

THE  
NUMISMATIC CHRONICLE  
AND JOURNAL OF THE  
ROYAL NUMISMATIC SOCIETY

*Edited by*

E. S. G. ROBINSON  
C.B.E., M.A., F.B.A., F.S.A.  
*Keeper of Coins, British Museum*

HAROLD MATTINGLY  
M.A., F.B.A., F.S.A.

*and*

JOHN WALKER  
M.A., D.LITT., F.S.A.

SIXTH SERIES

*Volume XII*

LONDON  
THE ROYAL NUMISMATIC SOCIETY  
1952

**PRINTED IN GREAT BRITAIN, IN 1952  
AT THE UNIVERSITY PRESS, OXFORD  
BY CHARLES BATEY, PRINTER TO THE UNIVERSITY**

## PEGGED VENETIAN COIN DIES: THEIR PLACE IN THE HISTORY OF DIE ADJUSTMENT

PROFESSOR G. MARÇAIS published in 1936 a pair of coin-dies which for the numismatist were of quite exceptional interest.<sup>1</sup> The dies, now in the Musée Stéphane Gsell at Algiers, were used for striking dinars of the Almuravid ruler 'Alī ibn Yūsuf of the year A.H. 509 (= 1115/16) at the mint of Nūl in the Maghreb. Their interest lay in the fact that the face of the upper die was furnished with two iron projections which fitted into sockets in the face of the lower die, thus making it possible for the dies to be adjusted to one another in only two possible positions, in this case  $\uparrow\uparrow$  or  $\uparrow\downarrow$ . Some other Turkish dies of the early nineteenth century in the same museum were provided with a similar device, which suggested that it was fairly generally known, if not universally employed, in the mints of Algeria and Morocco.

Since Arab mint practices for the most part derived by way of Byzantium from those of Rome, this discovery created a certain presumption that an arrangement of pegs and sockets was that employed in antiquity for adjusting the two faces of a coin to one another.

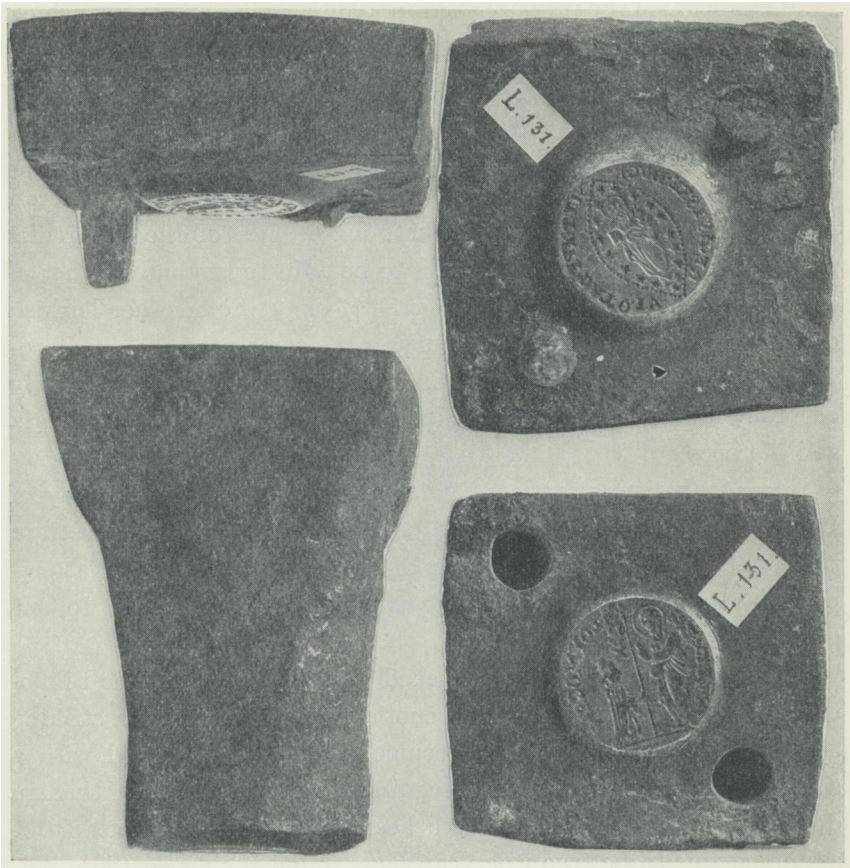
Such a presumption is strengthened by the existence in the Bibliothèque Nationale of a pair of Venetian dies, intended for striking zecchini of Doge Alvise IV Mocenigo (1763–78), furnished with a similar device.<sup>2</sup> The dies were acquired in 1883 from an Athenian dealer, and were alleged to have been discovered in Crete. How, assuming this to be true, they can have found their way there it is impossible to say. The greater part of Crete had been lost by Venice to the Turks in the seventeenth century, and the last Venetian strongholds on the island fell in 1718. One is inclined to suspect the dies of being the work of forgers, and as having been used for striking the imitations of Venetian zecchini which were very generally current

---

<sup>1</sup> "Un coin monétaire almoravide du Musée Stéphane Gsell", *Annales de l'Institut d'Études Orientales*, ii (1936), 180–8, with two plates. I am indebted to the late Dr. J. G. Milne for bringing this article to my attention.

<sup>2</sup> The zecchini of Alvise IV Mocenigo can only be distinguished from those of Alvise III (1722–32) by their style and workmanship, which is much inferior and closely resembles that of the last two doges, Paolo Renier and Lodovico Manin (N. Papadopoli, *Le monete di Venezia*, iii (Venice, 1919), 556–9).

in the Levant.<sup>3</sup> But despite two mistakes in the legends—**B** for the first **E** in **VENET** and **IV** for **TV**—the dies have every appearance of being genuine; their style is far superior to that of any imitation



known to me. Mistakes of single letters are common at this period, for a workman could easily pick up a wrong punch, and **B**–**E** and **I**–**T** are very much alike; there is in fact a zecchino of Alvise III Mocenigo in the Fitzwilliam Museum at Cambridge which reads **MOCBN**. Dies have a habit of turning up in unexpected places, and

<sup>3</sup> The zecchini of Alvise IV Mocenigo were, as a matter of fact, very common, as a result of the efforts of the doge to promote the commercial interests of the city, and in consequence were very frequently imitated. They were the models employed for the curious and very common gilt brass tokens, crudely imitating the type of the zecchino, struck by John Cook & Sons in the last century.

the fact that these ones are said to have been found in Crete affords no good reason for impugning their authenticity.

The two dies each consist of a block of iron in which has been fixed the steel die proper, this being left to project a few millimetres above the surface. The lower die is 6.5 cm. long, and roughly conical in shape. The upper face forms a square with sides 4.5 cm. in length, and the die tapers down to a diameter of about 3 cm., when it is cut short. In two of the corners of the striking face are holes, about 1.5 cm. deep, to take the projections on the face of the upper die. This die would be embedded in a block of wood or an anvil when actually in use. The type is the normal one of the zecchino, St. Mark handing a banner to the kneeling doge, and the legend is **ALOY·MOCEN D|V|X S|M||V|B|N|E|T**, as in *Corpus Nummorum Italicorum*, viii, p. 500, no. 127 var.

The upper die is more remarkable. Instead of being an iron bar with the die engraved on one end, long enough for the moneyer to grasp in his left hand, it is a flat square iron block, some 2 cm. deep and about 5 cm. across. In two corners there are metal projections about 1.5 cm. long—one of them is broken off—which fitted into the sockets in the lower die. In the centre of the iron square, projecting a little, is the steel die proper, with the usual zecchino reverse: Christ standing in a mandorla, surrounded by sixteen stars, with the legend **SIT·T·XPE·DAT·Q·IV REGIS·ISTE·DVCAT·**

The unusual form of the upper die may be due to the fact of its having been intended for use with the screw-press or balancier, not for striking by hand. Mechanical methods of striking were introduced into the Venetian mint in 1755, when the Republic felt the need of issuing silver dollars in rivalry to those of Maria Theresa, then just beginning to capture the Near Eastern market.<sup>4</sup> It would not have been impossible for this upper die to have been used in hammer striking, for the pegs should in theory have served to hold it steady at the moment of the actual blow, but the large flat surface would be ideally suited for use in a screw-press, and it seems reasonable to suppose that it was designed for this purpose.

The interest of these pegged dies lies in their implications. Although the axes of the coins that could be struck by these particular dies are ↗ or ↘, it is clear that if the steel dies were fixed at right angles

<sup>4</sup> Papadopoli, *op. cit.* iii. 712 ff.

to the sides of the iron blocks, as they well might be, the die axes would be  $\uparrow\uparrow$  or  $\uparrow\downarrow$ . These—and normally the latter—are in fact the axes regularly found on the coinage of the later Roman Empire and on that of the Byzantine Empire. They contrast with the overwhelming bulk of the coinage of medieval Europe, which was struck “freehand”, the upper die being held in no fixed relationship at all to the axis of the type of the lower die.

The steps by which the regularity of die axes in later antiquity was abandoned in the Dark Ages I do not propose to examine here; it coincided, roughly speaking, with the transition from the gold tremissis to the silver penny. For the later Middle Ages, I have noticed the following exceptions to the rule of irregularity of die axes:

(i) *The Norman Kingdom of Sicily*. The early copper coinage of Roger I struck at Mileto was irregular, but much of the coinage of Roger II and his Norman successors struck in Sicily is quite regular, normally  $\uparrow\downarrow$  but sometimes  $\uparrow\uparrow$ . The types of many of these coins—the scyphate ducats of Roger II and William I, the small follaro with the standing figure of Roger II on the obverse and the seated Christ on the reverse—are purely Byzantine, and it may be conjectured that Roger’s mint was organized by Byzantine workmen, who introduced the Byzantine practice of regularity in die adjustment.

Henry and Constance introduced the denaro into the Sicilian kingdom, and with it the die irregularity of northern Europe. The augustales of Frederick II, however, are regularly struck  $\uparrow\downarrow$ , and so, if I can judge from the few specimens I have been able to examine, are their successors, the reali d’oro of Charles I of Anjou. This monarch likewise insisted that the dies of his beautiful gold and silver carlini, first struck in 1278, should be properly adjusted to one another. He rejected the first patterns on the ground that the lettering of the legend was crowded and illegible, and ordered that new dies should be prepared in such a way that the position of the shield on the reverse corresponded to that of the Archangel and the Virgin on the obverse.<sup>5</sup> Such instructions clearly envisaged the existence of

<sup>5</sup> “. . . quod caput ipsius scuti capitibus ymaginum Beate Virginis et Angeli ex parte altera positus et punta semper eiusdem scuti pedibus eorumdem ymaginum equali ordine responderent” (letter of Charles of Anjou of 5 June 1278, cited on pp. 146–7 of an unpublished work by A. Sambon, printed in Paris but lacking a title-page, on the coinage of southern Italy and Sicily in the later Middle Ages).

some mechanism for securing accurate die adjustment,<sup>6</sup> and the gold and silver carlini of both Charles I and Charles II (1285–1309) were adjusted in the manner that he desired.

The practice disappeared in Naples with the issue of *gigliati* in 1303, probably because the elaborate cross fleury which formed the reverse type of these coins rendered any irregularity less obvious, and it was not again revived. Nor was it employed in the neighbouring Aragonese kingdom of Sicily, where one might have expected Norman and Hohenstaufen mint traditions to have been preserved.

(ii) *Venice*. The early coinage of denari, from the time of the Emperor Louis the Pious to the end of the twelfth century, shows no trace of die adjustment. Silver grossi were introduced under Doge Enrico Dandolo (1192–1205), probably in 1202,<sup>7</sup> and gold ducats under Giovanni Dandolo in 1284. Both series are quite regularly adjusted, generally  $\uparrow\downarrow$  but sometimes  $\uparrow\uparrow$ , up to the middle of the fourteenth century. Irregularity began to appear under Andrea Dandolo (1343–54) in the form of an occasional  $\uparrow\rightarrow$ , and under Antonio Venier (1382–1400) all trace of systematic adjustment disappeared. The gold and silver coinage of Venice, under him and his successors, was as haphazard in the matter of die axes as was that of the rest of western Europe. Even during the period of regular adjustment, the small change—denari, and later soldini, mezzanini, &c.—was struck with no attempt at regularity at all.

(iii) *Bulgaria and Serbia*. The coinage of the medieval states of Bulgaria and Serbia, which re-established their independence of the Byzantine Empire in the late twelfth century, is essentially Byzan-

---

<sup>6</sup> It is noticeable that there is no regular die adjustment on the silver coinage of grossi struck by Charles of Anjou as count of Provence or as Senator of Rome. Presumably he knew that the practice would not be a novelty in the mints of his south Italian kingdom, though it was out of the question elsewhere.

<sup>7</sup> Papadopoli, *op. cit.* i (1893), 81. The fact that the grossi reproduce, in the matter of die adjustment, a feature characteristic of Byzantine coinage might lead one to suppose that they date from after the fall of Constantinople in 1204, and were made by Byzantine workmen. But the direct testimony of the mid-thirteenth-century chronicler Martino da Canale, that they were struck to facilitate the payment of the workmen building the Crusader fleet, is against this, and there would scarcely have been time for the organization of the new coinage in the few months between the fall of Constantinople and the death of Enrico Dandolo, who never returned to Venice, in 1205. Possibly the coins were made with the help of workmen from south Italy, whence they certainly derived the name (ducats) by which they were first known.



tine in inspiration, its commonest type showing two standing figures and a cross on the obverse and a seated figure of Christ on the reverse. The bulk of the coinage, in both countries, consisted of silver grossi. That of Bulgaria dates back to its first Tsar, Peter I Asên (1186–96), but the coinage of Serbia appears to go back only to Vladislav I (1234–40), and the details of its design were openly derived from the grossi of Venice. In both cases there is regularity of die adjustment,  $\uparrow\downarrow$  being (as in Byzantium) the arrangement normally followed. Not till the disorders of the mid-fourteenth century did the practice break down, and irregularity become the rule.

(iv) *Other countries.* The sub-Byzantine coinages of Trebizond and Thessalonica normally followed Byzantine practice over die adjustment ( $\uparrow\downarrow$ ). The Crusader states in the main followed the example of western Europe in preferring irregularity, though the early folles of Antioch are very frequently  $\uparrow\downarrow$  or  $\uparrow\uparrow$ , and were perhaps struck with fixed dies. The die positions of the coins of medieval Armenia are irregular. The only early (eleventh-century) silver coin of Russia I have been able to examine is  $\uparrow\uparrow$ ; the later coinage is quite irregular. In northern and western Europe I have failed to find any examples of regularity at all.

Only one conclusion can be drawn from this rather bald summary of the evidence. The die adjustment of the relevant series of Sicilian, Neapolitan, Venetian, Bulgarian, and Serbian coins is too uniform to have been attainable by workmen employing the freehand striking of western Europe, however close and exacting we may assume mint instructions and mint supervision to have been. The degree of uniformity implies some mechanical contrivance, and it is fair to assume that the Venetian pegged die, when taken in conjunction with the Almurāvid pegged die described by Professor Marçais, indicates that this contrivance was a system of pegs and sockets fitting into one another. It can only have been derived from Byzantium, and through Byzantium from the Ancient World.

It must be remembered, of course, that we cannot equate die regularity, in the sense of corresponding or reversed die positions ( $\uparrow\uparrow$  or  $\uparrow\downarrow$ ) with the use of fixed dies; both the Almurāvid and the Venetian dies show that this must not be done. It is here that the element of mint practice entered in. If the steel dies were fitted



with iron pegs or into the iron blocks in the correct way,  $\uparrow\uparrow$  or  $\uparrow\downarrow$  would be the natural result. But if they were carelessly adjusted, or if, as in the Almurāvid case, a circular upper die, with sockets to the right and left of the axis of the type, were used with a square lower die, with pegs in opposite corners of the square, irregularity could be the only consequence. We cannot therefore assume that the disappearance of die regularity in, for example, the Angevin kingdom of Naples in the early fourteenth century marked an abandonment of pegged dies in favour of the circular dies and freehand striking of the West; it may have simply involved a weakening of mint supervision or a failure to specify how the position of the pegs should be related to the designs of the coins. This at least is what appears to have occurred at Venice, if the die which is the subject of this paper tells the truth.

PHILIP GRIERSON