1871 Canada 10C Reverse Die Study

by Richard deBruyn

- Original design matrix dated 18_ _ was utilized for 1858 Province of Canada coinage. Matrix raised unique sub-punches with digits 18 _ _. The position of the 18 is confirmed identical for all Provincial and Dominion coinage minted between 1858 and 1871. Heaton Mint issues dated 1871-1875, depicting an H mint mark on the bottom reverse, likely used tools provided by the Royal Mint to ultimately sink dies. Due to increased demand, that could not be filled by the Royal Mint, 1871 is the only year where two Mints minted Canadian 10C, 25C and 50C. Relatively few 1871H have obverse die breaks and are thus difficult to differentiate. The mintage figures for all denominations of 1871H coinage is suspect and is likely lower than documented in catalogues for both the 10C and 25C denominations but higher for the 50C denomination. Accounting issues at Heaton would carry over into early 1875 when a follow-on order for $400,000 in coinage was submitted in 1874 and completed by February 1875.
- Individual dies were sunk, and the last two digits were manually punched into each die.
- Most dies can be identified by the unique position of the last two digits in the date. For Heaton coins the position of the H mint mark varied slightly for each die. However, the easiest method of reverse die differentiation is via a unique die break pattern, which was a prevalent occurrence in the early mintages of 10C. If enough coins from a particular die are examined, the order of propagation of die breaks can be determined for that die.
- Date overlays can be utilized to definitively confirm die designation if die breaks are absent. Figure 1 depicts the various date configurations for each die using a reference date. Some dies had very similar date spacing.
- For 1871, obverse dies generally could not be identified due to lack of die breaks i.e. they were no fun to study. For instances where actual or suspected obverse die breaks exist, they are noted in comments below each reverse die. It is possible that once a reverse die was no longer useful the obverse die it was married to may have been replaced at the same time, but this is conjecture. One could reasonably think that most dies wouldn't be discarded until they became unusable.
- **Random sample size = 226**. The mintage of 800,000 is reasonable and likely accurate. IAW the Binomial Theorem, at the current sample size, there is a 6% chance of missing a die that minted 10,000 pieces and a 0.3% chance of missing a die that minted 20,000 pieces. A reasonably accurate gauge of relative reverse die use and existence will be attained once the sample size reaches about 300. At that point there is only about a 2% chance of missing a die that minted at least 10,000 pieces.
- Approximately 1/4 of all pieces considered either had no die breaks, were in very poor condition or the image was of insufficient quality, or only showed the obverse side. Some of these could undoubtedly have been identified by overlaying dates. We will assume those undesignated are proportional to relative die use as determined by die breaks alone. However, some dies may have cracked much later than others and thus the relative quantities may be skewed somewhat.
- **Twenty-nine (29) reverse dies** have so far been identified based on unique die break patterns alone. These are illustrated in the attached catalogue and approximate mintages for each tabulated. This catalogue can be reliably used to verify the authenticity of coin if it has not been TPG, since no fakes will mimic known die break patterns. Seventeen (17) of these have primary or secondary die breaks above or through the crown. Care must be exercised during identification if this is the only die break present. The order of die break propagation is depicted if enough examples of that die was seen.
- Three dies (bold highlighted in the table) were prolific compared to the average. Combined they accounted for about 250,000 pieces. There is a possibility that some dies became unserviceable after relatively few strikes (~3000). Coins from such dies, if they exist, can only be identified if the sample size becomes sufficiently large. For example, there is only a 1% chance of missing a die that minted 3,000 pieces, if the sample size is 1200. Of the 3 dies where only one example has been seen so far (red font), one of them is likely a very short-lived die.   In any case, based on the empirical data, examples from these 3 dies should be considered rare. If inclined, collecting one example from each die would seem to be a very difficult task.

1871 Canada 10C Reverse Die Catalogue

(all images obtained open source)

Mintage Table (95% Confidence)

Die R71T	Quantity	Mintage (est)
1 *	9	32,000
2	10	36,000
3	14	50,000
4	8	28,000
5	**32**	**113,000**
6 *	6	23,000
7	4	14,000
8 *	**18**	**64,000**
9	12	43,000
10	5	18,000
11	1	<5,000
12	3	11,000
13	2	< 10,000
14	9	32,000
15	13	47,000
16	6	23,000
17	2	7,000
18	12	43,000
19 *	4	14,000
20	1	< 5,000
21	2	< 10,000
22	11	40,000
23	10	36,000
24	2	< 10,000
25 *	4	14,000
26	3	11,000
27	**19**	**67,000**
28	1	< 5,000
29	3	11,000
PH 30 ?	-	-
Total	226	800,000 (rounded)

^ 3,5,8 and 27, undoubtedly have multiple marriages

* Example held by author

 PH - placeholder

R71T-1

- High '71' in wide date
- 7 rotated CCW

R71T-2

- Aesthetically pleasing wide date with '7 ' rotated CCW.
- Obverse has possible repunched 'I' in GRATIA

R71T-4

- High '7' clearly rotated CCW
- Narrow date, with last '1' punched slightly closer to the '7'
- A third die break is possible (TBC)

R71T-3

- Distinctive die break pattern
- Wide date
- Last '1' slightly high.
- '7' rotated slightly CCW.