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Punch Technique of Umayyad Copper Coinage in Syria

The Germanic hordes who invaded Europe in AD 476 put an end to the Western Roman Empire and thus began the so-called Dark Ages. The Eastern Roman (Byzantine) Empire, however, survived for nearly a millennium afterwards.

The political disasters of the fifth century were accompanied by economic crisis in the course of which much of the reformed system of Constantine disappeared (Grierson 1982: 2). Gold coins continued in circulation while silver coinage passed out of normal use, and copper coins show crudeness of manufacture when compared with Roman and Greek coins of the earlier epochs.

The Byzantine coinage was essentially a continuation of the late Roman coinage, but soon developed its own style. However, from the very beginning the images were conventional and symbolic. The coin design had essentially a two dimensional character (Clain-Stefanelli and Clain-Stefanelli 1974: 85).

As a result of the decline in art, or rather shifts in artistic modes of production, dies were no longer manufactured with the skill and care exercised in classical times, and many of the minting practices became relatively crude (Cooper 1988: 19). In the Middle Ages the designs became more simple and in low relief, and the use of graving-tools was largely replaced by that of punches (Grierson 1975: 435).

On June 15, AD 622 the prophet Muḥammad left Makka to seek security and join his supporters at Yathrib. This *hijra* marks the first year of the Islamic calendar. Fourteen years later the forces of the Byzantines were routed in the decisive battle at Wādī al-Yarmūk, and the victorious Muslims advanced to Damascus, the future capital of the Umayyad Caliphate (42-132 AH / AD 661-750).

The Arabs had no indigenous coinage and no monetary traditions of their own. Byzantine gold and bronze pieces, the Sassanian silver dirham and some Himyarite silver coins were circulating in the area. Initially, the existing coinage in the Empires seized by the Muslims, which had two separate economics, continued to be used.

In Persia, where the mints were still operating, the Arab governors continued to issue silver dirhams similar to those struck by the last Sassanian kings. They differ, however, in that an Arabic inscription is found in the observe margins, normally reading "In the name of Allah" or "Excellent". These series are known as the Arab-Sassanian series.

In Syria the situation was different due to the absence of any Byzantine minting activity. Here the Arabs issued new gold and bronze series having the familiar attributes of Byzantine money and then added to the bronze coins the mint name in Greek, and later in Arabic, or in both scripts together. These coins circulated together with Byzantine coinage and became known as the Arab-Byzantine coinage.

The result was the development of two parallel coinages, one in copper and gold, struck at the mints of Syria, Egypt and North Africa, and known as Arab-Byzantine, and the other an almost entirely silver system in Iraq and Iran known as Arab-Sassanian coinage.

'Abd al-Malik ibn Marwān restored the unity of the Islamic World after years of chaos and fighting between rival contenders for the Caliphate. The defeat of the Byzantine army at the battle of Sebastopolis freed him from sending gold tribute to Constantinople as the price of peace, while enabling him to direct his attention and resources to his opponents.

'Abd al-Malik was known as a grand reformer. By the year 72/692, he was firmly on the political saddle and controlling most of the Islamic realm. He was able to reform the monetary system. He also employed Arabic as the official language of all government documents, displacing Greek, Latin, Coptic and Pahlavi.

Philip Grierson calls our attention to the fact that "Arab-Byzantine coinage (the predecessors of the reformed coinage) differs from German pseudo-imperial coinage (coinage of the Germanic tribes who occupied the Western Roman provinces in the sixth and seventh centuries) in three important respects. In the first place, it was mainly a copper coinage, while the Germanic co-

inages were almost exclusively of gold. Secondly, it was very largely municipal, the coins usually bearing the names of the places where they were minted but no name of a ruler. Finally, the Arabs brought with them a religious prejudice against representational art which led to various modifications in the traditional Byzantine types and ultimately to complete abandonment of pictorial design in favour of the purely epigraphic designs which characterise the vast bulk of Islamic coinage." (Grierson 1982: 144).

Thus in 77 AH/AD 697 the purely Islamic gold coinage bearing only religious inscriptions appeared and no more pictorial coins were produced.

This ideological background, that is the prejudice against representational art, deprived the historians and numismatists from pictorial evidence and knowledge of minting process or of the instruments used as they are shown in pictures, sculptures and on coins by artists of the ancient world or Medieval Europe. There are few historical sources about the details of Umayyad central administration or administration of Syria or about economic life of the provinces (Bates 1989: 180).

Actually we know nothing about the minting techniques of the Umayyads or the instruments used. There are also no dies preserved from that period to study or investigate, so we are left in the dark, and the only reliable material at our disposal is the issues themselves which were produced before and after the coinage reform of ʿAbd al-Malik.

Due to the perfection of engraving the dies of Umayyad gold and silver coinage, it is extremely rare to find any deficiency in the design or any sort of error. This convinces me to seek evidence of errors in die engraving from copper coinage, which was struck locally in the municipalities of the *ajnād* without direct supervision of the Caliph.

In this paper, I will deal with the post-reform copper coinage of Syria which in the Umayyad period was divided into five *ajnād* (military administrative districts) (Bates 1989: 216). The Syrian post-reform copper coinage is quite extensive, having been minted in at least twenty eight different locations (Qedar 1988-89: 29, FIG. 1).

According to S. Qedar (1988-89: 30, 35, 36), these coins belong to three distinct phases. The first two phases to which the Arab-Byzantine coins belong are not included in the present discussion, which is limited only to the coins of phase III — The Post-Reform copper coins:

Series H

Bear the formula of faith, the *shahāda,* and the mint name in horizontal lines. The largest group in this series are anonymous coins bearing the *shahāda* with or without decoration in the field.

Series I

These coins are of the *shahāda* type bearing legend within a triple circle on the obverse and a mint formula around the *shahāda* on the reverse. Dated coins belong to this series as well.

Series J

This series reflects the development of specific types for each mint. Every mint displays an identifying design in addition to the inscriptions such as a lion in Ṭabariya, a snake in Udhruḥ and fleur-de-lis in ʿAmmān. A few dated coins from mints of Ḥumṣ and Ṭabariya belong to this series.

Series K

This series comprises of small sized, anonymous coins with a central representation of objects, animals, floral patterns, birds, fish, etc.

As mentioned previously, the Byzantine silver passed out of normal use. Copper coins were the most useful of all other coins and in fact short supply of those would have shut down all trading activities (Qedar 1988-89: 27). Large quantities were expected to be produced by the Arabs in order to compensate the increase in demand for the small change, and this explains why these copper coins are found today in considerable quantities not far from where they were issued.

The copper coins of the Umayyads, both in the Arab-Byzantine and the Post-Reform series, exhibit more traces of individuality than the standard gold and silver minted by the Caliph's direct command in the East and West respectively. Sometimes the name of the governor who ordered the minting is recorded (Walker 1956: LXVIII).

As copper production in the *ajnād* was not directly supervised by the Caliph, it is reasonable to say that less care and attention was practiced in the production of these coppers and engraving their dies. Therefore it is only natural to find specimens with marks of faulty processing and defects which betray the method of die preparation, making blanks or striking.

A good example of erroneous die linkage is mentioned by M. Bates (1989: 214) who points out what can occasionally happen in the mint during copper production. For example a unique coin with the mint name TIBERIADO on one face and DAMASCUS on the other is found in a private collection. Another example from the author's collection shows the extreme confusion between dies; a copper coin of eagle type with the usual inscription on the reverse "Muḥammad is the apostle of God" is repeated on the reverse, which should bear the usual *shahāda* formula "There is no God but God alone".

We know that three different methods were used in ancient and medieval times to prepare dies:

1- Direct engraving into the die surface. David Hendin (1978: 19) states: "In ancient times dies were engraved by hand, the engraver had to work completely backward — the shallowest points on the die became the deepest points on the coin, and vice versa. Finally, the dies had to become a mirror image of how the coins would eventually look, since the striking process reverses the design. Interestingly, some beginning die cutters in ancient times apparently had a difficult time understanding this principle, and instead of engraving the mirror image of the inscription they desired, they inscribed the true image into the die. Thus when the coins were struck they carried the inscription in mirror images, known to numismatists as (retrograde)". This method could have been used for both bronze and iron but it is not deployed when great quantities of currency is needed (Babelon 1901: 906ff).

2- Casting the dies from a matrix mould. This method is employed when many dies were needed, the method of the die manufacture was to engrave a lead matrix first. The matrix was used to prepare clay patrices as required, and presumably these were placed at the bottom of a short hollow clay cylinder. Bronze was cast into the hollow to produce a die, it is well known that bronze dies are less durable than iron dies. This method was rarely used in Western coinage (Grierson 1975: 485).

3- Engraving the design into the die surface by punching. This method accelerates die production and was used in cases when great quantities of coinage were needed. The fundamental of this technique is setting the design diagrammatically on the plain working surface of the die (Cooper 1988: 19), sometimes this is done with a pair of compasses to outline the circumference of the whole field and divide the field according to the desired design. Then using several small positive punches to execute the required design. In the case when a pair of compasses is used, their central leg will produce a round cavity on the die surface which appears as a raised pellet on the produced coins (Grierson 1975: 491). It was suggested that after the piece punch had been struck into the die, the details were opened out enough to give semblance of reality by using the tip of an abrasive stick (Cooper 1988: 19).

An important statement about Umayyad die production technique comes from Walker (1941: CLVI): "In the Umayyad period there is definite Pehlevi influence discernible in the outline of certain letters due no doubt to the employment of old Pehlevi punches in the production of the coin dies."

Another important statement comes from Miles (1950: 97): "Careful study of the execution of the inscriptions convinces me that from the outset punches were used in constructing the die. Most of these punches are simple horizontal and vertical strokes, curves, circles ... etc. which where combined to make various letters of the alphabet, others contain whole letters and still others carried group of letters forming a word or even a group of words."

It is a well known fact that the process of making the die has often left traces on the coin (Grierson 1975: 490). Therefore any misplaced strokes, imperfection, maladjustment, wrong-placed punches or unaccomplished part of the design — e.g. a letter or a word in case of Umayyad dies — will be apparent and clear on the produced positive likeness of the die which is the coin, and any deviation in the normal inscriptions or faults and defects in the design, serve as a guide in determining the method of die preparation and will be helpful to reveal the shape of individual punches.

During the last seven years I examined more than 15,000 Umayyad coins and selected from them 134 pieces with different mint errors. The following are general observations based on internal evidence of the coins:

1- Most of the examined coins were struck by dies, some are cast. We should remember that it is not possible to differentiate between Umayyad and early Abbasid coppers if they are undated or do not bear the name of the governor.

2- There is no fixed relationship between the obverse and reverse of the used dies, which means fixed dies were not used.

3- There is a unique coin in my collection where the die engraver became confused and inscribed an obverse word (*waḥdahu)* on the reverse die instead of the word (*Allah*).

4- I have in my collection two specimens where the coin-striker became confused and the result was a coin bearing two obverses and another coin bearing two reverses.

5- Some specimens show different styles on the obverse and reverse of the same coin. The obverse is much better engraved than the reverse, and in some cases there are different styles on the same face of the coin.

6- Many mint names have a missing letter and many mint names and legends were engraved in retrograde.

7- Most mint errors were found in series H, i.e. anonymous coins bearing the *shahāda* with or without decorations in the field, and no mint errors were found in series J which bears specific types for each mint.

Examples that betray the use of punches to engrave the dies are:-

1- A deficient letter or word on the obverse or reverse of the coin. One stroke or more are needed to correct the legend (FIG. 1).

2- In many instances the use of simple horizontal or vertical strokes, curves and circles that were combined to make various letters are apparent (FIG. 2).

3- A unique example where part of a letter is straying upward from its proper position, which proves the use of punches (FIG. 3).
4- There are many instances of over-lapping and over-extending of rectilinear punches which resulted in joining together of all the letters and words (FIG. 4).
5- Careless use of punches has resulted in illegible inscriptions (FIG. 5).
6- Sometimes lack of space forced the engraver to miss a word or part of a word (that is he failed to estimate correctly the amount of space required) (FIG. 6).
7- There are many specimens with a raised pellet in the centre of the coin, which resulted from the use of dividers to measure the circumference and mark the working surface of the die (FIG. 7).

It is clear from these examples that the dies for the Post-Reform Umayyad copper coins were prepared by workmen and artists, using the punch method, who had no knowledge of Arabic and were permitted to practice on copper coins only and not on gold and silver coins. This explains why the later two coinages were free from errors or deficiency in the design as they were under direct supervision of the Caliph, and were apparently executed by trained engraves.

It may be concluded from the study of copper coins that the earliest minted coins had many errors while the later ones were almost free from errors. This is due to the experience and better workmanship gained through train-

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ing and long practice.

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