adjacent chamber and driven into the planchet in a previous or subsequent strike.

Regardless of which scenario is correct, it is a fascinating error to ponder.

There is no end to the diversity of shattered dies. They are a marvelous tool for studying brittle fracture in die steel. I invite the members of CONECA to share their examples with all of us.

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Die Deterioration and it's Affect on a Doubled Die

by Robert (BJ) Neff

A favorite past time is searching rolls of Lincoln cents, with the hopes of finding a treasure or two as one after another of this type coin passes underneath my scope. With luck, sometimes, a search like this will bring a new die or relatively unknown die to light and such was the happening in this instance.

A recent new addition to the CONECA files, by **Dr. James Wiles**, is a 1964-D Lincoln cent which has been assigned a filing number of DDR-012, Class II-C+V-CW which in this case was the find of the moment. It is a strong doubled die reverse, affecting all the peripheral lettering, EPU, the designer's initials and the right and left edges of the stylobate. This is one of the stronger doubled dies for this year and more than likely, the strongest for the Denver mint in 1964.

To ascertain if this die was a new find, it was sent to and examined by CONECA member **Ken Potter** and **Robert Piazza**, who found it to be new and added the die to the files that they maintain. CONECA member **John Wexler** also examined the specimens and found it to be in his files as 1964-D, WDDR-001.

This however was not the end of the story. By an odd coincidence CONECA member **Gene Nichols**, who upon examining the photos that I had sent to him, found that he had an un-attributed doubled die reverse that was very similar to the 1964-D, Lincoln cent, DDR-012 but in a later die state. A comparison of the two coins, side by side, did show that they were from the same die. This presented a rare opportunity to examine two die states together, an EDS and a LDS.

The first picture shows the notching on the lettering UN of UNITED. The top photo is EDS and the bottom photo is LDS. Notice the marked difference in the intensity of the notching.

The next series of photos show the last three letters of STATES and the difference in the notching. While the

Comparison of EDS (above images) and LDS examples of 1964-D 1c DDR012 highlight the marked difference in notching as the die wears.

Notching of the letter C on the LDS coin (bottom images) has been completely obliterated by die wear. Notching visible on NE of ONE has been severely degraded.

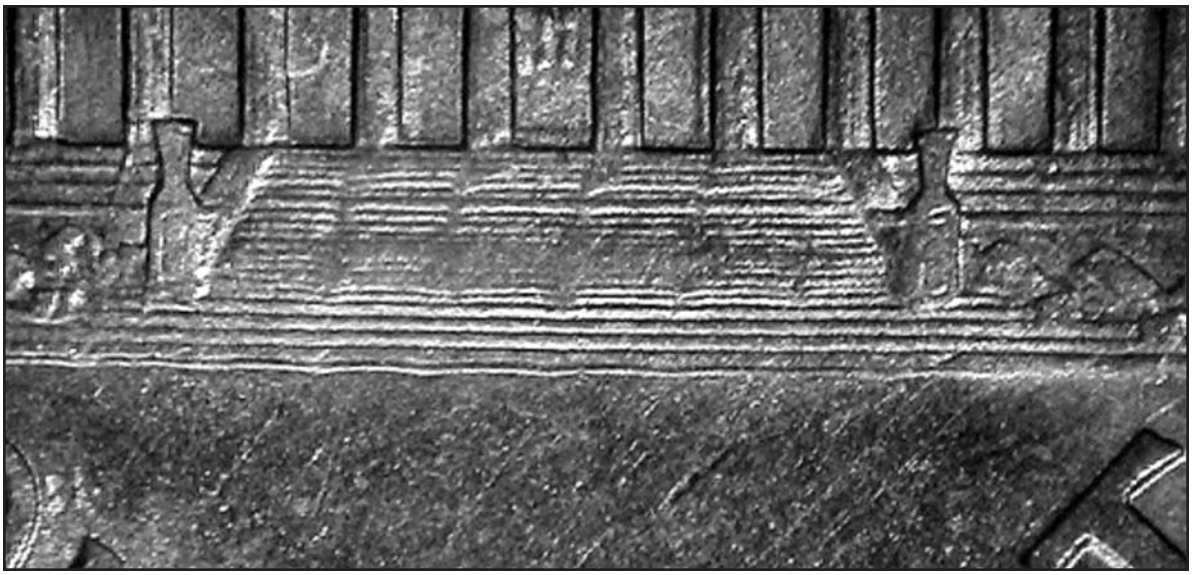
division lines in the S are still apparent in the LDS coin, the notching on the T and E have degraded substantially.

One of the areas more affected by die age is the lettering in AMERICA. Notice that that the letters RIC on the LDS coin can not compare to those of the EDS coin. The division lines seen on the C of the EDS coin have disappeared from the LDS coin while the notching on the R and I is distorted and blurred.

The last picture comparison, shows the NE of ONE. While the notching of the corners is still apparent on the LDS coin, the division lines and some of the doubling has degraded.

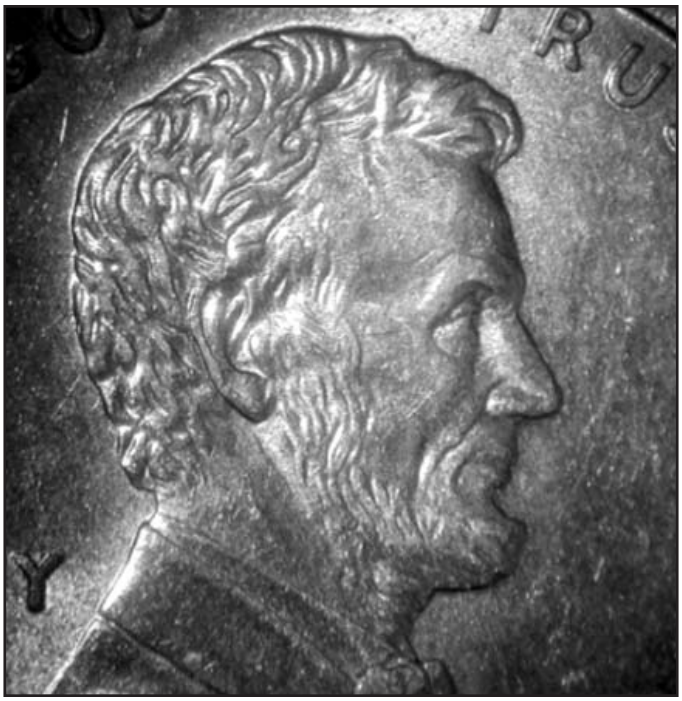
There are other differences between the two die stages not shown, however, a full spread of colored photos, of both the EDS and LDS, taken by Dr. Wiles, can be seen in CONECA's new web page, **VARIETYVISTA.COM**.

While on the subject of different die stages, another interesting item that came from Gene Nichols is a 1999



Gene Nichols has discovered a new obverse mate for this "trail" die (wavy steps) listed as 1999P-1DER-015WS by BJ Neff.

Obverse die mated with Stage "B" reverse of 1999P-1DER-015WS bears many fine die scratches.



Obverse die mated with Stage "C" reverse of 1999P-1DER-015WS does not bear many fine die scratches and is EDS. This new obverse was discovered by Gene Nichols.

"trail" die (wavy steps) that brought to light a obverse die change, while leaving the reverse die in place. This particular die, 1999P-1DER-015WS (my filing number) does not need magnification to be seen for it is that strong.

Stage "B' is identified by the die clashes in bays # 4 and 9 on the reverse die and fine die scratches on the obverse die (presumably to remove the die clash from the obverse). Gene Nichols' coin, while having the reverse die clashes, did not have the fine die scratches on the obverse. Also observed was the fact that the obverse die was EDS, while the reverse die was LDS in Stage "C".

I find it odd that the MINT replaced the obverse die without changing out the reverse die, taking into consideration that the reverse had the much larger fault. Could it be the MINT's policy that the obverse of a coin is the more important feature or that more obverse dies are made than reverse dies?

It would be, of course, very interesting to see the Stage "A" of this die, the one that does not have the die clashes or the abrading on the obverse die. While CONECA does not recognize "trails" / wavy steps as a variety die yet, nor do we know the exact cause for this anomaly, work is still be done to find the answers for these die faults.

I thank you for reading this article and if you do have any questions concerning either of these dies, please feel free to contact me at wavysteps2003@aol.com ■

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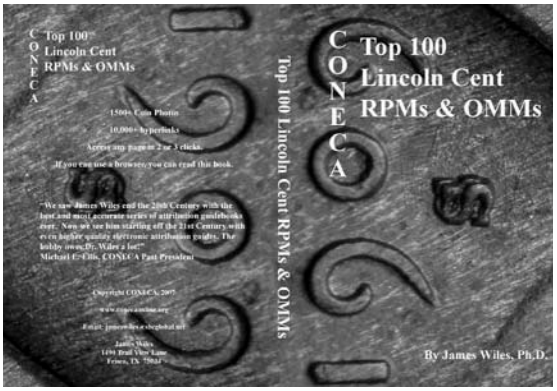

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The Denver Mint Single Squeeze Doubled Die

by Robert (BJ) Neff

It is often lamented, by those west of the Mississippi, that it is not worth the time and effort to search for the elusive doubled dies from the Denver Mint for they are just not made.

In part, that may be true for it does seem that quality control is higher at that mint and the machinery used in die making is newer. However, they too seem to slip at times.

The first doubled dies that could possibly be attributed to the single squeeze were found by CONECA members **Gene Nichols** and **Bill Slaughter**. They three obverse Lincoln cent dies from 1995 that were discovered and listed in the CONECA files. This was during the time period that both mints were using a combination of multi-hubbing and the single squeeze hubbing processes, so either one of the methods could have been to blame for those varieties. This may also be said

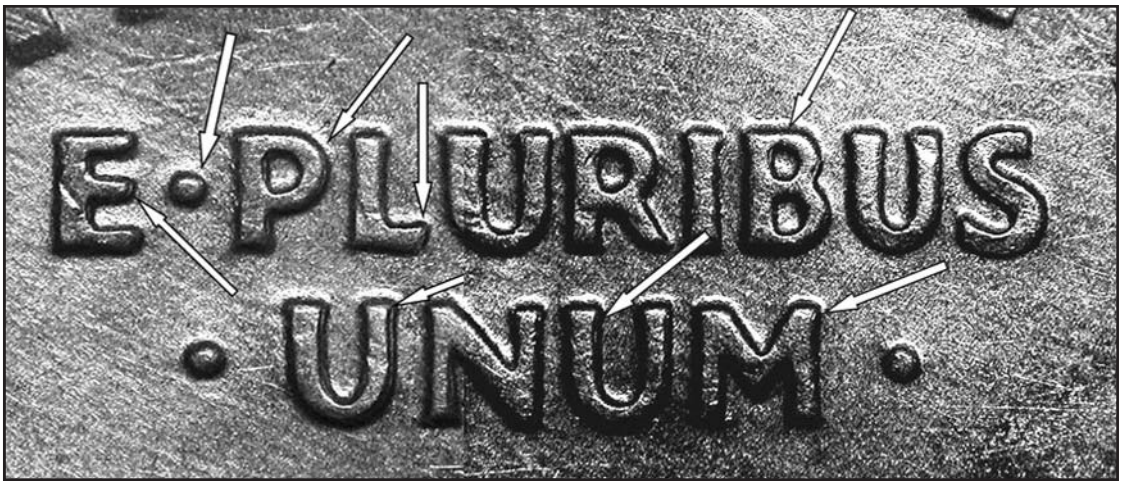


Figure 1: 2003-D Lincoln cent submitted by Bill Slaughter appears to have the same type doubling as the 2004-D Lincoln cents. It being a Class IV + VIII doubled die with medium spread on the lettering and the periods.

Figure 2: 2002-D Lincoln cent submitted by Richard Cooper of Arizona bears similar doubling to Bill Slaughter's 2003-D. Also a Class IV + VIII doubled die, although not quite as strong, as the 2004-D and 2003-D specimens.

for the 1996 –D, obverse Lincoln cent doubled die (DDO-001) found by **Ray Davis**.

In the year 2005, the flood of doubled dies on the Minnesota quarter came mostly from the Philadelphia mint, however, the Denver mint did manage to produce a few of these reverse doubled dies. And we also can not forget the OIV (Ocean in View) nickel where the Denver Mint again let quality control slip, making a few of these reverse doubled dies. There is also the large amount of Class VIII doubled dies that are centered around Lincoln's statue on the reverse and while the majority of these are found on Philadelphia minted coins, the Denver mint has its share of this type doubled die too. There is also the "wavy steps" and "trail" dies, which can be produced by either mint.

It seemed that the 2004 was the year for major break through in finding single squeeze doubled dies. The Peace or Handshake nickel obverse doubled die (DDO-001) was the first to hit the news, followed closely by the 2004 Philadelphia minted Lincoln cent (DDR-001). It was after both those finds that CONECA member **Billy Crawford** reported a 2004-D Lincoln cent from the Denver Mint that had doubling centered around the EPU on the reverse. This was the first confirmed Class IV + VIII single squeeze doubled die from that mint. While CONECA has two of this type doubled die listed, other organizations have up to 8 of this type doubling listed.

Recently, **Bill Slaughter** contacted me and requested that I look at a 2003 Lincoln cent from Denver that appeared to have the same type doubling as the 2004-D Lincoln cents. Although the coin had oxidation and pitting, it was very easy to see that this was indeed a similar Class IV + VIII doubled die. There was a medium spread on the lettering and the periods, with both notching and division lines apparent on the EPU. The doubling was carried down to the tops of the posts (urns) and the floor of bays # 2 through 10 in the Memorial building. There was also pronounced doubling of the stairs on the left side of the Memorial building. See Figure 1 for pictures of this die.

Soon after that, I was contacted by **Richard Cooper** of Arizona who said that he had found a die similar to Slaughter's 2003-D, except this one was a 2002-D. Upon attributing Cooper's die, it was determined that this too was a Class IV + VIII doubled die with similar doubling, although not quite as strong, as the 2004-D and 2003-D specimens. The doubling on the 2002-D was prevalent on the lettering of UNUM, E and the L of PLURIBUS, with notching and division lines appearing on those letters. Below are the pictures of the doubling.

It is odd that this doubling from the Denver mint has the appearance of the old multi-hubbing doubled dies, with the deeper division lines and notching and yet we know that they are a product of the single squeeze hubbing method. Odder yet is the repetitive area of doubling in the three consecutive years as if it were a non-correctible fault of one or more die presses.

What ever the fault was, it has seemed to have disappeared, or has it? Are there more examples of Denver mint doubled dies waiting to be found? Is this type doubled die confined to just those three years, or are there examples of this doubling in 2001, 2005 and 2006 just waiting to be found?

Yes, the Denver Mint does seem to have the better quality control and does produce less varieties, however, they are being made and all it takes is a bit more searching to uncover them them. Who knows, when you check your pocket change the next time, you may be the next person to find that elusive Denver mint doubled die. ■

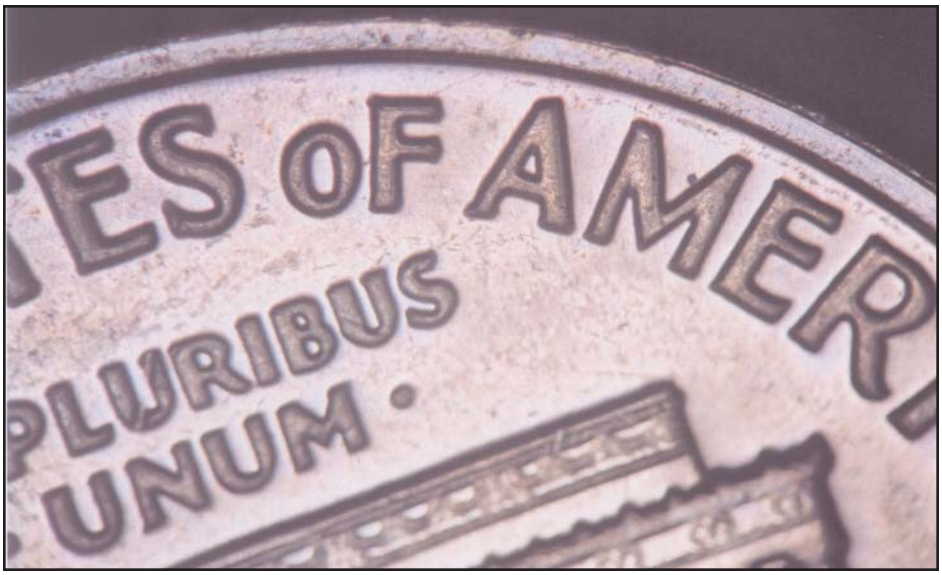
Nine Bags of Wheaties

by Frank Leone

We have all searched through our pocket change for varieties and errors. Most of us have even made the bank run to withdraw rolls of coins rather than deposit them. I'd hazard a guess that a few of us fantasize about working for Coinstar. Such is the life of the numismatist. The thrill of these searches is only appreciated by other numismatists. I know this firsthand, I've bored family members and coworkers for years with my stories and new finds.

I enjoy **Bill O'Rourkes** *Roll Finds* column in *Coin World*. To me, there is nothing more satisfying then to find something of premium value with just some searching. I recently took on a massive undertaking — the purchase and search of nine bags of wheat cents. At 5000 coins per bag, that's a lot of neck aches and hand washing. However, the outcome was very satisfying. Over the next couple issues of *Errorscope*, I'll share some of my discoveries.

It's important to note that these bags were legitimately "unsearched". They were bought from a dealer in New York who in turn purchased them from the public over the years. Im certain some of them were pulled from coin albums and flips and added to the hoard. As such, I'm also certain



1964 Lincoln cent in Proof was found in a bag of common wheaties. Turns out, the coin bears a neat little doubled die reverse.

that he noted the dates on the albums and flips and didnt throw any keys and semi-keys into the grouping. I would also think he checked any 1955s for the doubled-die. Beyond that, you could assume they were "fresh" material. For this freshness factor, I paid a premium. Dealers are paying in the range of $145 to $185 for bags of wheaties. Teens, Twenties, Thirties and S Mints all bring a premium over the "commons" — take a look in the back of any *Coin World* and you will find this information. I decided to examine only certain dates more closely. Its a matter of economics and time. Although it's possible to find a nice or new variety on any date, only a few dates have the known premium varieties that I was hoping to find. And with a mountain of pennies sitting in your dining room, it's a much harder sell to the wife if it goes past four weeks. The dates that I decided to check more closely are the obvious; 1917, 1936, 1941, 1942, 1955, 1958 (ya never know!), and any mint marked cent. Of course I also pulled out anything else of interest. Hundreds of die chips, laminations, and similar minor errors were set aside as well.

Even as I begin this article, the project isn't complete. The initial search is complete, the majority were categorized as mentioned earlier and sold off. The majority of keepers were simply dropped into a big bag to be further sorted. The better coins in the group were set aside with the intent of photographing them and writing this article. At least one USPS Flat Rate box full of the commons found its way to FedEx via their contract with the USPS only to be broken open during shipment. That's a frustrating story, maybe for some other day.

Lets get to the coins I hear y'all yelling! Well, the first coin to come out of the bags is the mostly unlikely you'd be expecting. A 1964 Proof Lincoln...with a doubled die reverse!

Not rare and valuable but just a very odd thing. Reminds me of "my" greatest circulation find. My Dad brought home a coin that didn't fit in a parking meter. I had no idea what it was and he kept insisting it was U.S. I disagreed. I'm pretty sure I knew how to read at the time, but I guess I was just looking at the "weird" design. It was a 3 cent nickel, obverse legend reads UNITED STATES OF AMERICA. I still have that one. Again, not expensive but the rarest of circulation finds.

Getting back to my 1964 Proof Memorial found in a bag of wheaties. The doubling is easily seen with the aid of a loupe on ES OF AMERICA (this may be more difficult to see in the photo). Value of this doubled die is likely in the $8-$15 range. Not bad

for 3 cents or so. Another interesting cent found in the bags bore a sticker reading "Red's Coming Back To Town" — Maybe a baseball reference to the hey day of The Big Red Machine Days. The Red's had a great ball club in 1975 & 1976. The Yankees of course gained their revenge (but against the Dodgers) in 1977 & 1978. Value of this (sort of) memento of major league baseball...3 cents or so. But I can give it to a kid with this story and that's worth much more.

The last find I'll mention in this isue is a great one. It's a split after struck dated 1941. The entire reverse has fallen away after the strike leaving just the faintest impression of Lincoln visible through the striations. I like to call this effect "bleed through" as you are seeing the result of the extreme striking pressure on the inside of the coin. Oftentimes, you will not need direct contact with the die face in order to leave some impression. I use this same term for the "blank" side of two planchets fed together as they often bear faint design to some degree. ■

A Fake Second Strike – Deconstructed

By Mike Diamond

When I first saw the coin shown in Figure 1 I was quite excited. It appeared to be a flipover, in-collar double strike with a massive vertical misalignment (tilted die error) on the second strike. I've never seen such a dramatic vertical misalignment in an otherwise intact die. To find such an error as a follow-up to a normal strike is an extraordinary fluke. But anything can happen once.

I have seen any number of incomplete strikes delivered at an angle by fake dies, but these are usually obvious. They almost always show a telltale blended overlap between primary and secondary design elements. This coin had a convincing look about it and there were several signs of authenticity. Lincoln's head was convincingly flattened during the second strike by the field portion of the obverse die. There was the sharp but intermittent penetration of first-strike details through the second strike. This is best seen where E PLURIBUS UNUM of the second strike overlaps the date from the first strike and where Lincoln's face overlaps the pillars of the Memorial.

The two strikes were generated by different die pairs. The first strike shows lots of die scratches around Lincoln's bust while the second strike doesn't. That's not particularly worrisome, as lots of second strikes are produced by either an adjacent die pair, or an entirely different press as the result of a delayed second strike (Diamond, in press).

Everything was looking good – until I looked a little closer. Detailed inspection revealed an ever-lengthening list of red flags that gradually undermined my confidence in its authenticity.

Let's go down that list and rate each anomaly on a scale of 1 to 3, with 1 being least significant and 3 being most significant.

1. With die tilt this great, one would have expected the affected die to have been horizontally misaligned as well. When one pole of a die face tilts down it also tilts in. Neither face is misaligned relative to the other. Significance level: 3

2. Even without a horizontal misalignment, one would have at least expected strong finning of one or both design rims as a result of greatly increased effective striking pressure on the left side. A fin is a thin, vertical flange that extends vertically from the rim/edge junction. It results from coin metal squeezing into the narrow gap between die neck and collar. Neither face shows a normal fin. Significance level: 3

3. Because of increased effective striking pressure, one would have expected a very well-defined design

Figure 1a,b. A 1985 cent with what appears to be a flipover, in-collar double-strike. The second strike shows a massive vertical misalignment (tilted die error). The photos are oriented so that the second strike is in the upright position. Coin on loan from Fred Weinberg.

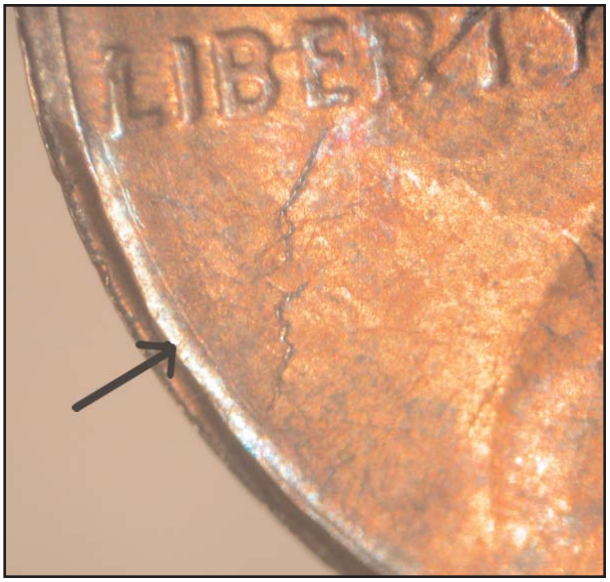


Figure 2. A close-up of obverse face of the second strike. The arrow points to a step-down from the field a narrow shelf. There is no design rim here at all.

Figure 3. A close-up of IN GOD WE TRUST from the second strike. The letters show low relief and are somewhat indistinct. The "I" of IN is especially faint.

rim to be present on the left side. Instead, the design rim is entirely missing in many areas and where it is present, it is abnormally low and flat. Significance level: 3

4. There is a step-down from the field to a narrow shelf from 7:00 to 9:00 (obverse clock position). This is completely unexpected, even in a normal strike (Fig. 2). Significance level: 3

5. Because of increased effective striking pressure, design details should be especially well-struck on the left side. Instead, IN GOD WE TRUST of the second strike shows unusually low relief, with the "I" of IN being quite faint (Fig. 1 and 3). Significance level: 3

6. Although the coin was apparently struck in-collar on the second strike, there is no "re-entry" partial collar (Fig. 4). Usually, a struck coin has difficulty fitting back into the collar and ends up with a partial collar. Every other flipover, in-collar, double-struck cent of recent vintage that I've encountered shows this. However, there are exceptions, so this is not a critical flaw. Significance level:1

7. The edge on the left side is unusually wide, which could be construed as a sign of increased effective striking pressure and thus a sign of authenticity (Fig. 4). However, the devil is in the details. The increased thickness is not due to the formation of a typical fin. It almost seems as if this part of the coin was pushed in and forced up. Significance level: 2

8. This widened edge carries very coarse vertical striations, which is not typical of a finned coin, an in-collar double-strike, or a normal strike (Fig. 4). One could argue that the collar was worn or damaged, but this amounts to special pleading in my view. Significance level: 2

9. UNITED of the second strike shows a peculiar flat relief (Fig. 5). It almost looks like the letters were crushed flat. Significance level:3

10. The edge of the reverse face is prolonged into a sharp vertical flange, but it does not take the form of a fin. There is, instead, a gradual

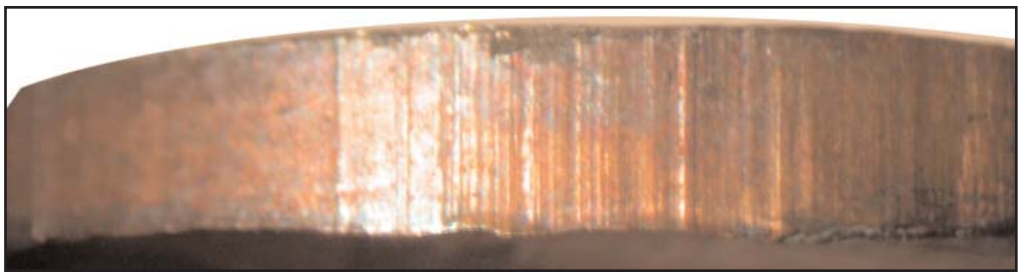


Figure 4. Close-up of the edge adjacent to the second strike. There is no re-entry partial collar and the edge shows coarse vertical striations.

Figure 5. Close-up of UNITED from the second strike. The letters show abnormally low relief and look like they've been flattened. The copper plating in this area appears cracked and buckled and there is a profusion of strange raised lines. Note how the surface of the coin slopes gradually upward toward a sharp, elevated margin. There is no design rim here.

sloping up of the coin's surface to the apex of the flange (Fig.5). It's totally incompatible with a genuine strike. Significance level: 3

11. The copper plating is buckled along the tops of the letters of UNITED (Fig 5). This may be a symptom of lateral compressive forces of unknown origin. It's definitely anomalous. Significance level: 3

12. The surface of the coin in and around UNITED shows numerous short ridges that run roughly parallel to the edge of the coin (Fig. 6). The plating seems to have split here. These may also reflect the presence of lateral compressive forces. Significance level: 3

13. A network of longer, straighter lines criss-crosses the left side of the coin (Fig. 7). These are not die scratches, as they are just as strong over the design as they are in the field. They are strongest and most numerous around UNITED but extend into relatively undistorted parts of the design, like the pillars of the Memorial. They could be impressions from whatever flattened the letters, IF the flattening is due to compression damage. They also could conceivably be tool marks on a fake die in which these letters were shallowly recessed. Significance level:3

14. The field around and below LIBERTY of the second strike shows a peculiar texture that is a little bit like fine leather (Fig.8). Along with this is a fine cracking and crazing of the copper plating. Weird, but hard to interpret. Significance level: 2

15. Despite apparently being struck fully within the collar, the coin is out-of-round. Instead of hovering around the normal 19.05 mm, its diameter ranges from 19.11mm to 19.20mm. Diameter is greatest along an axis that bisects the second strike. That's surprising given other evidence of lateral compressive forces at work in this area. Highly suspicious. Significance level: 3

There you have it. A long list of features that are incompatible with anything a coinage press could produce.

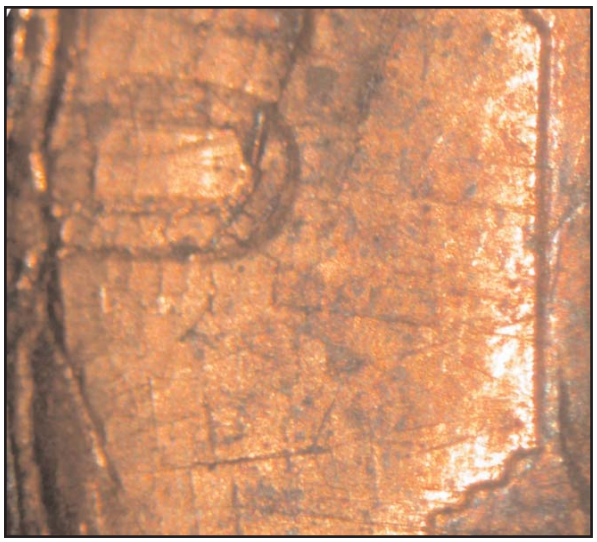


Figure 7. A network of longer, straighter, raised lines can be seen in this photo, which includes the area between UNITED and the side of the Memorial. These are not die scratches. They may be tool marks or the impression of an object that may have flattened this area.

Figure 6. Extreme close-up of UNITED showing the many short, gently curved ridges that parallel the perimeter of the coin. The plating is cracked here and the exposed zinc appears to have oxidized.

Figure 8. A close-up of the area around and below LIBERTY of the second strike, showing a leathery texture and a pattern of cracking and crazing.

There can be little doubt that the second strike was delivered at an angle by a pair of fake dies within a fake collar. The fact that the counterfeiters managed to duplicate some of the features of a genuine double-strike is a credit to their skill. I have seen other counterfeit second strikes which also managed to duplicate in one or another aspect the appearance of a genuine double-strike. But these are usually outweighed by abundant evidence of mischief elsewhere.

When evaluating a possible counterfeit strike, it's not necessary to determine exactly how it was produced. It is sufficient merely to show that its appearance violates the finite constraints of the minting process. And that's what I've tried to do here.

References

Diamond, Mike (in press) Delayed second strikes. *Errorscope* ■

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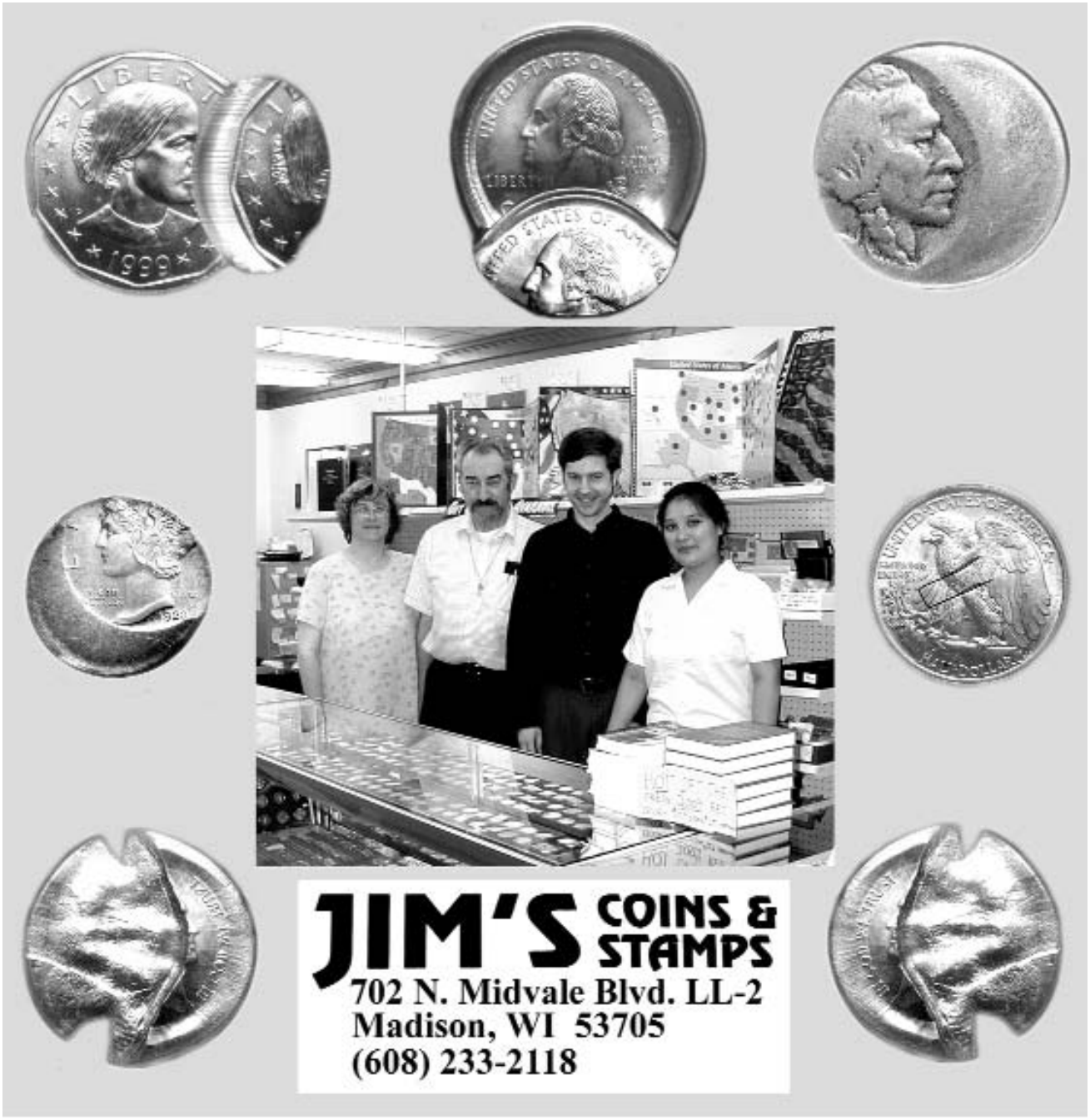

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CONECA at ANA Convention in Milwaukee
Thursday August 9 through Sunday August 12, 2007

All CONECA Members:

Our club will have a table at the ANA Convention in Milwaukee, WI from Thursday August 9 through Sunday August 12, 2007, and we need members to serve as official club assistants at the table.

If you're planning to attend the convention, and want to volunteer to be club assistant at our table, please: 1. Look at the attached table schedule, 2. Pick one or more time slots that you can be at the table, and 3. Send an e-mail to Al Raddi at alraddi@aol.com. He will make a master schedule and distribute it to all members who have volunteered to serve as club assistants at our table.

The table will have copies of *Errorscope* and some low-value error coins to give away and membership applications. A microscope, a hand lens, a head magnifier, a micrometer, a spreading caliper, a magnet, and portable scale will also be available for club assistants to use.

PS Don't forget the **Errorama Banquet on Friday night at Mader's German Restaurant**. If you plan to attend please let Al Raddi know at alraddi@aol.com.

CONECA Launches New Electronic Newsletter

by Frank Leone

Always striving to give more to the the CONECA membership and the entire numismatic community, CONECA has launched the *Errorscope Online Supplement*. This document will have the same look and feel as the current bi-monthly printed *Errorscope* and will be made available as a PDF file on the Club's web site www.conecaonline.org

The benefits are many; Images will be in color, print costs to the club are zero, page count can vary as needed, mailing costs are zero, print delays are avoided, issue dates can vary as needed. Members will be alerted to each new issue via email.

The electronic supplement will be just that, additional information provided to members and all of numismatics. All current advertisers will have their ads appear in the Supplement issue as well.

To kick start the program, the first issue of the Supplement will contain all of the current May/June issue of *Errorscope* that will be printed and mailed to members.

The Club's Board is excited about this new Club production and invites you to stop by their web site at www.conecaonline.org

Club News

by Frank Leone

MICHAEL S. TURRINI Writes :

Monday, July 15, 2007 — I have been attending the Canadian Numismatic Association (CNA) Convention, in Niagara Falls, Ontario, Canada----even cruised the world famous 'Maid of the Mist' voyage to and at the Falls with esteemed fellow errorist, **Lee H. Gong**, who tried to accidentally have me fall overboard!

During our 2006 and 2007 sorties into Canada, Mr. Gong and I made contacts and conversations with their embryotic 'Canadian Error and Variety Numismatic Association' (CEVNA). We spent some hours sharing the error hobby----as well as doing our infamous 'Error Duo Table----with our northern Canadian brothers and sisters. We hope to return in July 2008 when the CNA gathers at Ottawa, Ontario, Canada's national capital and would like to have an CONECA presence and collaboration with our northern brothers and sisters, our fellow errorists.

Sidebar: It was a most special time when Mr. Gong was repeatedly asked to examine Canadian, and other, errors. Seems a lot of 'back door productions'.

Also: Their **CEVNA** has its own Website: www.cevna.com

My intention is to elaborate more later and seek something with an endorsement and openness from and by CONECA. As this point, it is a thought germinating within the gray matter of my old and tired mind and brain cells.

Remember: Have Fun With Your Hobby! Always Serve Others! Enjoy Your Collecting! And, Create Hope!

MICHAEL S. TURRINI

Contributing to our Club's online newsletter couldn't be easier.

Just send notes or images that you would like to appear to the Editor at FLRC@AOL.COM

We're interested in your new finds, your favorite stories, and especially pictures and tales from your coin shows !

Unusual Lamination Found on 1957 Lincoln Cent

by Mike Diamond

This uncirculated 1957 cent has a peculiar lamination error (or at least I think it's a lamination error). It shows a large, semilunar (half-moon shaped) flake of copper on the obverse that is completely detached. The tips of the flake are still attached to the coin, though. There is no fissure surrounding the attached tips, indicating it's not a retained strike-through, i.e. it's not a piece of copper from another cent. The coin's weight is also normal.

Beneath the flake is a recessed area that is oddly smooth in its lower portion. This recessed area is, itself, lifting up along the straight edge. So it seems we have a bilaminar, lamination error. Why it should have assumed such an odd shape is beyond me. ■

Editor's Note - It's always nice to have the portion of lamination that falls away. This is a great example of a two piece error that wouldn't cost an arm and a leg to purchase.