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DATE NUMERAL VARIETIES OF 1952 PERTH MINT PENNIES

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Australian predecimal bronze coinage offers numerous varieties to interest the collector. Besides important changes in master die types and many variations in “dot mintmarks”, perhaps the most interesting are the unusual and distinctive date numeral varieties that occur on 1952 Perth pennies. As a collector I’ve always found these particular varieties to be fascinating but also problematic due to inconsistencies in their descriptions in the literature. Until recently, the numismatic challenge of properly sorting out the origin of these varieties had been beyond my reach. However, recently available Perth Mint records^{1,2} together with the accumulation of a sufficient number of examples of these varieties in my reference collection have now provided a basis for comprehensive study to sort out their origin based on the dies used to strike them. This new effort follows Howard Mills’ detailed survey of these varieties published some years ago³ and various standard catalogue listings of these varieties by a number of other writers.⁴⁻⁶ Results of the present study, which were originally prepared for publication in *The Journal of the Australian Numismatic Society* but are now presented here, suggest that certain varieties which have long been listed do not stand up to numismatic scrutiny.

The date numeral variations found on 1952 Perth pennies arose during the important changeover to the production of working dies at the Perth Mint in 1952, all working dies previously having been supplied by Melbourne. It now seems clear that it was

early in this transition period that most of the interesting date numeral varieties were produced. While the newly available records from the Perth Mint are incomplete, later correspondence in the files² indicates that the first dated master tools were not considered to be satisfactory and that these were quickly replaced by new tools, which clearly were of the much more common reverse D master die type employing the “broad 2” numeral. Records from the Perth Mint² have also provided a few surprises, including the fact that 1952 dated penny working dies continued to be made well into 1953. In short, the present effort to classify and understand the origin of these date varieties has turned out to be a fascinating numismatic study.

Date Numeral Varieties

While several variations in the style of the numeral “2” in the date of 1952 Perth pennies are readily observed, going by such descriptions as “broad 2”, “wedge base 2”, “pointed serif 2” and “square serif 2”, collecting them presents a dilemma for the collector. Much of this is due to inconsistencies in the numismatic literature, with the number of different varieties listed in standard references ranging from five to thirteen.³⁻⁶ Among the less glamorous and more tedious tasks of numismatic research is periodic reassessment to refine our understanding of the relationships between coins and to update previous listings by incorporating these findings. Here, approaches based on under-

standing the origin of the dies used to strike coins can be especially valuable in assessing the numismatic relevance of problematic coins. One good example is the 1952 Perth penny illustrated in early editions of Rennicks⁵ as B63D and described as “2 with wedge serif”, a coin which is unlisted and undescribed anywhere else. Another is the “pointed serif 2, leans left” variety listed by several authors,^{3,4,6} but not illustrated by any photograph.

The purpose of this article is to revisit the subject of date numeral varieties of 1952 Perth pennies based on careful study of mint records and analysis of numismatic markers on coins, the goal being a new understanding of their origin based on the individual working dies and the dated punches (or hubs) used in producing them. Precision in these observations has been aided by use of a magnifier with reticle, allowing careful measurement and comparison of features on the coins. Since analysis is carried down to the level of individual working dies for the varieties of interest, access to a large number of coins is necessary. Fortunately, the condition of the coins themselves is not especially important, and coins which might otherwise be considered to be culls (damaged, cleaned, etc.) are adequate as long as key distinguishing features and die cracks can be observed.

Dies and Die Tools Used for 1952 Perth Mint Pennies

An understanding of the origin of the date numeral varieties of 1952 Perth pennies, begins with understanding the process of producing the dies used to strike these coins. Since the date is on the reverse, it is only the reverse dies and tools that are relevant

for understanding these varieties. Although the Annual Report of the Royal Mint for 1952 shows that seven reverse master dies and punches for pennies were produced at Perth along with 210 reverse working dies,⁷ careful study of newly available records from the Perth Mint shows that 1952 dated reverse penny dies continued to be made until the 5th of June 1953, with a total of 300 1952 dated dies produced.² This unusual situation was due to the fact that new Australian tools for the Queen Elizabeth II obverse were not prepared by London until late May of 1953.² Specific instructions from the Commonwealth Treasury given in a letter dated 24 April 1953, were to “immediately commence production of coins bearing the new obverse and discontinue using George VI dies” once the new tools were received.² In the meantime only the George VI obverse was available, and this could only be appropriately paired with reverses dated 1952.

Unfortunately, detailed Perth Mint records concerning the production of 1952 dated master dies (or “matrices”) and punches for pennies have proven to be elusive, and no direct contemporary Perth Mint correspondence related to the date numeral varieties has yet been located in the files. However, on 2 March 1962 in a response to queries by S.V. Hagley about such date numeral varieties the Perth Mint replied, “We were not happy with the first 1952 date produced and as soon as possible we produced another matrix and punch which we thought more satisfactory”.² This would seem to confirm first that two 1952 dated sets of a master die and punch each (a total of four 1952 dated tools) were prepared, and second that the numeral type on the initial set of tools was not considered to be satisfactory and

these were quickly replaced by the another set. The letter also states that all of the seven reverse punches and matrices (master dies) made in 1952 were not necessarily dated with that year, and suggested that “some were for 1953 and one or two could have been for 1951”. That it is unlikely that any of the tools produced in 1952 were dated 1953 is evident in the Die Account Book, which shows a date of May 18, 1953 for the first batch of twelve 1953 dated penny dies (numbered A691-A702) with the last batch of dies from December 1952 numbered A469-A480.² Here, it should be pointed out that dies produced at the Perth Mint were numbered consecutively without regard to year or denomination. Although the recollection in the letter to Mr. Hagley on the possibility of 1953 dated tools cannot be completely discounted, the present analysis, based on careful examination of both coins, mint records, and die production methods suggests that of the seven reverse master tools produced at the Perth Mint in 1952, four comprising two different master die types were dated 1952, two were de-dated punches (one of each die type), and one was a 1951 dated reverse D master die produced directly from the punch received from London.

These would have been prepared starting with the master tools for the two different reverse die types provided directly from the Royal Mint in 1951 (Table 1).⁸ The tools from London included a reverse working punch of the original 1938 style (Rev A) and a reverse master die of the style of the 1951 London PL pennies (Rev D). That both die types were used at Perth in 1952 can be readily confirmed by direct observation of coins,^{8,9} and is acknowledged in newly available correspondence from the Perth Mint

dated June 9, 1958 in reply to a query from Tom Hanley (then Secretary) of the Australian Numismatic Society, which had enclosed photographs of both the “broad 2” reverse D and “pointed serif 2” reverse A types.² It had always been somewhat of a mystery to me why two penny die types were sent by London to the Perth mint in 1951. The answer to this is provided in an airmail letter from London dated September 4, 1951 informing the Perth Mint that the penny (reverse A) master die of 29 Aug 1951 was being sent.² The letter regrets delays in sending the master die (or matrix) which had been promised at the end of May, saying that “To expedite the pence we had to use the 1d matrix then being made to supply to you, for our own purposes, and replace this with another matrix as opportunity offered.” It now seems clear that the original matrix (or master die) was of the reverse D type and was needed in London to produce punches for the 1951 PL pennies. While a reverse D punch from this (dated 7 June 1951) was sent to Perth in July, the promised master die which was sent later was of the reverse A type. The two master die types are easily distinguished by the alignment of the upright of the “P” of PENNY, which points to a large border bead on reverse A, and between beads on reverse D. It interesting to note that unlike the reverse A master die used in Melbourne which has a distinctive serif at the top of the numeral “5”, both types of master tools supplied to Perth by London exhibit a numeral “5” without serif. To further signify the changeover to preparation of working dies at Perth, for 1952 the dot mintmark was moved from after the Y of PENNY to after the A of AUSTRALIA.^{10,11}

Since the reverse master tools received

Date	Notes	Comment
10 May 1951	Kangaroo reverse prep punch created from master die of 5 Nov 1937 and de-dated to 19--. Transferred to Royal Mint collection, 1964.	Rev A
7 June 1951	Kangaroo reverse master die dated 1951 with PL mintmark from de-dated reduction punch of 13 Oct 1937. Date completed, beading and PL added. Transferred to Royal Mint collection, 1964.	Rev D
28 June 1951	Kangaroo reverse working punch dated 1951 from above with PL removed. Sent to Perth.	Rev D
29 Aug 1951	Kangaroo reverse master die dated 1951 from prep punch of 10 May 1951 and therefore already beaded. Sent to Perth.	Rev A

Table 1. Australian penny reverse tools prepared at Royal Mint, London for Perth in 1951.

from the Royal Mint in London both carried a date of 1951, it would have first been necessary to prepare derivative master tools with altered dates. While tools such as a punch (or hub) de-dated to “195-” could be used to produce individual working dies directly by adding the final date numeral and mintmark by hand, it would have been much more efficient to prepare a fully dated and mintmarked punch for fabricating the many reverse dies needed for coining 1952 pennies. In the absence of detailed information from mint records, one can only develop a plausible account of how the seven derivative master tools might have been prepared at Perth. Here, fabrication of a 1952 dated and mintedmarked punch from the reverse A master die provided by London (Table 1) would seem to require that three master tools be fabricated at Perth. First, the 1951 dated reverse A master die from London could be used to make a reverse A punch from which

the last date numeral would be removed to create a de-dated “195-” master punch (let’s call it tool #1). This could then be directly used to fabricate 1952 dated individual working dies by the separate addition of the final date numeral and mintmark. In a similar way, tool #1 could also be used to make a 1952 dated and mintmarked die which could be preserved as a derivative reverse A master die (tool #2), and used to make a new 1952 dated reverse A master punch (tool #3). Here, what distinguishes a derivative master die (or matrix) is that it is dedicated for further tool production and is not used as a die for striking coins. In the case of reverse D type tools, one additional step (four tools) might be required in the cascade of tool production since a master punch, not a die, was supplied by London (see Table 1). Here, the 1951 dated reverse D master punch from London could first be used to make a 1951 dated reverse D mas-

ter die (tool #4) similar to that supplied by London for reverse A, followed by a series of steps similar to that above for tools #1 through #3, resulting in a de-dated "195-" reverse D punch (tool #5), followed by a new 1952 dated and mintmarked master die (tool #6) and master punch (tool #7), respectively. While this process can plausibly account for all seven reverse tools made at the Perth Mint in 1952, it should be pointed out that two fewer tools might be required if the final date numeral were simply ground off the original reverse D master punch supplied by London, although this would perhaps be considered a risky move for a mint with little die fabrication experience.

Howard L. Mills' detailed survey³ of some 9,647 Perth mint pennies dated 1952 has provided an especially valuable resource for the present study, as it would be nearly impossible today to collect a random sample of so many coins of a single year and mint. While Mr. Mills did not formally classify coins in his survey by master die type, his descriptions of the numeral styles and mintmarks are sufficiently detailed that it is straightforward to determine which were reverse A and which reverse D. Results of his survey indicate that about 93% of 1952 Perth pennies were of the reverse D type and 7% reverse A. Examination of Perth mint records shows that of the 300 reverse penny dies made, all but nine were used to produce coins. If one further assumes an average number of coins per die, Mill's survey results would suggest that about 20 reverse A dies were used, with the balance being reverse D.

The Perth Mint's "Die Account" book² shows that the first transfer of reverse penny dies to the coining department occurred on April 3, 1952 with 24 dies transferred. These reverses made at Perth were then

paired with obverse dies supplied by Melbourne, with the first production of 1952 dated pennies on April 23rd. Of this initial batch of reverse penny dies, all but one was used to produce coins, with the number of coins struck per die ranging from 79,200 to 280,800, yielding a total of 4,183,200 struck. Using an overall mintage figure for 1952 Perth pennies of 45.5 million this would amount to about 9.2%, in reasonable agreement with the 7% figure derived from Mills' survey. Based on this and other considerations it now seems likely that these were all reverse A coins.

The next batch of six reverse dies was transferred about a month later on May 5th, with five of these used to strike coins. It seems likely that these were from an initial trial batch of reverse D dies produced from a dated punch, but without the availability of detailed records from the die department this cannot be confirmed. Additional batches of reverse dies came in rapid succession, with 12 dies on May 26th, 12 on June 10th, and 24 on June 24th. It now seems virtually certain that these and all subsequent dies dated 1952 would have been of the reverse D type.

Classification and Analysis of Numeral 2 Varieties

Production of 1952 dated dies at the Perth mint would have required both the addition of a date numeral 2 and mintmark dot after the A of AUSTRALIA. Since these would have been added to the dies using individual hand punches, the combination of the style of the final numeral and its position together with the position of the dot mintmark provides a robust numismatic marker for these dies. Consequently, a careful survey of coins was undertaken in an attempt to determine

the number of different dated and mintmarked master punches or individually dated working dies that were used in preparing them.

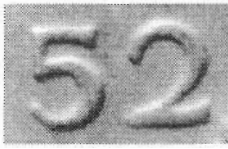
The first step was overall classification of the coins by date numeral and dot mintmark position, with the results showing only four distinctive combinations to exist. Within each of these combinations, careful examination of coins for die cracks or other distinctive markers such as die doubling was used to determine whether more than one individual working die was used for each type. Here, die cracks provide especially distinctive “fingerprints” which can be seen as irregular raised lines due to fractures or breaks in the die near the end of its useful life. “Doubled die” coins also provide distinctive markers that can be used for identifying particular working dies, since a wide variety of misalignments can occur, such as rotations, offsets, pivots, etc. Because die doubling occurs during initial production of the working die, all coins struck from this will exhibit the same features although wear may eventually affect parts in lower relief. When coins of the same overall type are observed with different die cracks or die doubling, this is persuasive evidence that a dated and mintmarked punch was used to produce the dies used to strike them. Because die cracks and doublings on 1952 Perth pennies are scarce, this approach requires access to a relatively large number of coins for examination.

A reference collection of some 368 Perth mint pennies dated 1952 was utilized for the present study. It should be pointed out the distribution of these was highly non-random and strongly weighted toward scarcer varieties with 166 reverse A and 202 reverse D coins included. Survey results showed four distinctly different combinations of date

numeral and mintmark positions. Two major variants which modify the appearance of the final date numeral were also observed, along with other minor variants. It should be noted that the date numeral types all differ significantly from the style of the numeral 2 used for Melbourne mint pennies of 1952, which appears to be identical to that used on the 1942 penny dies prepared at Melbourne for use in Perth. Results for Perth mint numeral varieties of 1952 are discussed with reference to the numismatic literature for each of the basic types below, with reference numbers given in parenthesis. Where possible, estimates of the occurrence for each type are also presented based on analysis of Mills’ survey results.³ However it should be pointed out that some caution is justified here due to known variability in the regional distribution of Australian coins,¹² and the possibility that non-random factors may have influenced how the coins in the survey were collected (especially in the case of some of the scarcer varieties).

Broad 2

The usual form of the numeral exhibits a broad thin loop of the 2 as shown in Figure 1a. This is the standard form of the date for 1952 Perth mint pennies and based on Mills’ extensive survey occurs on about 93% of the coins. Not surprisingly, this is listed by all authors including Dean (P52B), Skinner (B63), Clarke (117) and Mills (1). The “broad 2” variety occurs exclusively on the 1951 style reverse D coins, and all specimens examined exhibit the same placement of the date numeral with a large round dot mintmark about 0.7 mm in diameter and 1.0 mm from the base of the letter A, as shown in Figure 1b. This alone strongly suggests



(1a)



(1b)



(1c)

Figure 1. Details of “Broad 2” variety showing standard numeral (a), dot mintmark position (b), and “Thick Broad 2” variant due to die doubling (c).



(2a)



(2b)

Figure 2. Details of standard “Pointed Serif 2” variety showing standard numeral (a) and dot mintmark position (b).



(3a)



(3b)



(3c)

Figure 3. Details of variants of “Pointed Serif 2” date numeral showing progression of more vertical “fishtail” appearance (a) and (b), and with lump on serif (c).

that these dies were all produced from a single dated and mintmarked punch (or hub). This supposition has been confirmed in the present study by the observation of multiple coins of this type with distinctly different reverse die cracks.

A variant of the “broad 2” with thicker date figures, which is especially noticeable near the base of the loop on the 2, is listed only by Clarke (117a). This is apparently due to a doubled reverse die as shown in Figure 1c where doubling is visible at the base and loop of the 2. Here, evidence of doubling on the 2 of the date is easily worn away but doubling remains more visible on PENNY, especially the splitting on the lower

serif of the E which is visible even on fairly worn coins. Examination suggests that more than one doubled reverse die exhibits the thick date numeral 2, including multiple specimens of each which exhibit respectively, a strongly split lower serif on the E, a weakly split lower serif on the E, and thicker numerals without any observable splitting on the E. In view of the large number of dies estimated to have been prepared using this dated reverse D punch (perhaps 276), it should not be too surprising that multiple working dies with sufficient doubling to exhibit thicker date figures might occur.

Mills also reports a rare variant with the



(4a)



(4b)

Figure 4. Details of “Square Serif 2” from damaged “Pointed Serif 2” die (a) with possible early die state of this variety (b), see text.



(5a)



(5b)



(5c)

Figure 5. Details of “Pointed Serif 2, Leans Right” variety showing orientation of numeral 2 (a) and dot mintmark position (b).



(6a)



(6b)

Figure 6. Details of “Wedge Base 2” variety showing date numeral (a), dot mintmark position (b), and late die state mintmark (c).

broad 2 tilted slightly to the right (0.1% occurrence) and lists this as equivalent to Dean P52C (apparently in error since the photograph in Dean appears to be of a “pointed serif 2” variety). While the possibility of a rare broad 2 die variant should not be dismissed out of hand (a de-dated reverse D punch must have existed), the lack of any evidence of a difference in mintmark position coupled with the fact that other listed “tilted 2” varieties in the literature cannot be distinguished by careful observation suggests that it not be listed here. In any event, the number of reverse D specimens in the present study is too small to be able to be definitive about the existence of other po-

tentially interesting reverse D varieties.

Pointed Serif 2, Standard

The next most common variety encountered is the standard “pointed serif 2” penny shown in Figure 2a, which has a large mintmark dot much closer to the foot of the A of AUSTRALIA and slightly lower than the “broad 2” type (Figure 2b). The “pointed serif 2” pennies are perhaps the most problematic as many closely related varieties with this basic numeral style are listed in the literature. Both large (0.7 mm) and small (0.4 mm) dot mintmark varieties exist. Of these, only the small dot variety with

“pointed serif 2, tilted right” is clearly distinguishable as coming from a different die (this is discussed separately in another section below). Analysis of Mills’ results suggests that taken together, the large dot “pointed serif 2” varieties comprise about 3.7% of 1952 Perth mint pennies. These large dot varieties (as listed in the literature) include the numeral 2 with normal orientation listed by all authors including Dean (P52C), Skinner (B63A), Clarke (117c) and Mills (3, 3A, 4 and 4A), with the sub-varieties by Mills including serif with either a vertical (3 and 3A) or slanting end (4 and 4A). Also listed by Dean (P52F), Clarke (117e) and Mills (5 and 5A) is a variety with the numeral 2 tilted (slightly) to the left. This is not listed by Skinner. Mills’ extensive listing also includes both round (3, 4 and 5) and oval (3A, 4A and 5A) dot sub-varieties with the oval dots slightly scarcer than round dots.

Careful examination of the 89 examples of the “pointed serif 2” penny in the present study (except those with the 2 tilted right, dealt with separately below) show that all exhibit the same position and orientation of the date numeral 2, along with position and size of the mintmark dots (which show only minor differences in shape). Use of a magnifier with reticle clearly shows that the flat base of the numeral 2 is tilted slightly to the left on all specimens, and this may have helped contribute to confusion over the reported existence of both normal and “tilted left” varieties. It now seems clear that there is no distinguishable difference with all specimens examined showing the same slight tilt to the left.

There are some other observable differences between specimens at the end of the tail of the numeral 2 near the base. These are apparently due to die or punch damage.

On “normal” coins the end of the tail is relatively straight and slants upward slightly to the right. However, many specimens show flattening at the lower tip of the tail, often merging with the field of the coin, and in some cases to form what appears to be a small pointed tip which extends somewhat below the base of the 2. These present a more vertical and “fishtail” appearance as shown in the progression of photographs in Figure 3a-b, and such variants are likely to have contributed to much of the confusion in various listings. Careful study indicates that all these subtypes must have been struck from dies produced by single dated and mintmarked punch, as evidenced by identical date numeral and mintmark positions, by multiple specimens with different reverse die cracks, and by the presence of common die markers such as a tiny raised flaw on the outside of the loop of the 2 at the upper right side (which appears on all the different subtypes). Most specimens also exhibit evidence of some re-cutting of the dated punch at the top of the base of the numeral 2. Whether these variations, which would have been immediately obvious on the struck coins, contributed to the Perth Mint’s dissatisfaction with this date configuration is not presently known. In any case, a new dated punch of the “broad 2” type above was soon prepared to replace it. While it is not possible at present to determine the actual number of “pointed serif 2” dies made, die cracks and other features observed on coins indicates that at least six were used, and other evidence in mint records together with Mills’ survey results suggests that as many as 22 dies of this type may have originally been prepared.

Skinner also lists a problematic “wedge serif 2” penny variety (B63D), with the photograph clearly appearing to show a variant

of the “pointed serif 2” standard type based on date numeral position. Here, a portion of the serif on the 2 is missing and the upright ends of the bar on the 5 and base on the 2 both lean slightly to the left. Unfortunately information on the position of the mintmark dot which could help confirm this attribution is unavailable. Mills’ extensive survey of 1952 Perth mint pennies encompassed 9,647 coins, including some 679 reverse A coins, and he failed to turn up a single example of B63D even though he expressly looked for it.³ More careful examination of the B63D photograph in Skinner under magnification appears to show the tiny raised flaw on the outside loop of the 2 that is a characteristic die marker of “pointed serif 2” pennies. This seems to support the suggestion that it is from a die produced by the same dated punch as other “pointed serif 2” pennies, but lacking a coin (preferably several examples) to examine, it remains enigmatic and as such does probably not deserve a separate listing. It should be pointed out, that other examples of unusual coins derived from this dated punch are also known, such as the one shown in Figure 3c with a substantial lump at the upper left of the “pointed serif”.

Square Serif 2

The “square serif 2” penny shown in Figure 4a is a variety closely linked to the standard “pointed serif 2” penny, and is apparently derived from a damaged “pointed serif 2” die of the standard type. This is demonstrated by both the mintmark dot and numeral 2 position being the same in these varieties, including the tiny raised “die marker” flaw on the outside of the loop of the 2 at the upper right side. The “square serif 2” coins also exhibit an additional tiny

flaw on the outside loop at the front of the numeral 2. This variety is listed by all authors including Dean (P52E), Skinner (B63C) and Clarke (117f), with Mills reporting both round and oval dot varieties (6 and 6A). Based on Mills’ survey results, the occurrence rate for this variety was about 0.3% of the total.

The height of the serif of the 2 in the “square serif 2” penny is a close match to the height of the serif on the “pointed serif 2” coins, and the observation that the upper left of the square serif is somewhat irregular in appearance has led to the suggestion by Mike Locke that the square appearance of the serif on this coin has resulted from “chipped die” damage to a standard pointed 2 serif die.¹³ This explanation is also consistent with these coins being from single working die, as further evidenced by a die crack on the Kangaroo’s tail, with the latest die states showing the crack extending from top of the numeral 2 through the tail toward rim. A search for earlier die states has turned up a single “transitional” coin without the die crack but with the flaw at the front of the 2, which exhibits the possible beginning of a “square-like serif”, but in much lower relief than on the ordinary “square serif” penny. The coin also exhibits evidence of the doubling often seen above the base of the 2 on “pointed serif 2” pennies, as shown in Figure 4b. Unfortunately only one worn example of this apparent early die state coin was found.

Pointed Serif 2, Tilted Right

The “pointed serif 2, tilted right” date numeral penny is readily distinguished as arising from different dies than the standard “pointed serif 2” variety by the numeral 2 being tilted strongly to the right and by the

Rev Type	Numeral Type	Comment	Rarity Rating	Coins Exam'd
A	Wedge base 2	Single working die	VS	32
A	Pointed serif 2 (tilted right)	Single working die	VS	30
A	Pointed serif 2 (standard)	Multiple dies from dated punch (minor variations)	S	89
A	Square serif 2	Damaged die of pointed serif 2 type (single die)	R	15
D	Broad 2 (standard)	Many dies from dated punch	C	175
D	Broad 2 (thick)	Several doubled dies from above	S	27

Table 2. Date numeral varieties of 1952 Australian pennies from the Perth mint.

smaller (0.4 mm) dot mintmark which is positioned low after the A of AUSTRALIA, as shown in Figures 5a and 5b. This long recognized variety comprised about 1.5% of the 1952 Perth mint pennies in Mills' survey, and is listed by all authors including Dean (P52G), Skinner (B63B), Clarke (117d) and Mills (8). The 30 specimens examined show identical positions of both the numeral 2 and dot mintmark, none exhibiting any die cracks or other characteristic die flaws.

The fact that a relatively large number of examples of a scarce coin shows no evidence that more than one working die was used may be significant, and would be consistent with the preparation of an individual working die by hand addition of the final date numeral. That no die flaws are observed on any of the specimens suggests that this may have been a relatively long-lived working die. Other, indirect evidence from

mint records coupled with observations on other date numeral varieties reinforces this view. Here, mint records suggest that only two dated punches (or hubs) could have been fabricated for 1952 pennies at Perth, with examination of coins providing persuasive evidence that these punches were used for producing standard "pointed serif 2" and "broad 2" penny dies.

Wedge base 2

"Wedge base 2" pennies are easily distinguished by the triangular wedge shaped base of the date numeral 2 which comes to a sharp point at the left and a 0.5-0.6 mm somewhat oval dot mintmark after the A of AUSTRALIA positioned higher than on other varieties, as shown in Figures 6a-b, respectively. This distinctive variety is listed by Dean (P52D) and Clarke (117b), with Mills reporting both round and oval dot varieties

(9 and 10). That Skinner does not list this variety is probably due to confusion over B63D (see earlier discussion). Mills' survey showed about 1.5% of the 1952 Perth mint pennies to be of this type.

Examination of "wedge base 2" coins provides clear evidence that they were struck from the same reverse die, with all 32 specimens examined showing characteristic doubling on portions of the legend and date. These exhibit a small counter-clockwise rotation on PENNY, and doubling visible to the right on the top bar of the 5. While this is seen on all wedge 2 coins examined, it doesn't include NNY on some of them and on later die states the doubling at the top bar of the 5 is very diffuse (smeared out). That the doubling occurs in two directions (both to the left of PENNY and right of the 5) indicates that these coins were technically struck from a tripled die. There is an additional sign of slight doubling (in a yet a third direction!) below the "wedge base" at the left side on the numeral 2 itself. This is only visible on better condition early die state coins, and there is no sign of doubling on the 2 to the right, as seen on the numeral 5. These observations would seem to provide direct and conclusive evidence that the final date numeral was added separately onto this individual working die.

A wide range of die states is apparent on these coins, with early states showing clear die doubling and a large rounder dot mintmark after the A of AUSTRALIA. By late die states, the doubling on the number 5 in particular has been reduced to a diffuse smear. The mintmark dot on these coins also varies noticeably, apparently with die state. On some late die states much of the dot has disappeared leaving only a flattened remnant, as shown in Figure 6c. This is likely due to a partially filled die, as measurements

show that the position of the remnant corresponds to that of the larger better-formed dot mintmark.

Results and Discussion

Based on the above analysis and available evidence from mint records, a chronological order for the production of the date numeral varieties of 1952 Perth Mint pennies can be hypothesized. This sequence is presented in Table 2 and provides the master die and numeral type, a brief comment, a relative rarity rating (C=common, S=scarce, VS=very scarce and R=rare), and the total number of coins examined in the present study. Since ledgers of die tool production at the Perth Mint during the period of interest are unavailable, it has been necessary to make some assumptions in developing this sequence.

The order presented in Table 2 can be rationalized by assuming that the Perth Mint would have first experimented with a few individual dies before preparing fully dated and mintmarked punches, so these are placed first. A bit of evidence supporting this is that the two individual dies employ smaller 0.4-0.6 mm mintmark dots after the A of AUSTRALIA, whereas the balance of the dies are produced from dated punches with a larger 0.7 mm dot. While the ordering of the "wedge base 2" before the "pointed serif 2, leans right" in the chronology is speculative, it is based on the observation that the "wedge base 2" numeral is unique and that there is clear evidence of doubling from both a de-dated punch (hub) and in the numeral itself (perhaps a sign of inexperience with the task). The "pointed serif 2, leans right" which follows is from a technically well made die but with a strongly tilted date numeral, and thus may not have

been considered to be suitable for a dated punch. This fault is corrected in the standard “pointed serif 2” type, from which a dated and mintmarked punch was clearly produced. The evidence for this is unequivocal as a number of coins from these dies show distinctly different die cracks. A 1962 letter from the Perth mint recalling dissatisfaction with results from the first 1952 dated penny tools and their rapid replacement by a second set of tools² seems to confirm that the scarcer reverse A type preceded the reverse D coins. This is further borne out by the detailed (raw) mintage figures from the “Die Account” book, which show that some 4,183,200 pennies were struck from the first batch of 24 reverse dies. This corresponds to about 9.2% of the total issued mintage and agrees reasonably well with the 7% total for reverse A derived from Mills’ results. The “square serif 2” variety follows since it is directly derived from a damaged die of the “pointed serif 2” type. The important reverse D type with the “broad 2” numeral is next, being the standard and most common form for 1952 Perth Mint pennies. That these dies were prepared from a dated and mintmarked punch is readily confirmed by examples of coins with different die cracks. Finally, the list ends with the inclusion of a thicker “broad 2” variation which is derived from the same dated reverse D punch. Here, die doubling of several reverse D dies occurred during fabrication due to misalignment of the punch during successive blows and this was sufficient in some cases to give the appearance of a thicker numeral 2.

The interpretation that the “wedge base 2” and “pointed serif 2, leans right” varieties must be from individual dies is not consistent with the percentages derived from Mills’ results of about 1.5% each, as these

are clearly too high for individual reverse dies. However, the overall evidence that these two varieties were struck from single working dies is very strong, making it necessary to suggest that lower percentages of perhaps 0.5% each for these varieties are more likely. Here, a comparison using actual raw mintage figures from the Die Account book for the first 24 reverse dies scaled to a total mintage of 45.5 million coins, show one die at 0.6%, four at 0.5% and six at 0.4%, giving percentages for 11 of the 24 dies of 0.4-0.6%. On the other hand, Mills’ percentage for the “square serif 2” at 0.3% seems fairly reasonable for a variety arising from damage to a single working die, whereas the 3.7% for the standard “pointed serif 2” seems too low. While we don’t know the details of how the coins in Mills’ survey were assembled, such results suggest the possibility that the sample may have been significantly enriched in “wedge base 2” and “pointed serif 2, leans right” varieties, due either to a selection process for more “interesting” varieties or to geographical variation in the distribution of coins. In Australia where population centres tend to be widely separated, it is known that original distributions of coinage tend to persist. This has been discussed in some detail for certain scarce dates of predecimal bronze coins by Greig.¹² In any case, it should be strongly emphasized that the distribution of coins used in the present study and shown in Table 2 is not random and has been highly selected for scarcer varieties.

Finally, it should be emphasized that the analysis presented here doesn’t preclude the existence of other important date numeral varieties, since the de-dated punches necessary for preparing individual working dies would have been available at the Perth Mint. However, an extensive search for evidence

of other characteristic date and mintmark configurations, including careful examination of photos available in the literature and detailed analysis of the large survey by Mills³ suggests that this is unlikely.

Summary

Results of the present study of the date numeral varieties of 1952 Perth mint pennies show that four distinctly different types of reverse dies were prepared at the Perth mint. Two types were certainly prepared from dated and mintmarked punches, and two apparently from individually prepared working dies with the date numeral “2” and mintmark separately added. These employ three distinctive styles of the final numeral “2” which can be described as a “broad 2”, “pointed serif 2”, and “wedge base 2”.

Of the two different master die types used for the 300 reverse dies prepared at the Perth mint for 1952 dated pennies, most (90% or more) were made from a dated and mintmarked reverse D punch of the 1951 PL style employing a “broad 2” final date numeral. A much smaller number of dies were prepared using the earlier 1938 style reverse A, with evidence strongly indicating that these were prepared first. These included perhaps as many as 22 dies produced from a single “pointed serif 2” dated and mintmarked punch, and two individually prepared working dies, one with “pointed serif 2” leaning to the right, and the other with a “wedge base 2”. It seems likely that of these, the two individual working dies were prepared first. Two numismatically interesting variants from these four basic types have been noted, including the “square serif 2” which is the result of distinctive die damage to one of the standard “pointed serif 2” dies, and the

“thick broad 2” which is the result of die doubling on several reverse D working dies.

Most of the confusion in previous listings in the literature seems to involve the standard “pointed serif 2” type. Here, the base of the numeral 2 is tilted slightly to the left on all specimens examined. This has apparently led to erroneous separate listings of both a “leans left” and “normal” variety in the literature, a situation further confused by the presence of minor variations in the tail of the final date numeral on “pointed serif 2” coins. Such variations appear to have arisen from damage to either the dated “pointed serif 2” punch or dies, and range from a pronounced flattening at the lower tip of the tail of the numeral 2 to a distinctive “fishtail” appearance on some coins. This results in a more vertical appearance to the tail of the numeral 2, which normally slants to the right. Furthermore, extension of a “serif-like” tip below the base of the numeral 2 makes the numeral itself appear to be more level and this may have contributed to the confusion.

From the point of view of the collector there are various options for including date numeral varieties of 1952 Perth pennies in a collection. Perhaps a minimal number would include examples of three different styles of numeral punches used to prepare these coins, mainly the “broad 2”, the “wedge base 2”, and one of the “pointed serif 2” types. This would also provide examples both reverse master die types. Adding the second “pointed serif 2” type would complete the four basic types for which either dated punches or individual working dies were prepared at the Perth mint. Additionally, two “unintended” numeral “types” might also be considered by the collector. The first of these is the very distinctive “square serif 2” penny, a coin long noted by

variety collectors and the result of die damage. The other is the distinctive “thick broad 2” resulting from one of several doubled dies. Here, a more numismatically desirable specimen might be one that clearly exhibits doubling of the legend at PENNY with splittings of the serifs on the letters. Together, these would encompass the six varieties listed in Table 2. A specialist might also wish to include additional coins representing variability due to die or punch damage on “pointed serif 2” coins, ranging from the “slanted” tail to “fishtail” on the numeral 2; early and late die states of the “wedge base 2”; and examples of the different doubled reverse dies leading to thick “broad 2” numeral pennies.

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