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THE WILLANZHEIM HOARD (1853)  
OF FLORENTINE GOLD FLORINS (\*)

*Scoperto nel 1853, il ripostiglio di Willanzheim era composto da 163 monete d'oro, probabilmente tutti fiorini, di cui 57 furono acquistati in quello stesso anno dal Museo Nazionale delle Monete di Monaco di Baviera. Queste monete sono oggi parte di un gruppo leggermente più ampio di fiorini conservati nel museo, di cui questo articolo presenta un completo riscontro con i documenti dell'epoca e l'identificazione delle possibili intrusioni. Ne emerge un quadro aggiornato, con la possibile data di chiusura del ripostiglio antecedente (1325) rispetto a quella tradizionalmente riconosciuta (1338/1339) e le sue origini da ricercare probabilmente nell'attività delle truppe mercenarie provenienti dal nord delle Alpi che combatterono in Italia tra gli anni '20 e '30 del Trecento. L'esame delle monete permette, inoltre,*

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*di presentare una analisi approfondita dell'evoluzione stilistica del fiorino d'oro e nuove proposte di cronologia e di identificazione di alcune emissioni. In particolare, la presenza di alcuni fiorini dalle caratteristiche peculiari, riconosciuti come possibili imitazioni 'non firmate', introduce nuovi elementi di discussione sul fenomeno dell'imitazione del fiorino di Firenze da parte di altre zecche prima dell'introduzione, a partire dal 1322, delle cosiddette imitazioni firmate.*

*Discovered in 1853, the Willanzheim hoard originally consisted of 163 gold coins, probably all florins, of which the Coin Cabinet of the State Museum in Munich acquired fifty-seven of the coins in the same year. The Museum preserves these coins among a slightly larger group. This article presents an account of the Munich component of the Willanzheim hoard, including the identification of possible intrusions. There emerges a revised picture of the hoard, probably with an earlier closing date (1325) than the one traditionally recognised (1338/1339). In either case, the date situates the hoard within a group of florin hoards that perhaps owe their origins to the activities of mercenaries from north of the Alps in Italy during the 1320s and 1330s. The study of the coins provides an opportunity to consider the stylistic evolution of the Florentine gold florin and to put forward new chronologies for and new interpretations of some of the issues. In particular, the presence of coins with anomalous characteristics, identified here as possible 'unsigned' or 'deceptive' imitations, throws new light on the production of such coins in other mints already before the introduction of the first 'signed' imitations of the Florentine coin in 1322.*

*Découvert en 1853, le trésor de Willanzheim était composé de 163 monnaies d'or, probablement tous des florins, dont 57 furent achetés la même année par le Staatliche Münzsammlung de Munich. Ces monnaies font actuellement partie d'un groupe plus ample de florins, conservés au Musée, dont cet article présente un inventaire complet et cohérent avec les documents de l'époque, et propose l'identification des intrusions hypothétiques. Il émerge donc un tableau actualisé, qui permet de placer la clôture du trésor à une date probablement antécédente (1325), par rapport à celle traditionnellement reconnue (1338/1339), et de lier plausiblement la cachette à l'activité des troupes mercenaires descendues du nord des Alpes, et qui combattirent en Italie entre les années 20 et 30 du XIV siècle. L'examen des monnaies permet, en outre, de présenter une analyse approfondie de l'évolution stylistique du florin d'or, et de proposer des nouvelles chronologies, et, enfin, d'identifier diverses émissions. En particulier, la présence des monnaies atypiques, reconnus comme possibles imitations 'sans signature', introduit de nouveaux éléments de discussion sur le phénomène de l'imitation du florin de Florence de la part d'autres ateliers, avant les premières imitations, soi-disant 'signées', frappées à partir de 1322.*

*Introduction*

On 10 May 1853, while clearing a dung-pit on a farm in the hamlet of Willanzheim near Kitzingen in Lower Franconia, Bavaria, Kaspar Käppner discovered a hoard of 163 gold coins, mostly if not entirely Florentine gold florins. The Coin Cabinet in Munich (Staatliche Münzsammlung, München = SMM) acquired fifty-seven coins from the hoard in two separate purchases of July (three examples) and August 1853 (fifty-four examples). Brief accounts of the hoard were published soon after its discovery and in 1922 (1). Berghaus, Nau, Klein and Leroy referred to the hoard in studies on florin hoards north of the Alps, coin finds in south-west Germany, florin imitations in the context of coin finds and the Bruges hoard of 1877, respectively (2), and Hirsch recently provided a summary account (3) but a complete report has never appeared. This article focuses on the component of the hoard preserved in the SMM. The composition and disposition of the remaining portion of the hoard is unknown.

*1. The Munich component of the hoard*

The Florentine florins from the Willanzheim hoard that the SMM acquired in 1853 are presently preserved among a slightly larger group of sixty-one coins, most of which have similar coin identification tickets; another florin without provenance but believed to be from the same hoard is preserved separately. Each of the similar tickets provides a hand-drawn illustration of the respective privy mark, the dating based on the interpretation or reading of the privy mark and relevant references to Duval and Froelich (*M. en or*), Orsini (*Ors.*) and Joseph (*Bretz.*) (4). One of the tickets carries a hand-written annotation to indicate that the respective coin is missing (*Fehlt.*); the information on the ticket attributes the missing coin to the second semester of 1338, when Vanni di Manetto was master of the mint for gold coinage, though the illustration on the ticket differs somewhat from the marginal illustration in the *Libro della Zecca* (5). Two other florins that the SMM ac-

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(1) "Jahresbericht des Historischen Vereins für Mittelfranken" 22, 1853, p. xvi; "Blätter für Münzfreunde" 57, 1922, p. 258.

(2) BERGHAUS 1961, p. 603; NAU 1983, pp. 104, 132 n. 4; KLEIN 2004, p. 131; LEROY 2007, p. 109.

(3) HIRSCH 2013.

(4) DUVAL, FROELICH 1769; ORSINI 1760; JOSEPH 1883.

(5) The Orsini reference and proposed date on the coin ticket correspond with the pri-

quired in 1990 were intermingled with the coins of the Willanzheim hoard but they came into the Museum through a separate purchase and have different tickets<sup>(6)</sup>; there is nothing to suggest that these two coins originally formed part of the hoard.

Among the records in the possession of the SMM that are associated with the hoard, there is an undated typescript that provides an incomplete list of the privy marks represented on the coins acquired by the Museum; the list describes the marks on the three coins acquired in July 1853 but describes only forty of the marks on the coins acquired in August 1853. The compiler(s) of the list clearly struggled to describe some of the marks, writing only the indefinite article followed by a lacuna for one, leaving a blank space between two commas for another and, at the end of the list, writing simply that there were seven other different marks. The list makes it possible establish that thirty-eight of the coins among which the Willanzheim coins are preserved indeed came from the hoard, including one of Pope John XXII (1316-1334) from the papal mint of Avignon at nearby Pont-de-Sorgues; five of the marks described in the list do not appear to be among the coins in the Willanzheim group at all. The incomplete nature of the list and the misreadings that it obviously includes make it impossible to determine which of the remaining coins, apart from the two acquired in 1990, came into the group after the acquisitions of 1853 (Table 1).

Unfortunately, there seems to be no record anywhere of the original composition of the entire hoard from Willanzheim. Each of the privy marks represented among the SMM component of the hoard occurs only once, which suggests that Museum officials picked over the coins from the hoard in the interest of acquiring a single example of each mark represented in the hoard. It is noteworthy, however, that the SMM component of the hoard includes no examples of coins with privy marks datable to the period from 1326 to the first semester of 1332<sup>(7)</sup>, and there are only two examples, at the very most, with marks datable to the period from the second semester of 1336 to 1338. Most of the florins in the SMM component are thus datable to the period from the last quarter of thirteenth century to the second semester of 1325. This raises the prospect that the two coins of 1336-1338 may

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vy mark of four small fleurs-de-lis in the form of a cross (*quattro giglietti in croce* [1338/II]: *LdZ*, p. 67; *CNF*, p. 172, n. 1466), while the illustration corresponds with the privy mark of the trifoliate cross (*croce trifogliata* [series VII, 1315/II-1325]: *CNF*, pp. 32-33, nn. 375-381).

(6) Lanz (Munich) sale 55 (13 Nov. 1990), lots 1230-1231.

(7) The period corresponds to Bernocchi's series VIII. See *CNF*, p. 34, nn. 400-405, pp. 149-160.

be intrusions and that the hoard was actually closed in 1325. Regarding these outliers as intrusions would not entirely disentangle the fifty-seven coins in the SMM component of the Willanzheim hoard from the slightly larger group among which they are preserved because that would bring the total number of coins down to fifty-eight. The one remaining intrusion is less certain, but it would perhaps be most appropriate to look for the additional intrusion among the several florins of the 1320s with privy marks that lacked a corresponding entry in the list of marks on the coins from the Willanzheim hoard. Further information about the composition of the entire hoard is needed before it will be possible to resolve the question of whether the outliers – plus one other coin from the group – are actually intrusions. In the meantime, it remains unclear whether the hoard was closed in 1325 or in 1338, though the earlier date seems more likely.

The earliest descriptions of the Willanzheim hoard indicate that all the coins were of the same typology, with the large fleur-de-lis on one side and St John the Baptist standing on the other. They also suggest that some of the coins were ‘signed’ imitations, possibly of Leuchtenberg in Bavaria’s Oberpfalz and/or other German mints, though it must be noted that modern research has not identified florin imitations of Leuchtenberg. Apart from the single papal florin, the coins from the Willanzheim hoard in the SMM consist entirely of florins ostensibly from the mint in Florence, but some of the apparently Florentine coins in the hoard may be ‘deceptive’ imitations<sup>(8)</sup>. Despite the uncertainties surrounding the closing date of the Willanzheim hoard, the publication of this account of the SMM component of the hoard provides the opportunity to reflect upon the classification of some of the early florins represented in the hoard and to broach the important subject of ‘deceptive imitations’ of the Florentine coins. This study also offers the opportunity to situate the Willanzheim hoard in the context of other florin hoards closed around the same time north of the Alps.

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(8) In this article, ‘signed’ imitations are understood to be coins that have the same types as the original on both obverse and reverse – in the case of florins, the large fleur-de-lis and the standing image of St John the Baptist, respectively – but identify a different place of issue and/or the issuing authority in the legends; they were sometimes struck to slightly different standards of weight and fineness than the originals but were generally struck to a good standard. ‘Deceptive’ imitations typically have the same types and legends as the originals, were presumably intended to circulate as such and were typically struck to an inferior standard. Some imitations, for example the imitations of Venetian gold struck in the Eastern Mediterranean, occupy a grey area between ‘signed’ and ‘deceptive’ imitations. See IVES, GRIERSON 1954; BENDALL, MORRISSON 1979.

No.	Description in SMM record	English translation	Cat.
Acquisitions of 14 July 1853			
1	<i>eine Taube mit einem Zweig</i>	a Dove with a branch	59
2	<i>ein Hut</i>	a Hat	16
3	<i>ein Schiffchen</i>	a Boat	19
Acquisitions of August 1853			
4	<i>eine Mitra (Tiara)</i>	Papal mitre (Tiara)	61
5	<i>eine Krone</i>	Crown	[?]
6	<i>ein Dogen hut</i>	A Doge's hat	9
7	<i>ein Schildchen</i>	a Shield	29
8	<i>die Sonne</i>	a Sun	[?]
9	<i>unter einem Sterne der Mond</i>	under a Star the Moon	41
10	<i>ein Stern</i>	a Star	1
11	<i>ein Löwenkopf im Vließ</i>	a Lion's head	47
12	<i>eine Heuschrecke</i>	a Locust	34
13	<i>Hirschgeweih</i>	Antlers	32
14	<i>ein Rad</i>	a Wheel	6
15	<i>ein gezacktes Rad</i>	a jagged Wheel	56
16	<i>ein gezacktes Doppelrad</i>	a jagged double-Wheel	14
17	<i>ein Thurm mit Zinnen</i>	a Tower with embattlements	11
18	<i>ein Kreuz</i>	a Cross	5
19	<i>ein Roß</i>	a Horse	[?]
20	<i>ein Fisch</i>	a Fish	2
21	<i>ein Schlüssel</i>	a Key	7
22	<i>ein Beil</i>	an Axe	52
23	<i>ein Hammer</i>	a Hammer	4
24	<i>zwei kreuzweis gelegte Nägel</i>	two Nails placed crosswise	28
25	<i>zwei ebenso gestellte Schwerter</i>	two equally placed Swords	45
26	<i>ein Zirkel (?)</i>	a Compass	13
27	<i>eine unbeseitete Leyer</i>	an unstrung Lyre	58
28	<i>ein Bogen</i>	a Bow	10
29	<i>ein Fässchen</i>	a Keg	38
30	<i>eine Sichel</i>	a Sickle	23

31	<i>ein B.</i>	a B	42
32	<i>eine aufwärtsstehende zweiblättrige Blume</i>	a standing two-petal Flower	48
33	<i>eine abwärtsstehende zweiblättrige Frucht</i>	a standing two-leaved Fruit	25
34	<i>ein Zweig mit zwei Ausläufern</i>	a Twig with two Branches	30
35	<i>eine Geißel</i>	a Scourge	[?]
36	<i>ein Kreuz mit Kreuzchen an den Balkenenden</i>	a Cross with Cross on the bar ends	54
37	<i>ein aus fünf Kugeln geformter Berg</i>	a Mount of five spheres	31
38	<i>ein Stern auf drei Kugeln</i>	a Star of three spheres	57
39	<i>ein Zirkel mit einem Halbkreise</i>	a Circle with a Semi-circle	15
40	<i>ein Gefäß mit einem Henkel</i>	a Vessel with a handle	20
41	<i>ein Faszen-Bündel</i>	a fastened Bundle	3
42	<i>ein grosser fünf strahl. Stern</i>	a large five-ray Star	[?]
43	<i>ein [...]</i>		
44	<i>[...]</i>		
45	<i>ein strahlendes Gesicht (Sonne) auf dem</i>	a radiant Face on the Sun	43
46+	<i>dann noch sieben mit verschiedenen Zeichen als</i>	then seven with different characters	[?]

TABLE 1 - Concordance between the SMM record of the privy marks represented in the original acquisitions of coins from the Willanzheim hoard in July and August 1853 and the catalogue.

## 2. The coins: Florentine gold florins and their stylistic evolution (to the 1330s)

The Willenzheim group provides a sample of Florentine gold florins issued from the last quarter of thirteenth century to the end of the 1330s sufficient to permit an analysis of the stylistic evolution of Florentine gold florin during these decades. The obverse and reverse types on these coins remained immobilised until 1533, with **FLOR ENTIA** around the fleur-de-lis on the obverse and **S IOHA NNES B** around the figure of St John the Baptist on reverse<sup>(9)</sup>. Over the years, however, the epigraphy and iconography underwent a series of subtle changes due to a variety of factors. Ives published the first analysis of these

(9) In this article, we regard the side with the legend **FLOR ENTIA** around the large fleur-de-lis as the obverse on the grounds that it gives the name and symbolic representation of the issuing authority; we leave aside the question of whether the die for this side was the fixed anvil (*pila*) or hand-held trussel (*torsello*), which in any case depended upon technical considerations. Given that hand-held dies endured greater wear and tear due to repeated hammering, it was generally preferable to use the fixed die for the more complex design, which in this case would have been the figure of the saint, regardless of the relative importance of the two sides.

changes, highlighting some of the salient developments in the coinage<sup>(10)</sup>. Bernocchi followed a similar methodology to identify thirty-one distinct series of coins, underlining the characteristics peculiar to each series<sup>(11)</sup>.

The studies of Ives and Bernocchi, especially the latter, provide the point of departure for the following analysis of the stylistic evolution of the Florentine gold florin over the period covered by the coins from the Willanzheim hoard and other coins associated with it in the SMM. On the basis of style and the hoard evidence, it is possible to propose a more precise chronology for the privy marks that belong to the so-called period of the unknown mint-masters (1252-1303) and to distinguish a plausible sequence of issues, as delineated in the catalogue below<sup>(12)</sup>. This has resulted in a final catalogue that follows, even for those issues belonging to this broad period, the possible chronological sequence of different privy marks. Furthermore, stylistic considerations make it possible to date florins with privy marks that are not mentioned in the *Libro della Zecca* or otherwise remain unidentified; they also facilitate the recognition of florins with identifiable privy marks that have characteristics inconsistent with the style and lettering of coins normally associated with the output from the Florentine mint in their respective periods. In other words, close considerations of style, especially when supported by other data, not only permits the more precise classification and dating of undated florins, but may also provide a useful tool for distinguishing 'deceptive' imitations of the coin from official issues of the Florentine mint.

*Period of the unknown mint-masters (second sem. 1252 - first sem. 1303)*

For coins issued from 1252 to 1303, during the so-called period of the unknown mint-masters, Bernocchi identified four series, the first three with St John represented in the archaic style and the fourth with the saint in a more evolved style<sup>(13)</sup>. The hoard evidence suggests that this change oc-

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(10) Ives 1952.

(11) *CNF*; BERNOCCHI 1976, tavv. I-XXX.

(12) Stylistic criteria alone are not infallible, especially when applied over relatively brief periods, above all because stylistic developments are not necessarily uniform or linear. They nevertheless provide a useful aid to dating, especially when supported by more objective data (GRIERSON 1975, p. 143). In the recent study of another hoard of gold florins, all belonging to the period of the unknown mint-masters (1252-1303), considerations of style supported by other evidence made it possible to put forward a plausible chronological sequence of the coins and propose datings of otherwise undated issues to circumscribed periods. See DE BENETTI 2015, pp. 110-119.

(13) On the distinctive characteristics of the archaic style as opposed to the more evolved style, see DE BENETTI 2015, pp. 73-80.



curred already during the early 1260s, since the Loggia dei banchi hoard of Pisa, which was closed between 1260 and 1266, included florins of this type<sup>(14)</sup>. The Willanzheim hoard contained several coins of the fourth series, conventionally dated to before 1303, when the retrospective registrations of privy marks and mint officials begin in the *Libro della Zecca*.

The few recorded florin hoards from the second half of thirteenth century make it possible to distinguish two groups of florins from the Willanzheim hoard that were struck during the period of unknown mint-masters; one group belongs to the period before about 1290 and the other to the immediately succeeding period. Coins of the first group make up the Aleppo and Acre Harbour hoards, which can be dated to before the fall of Acre to the Mamelukes on 18 May 1291 and other coastal cities over the succeeding three months<sup>(15)</sup>. The coins from two Italian hoards, one of the 1280s found at Alberese near Grosseto and the other of about 1290 found in Pavia, provide further data for distinguishing the florins struck between the 1260s and about 1290 from those struck between about 1290 and 1303<sup>(16)</sup>.

2a. *Series IV - from 1260s to about 1290 (first semester)*<sup>(17)</sup>

Research on the Alberese hoard, which was recovered in its entirety, and comparison with the other hoards of this period, has made it possible to identify some elements in the florins of series IV that changed over time, from the introduction of the series IV coins during the 1260s until the 1280s when the latest issues in that hoard were probably struck<sup>(18)</sup>. One

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(14) The precise closing date of this hoard is debated; the uncertainties that persist over the dating may be due to the fact that it was only partially recovered. Recent studies have proposed 1260 (DAY 2011), 1265 (GRIERSON 2006, p. 417), 1266 (TRAVAINI 2001, p. 195) and after 1266 (BALDASSARRI 2010, pp. 405-406). The coins from the hoard are catalogued in LENZI 1978.

(15) On the Aleppo hoard, see DAY, *forthcoming*; on the Acre Harbour hoard, see KOOL 2006. Brief summaries of the two hoards appear in DE BENETTI 2015, pp. 68-71, 108-109.

(16) DE BENETTI, *forthcoming*.

(17) The earlier dating of the Acre Harbour and Aleppo hoards relative to when the coins were actually removed from circulation – i.e. May 1291 – is based on the likelihood that the florins in the hoards left the mint in Florence and travelled to the Eastern Mediterranean before the end of the sailing season in 1290, in other words before the beginning of the second semester of 1290 very probably on 1 November. Winter sailing in the Mediterranean was still in its infancy in the later thirteenth century; the introduction of the mariner's compass in the thirteenth century opened the way to winter sailing, but maritime travel from October to April, and especially from November to February, only gradually became more common and never became routine. See DAY, *forthcoming*.

(18) DE BENETTI 2015, pp. 110-119. Considerations of style and comparison with other hoards has made possible to establish the closing date of the Alberese hoard broadly

of the characteristic features on the series IV florins is a small pellet at the bottom of the fleur-de-lis that was absent on the florins of series I-III (with the saint in a more archaic style); it was very small on the early florins of series IV, the ones datable to the 1260s, and became more evident over time. The same sort of change over this period is also evident in the pellets at the end of the pendants and on the stamina of the fleur-de-lis.

Cat.	Privy marks represented in the Willanzheim hoard (period of the unknown mint-masters)		Weight	Other early hoards with numbers of recorded examples (closing dates)			
	<i>Libro della Zecca</i>	English description		Alberese (1280s)	Pavia (c. 1290)	Acre (May 1291)	Aleppo (c. 1291)
1	<i>Stella</i>	6-pointed star	3.48	1	–	1	2
2	<i>Piscis</i>	Fish	3.47	7	1	–	4
3	<i>Torsellus</i>	Bale	3.46	–	–	–	4
4	<i>Martellus</i>	Hammer	3.51	–	–	1	7
5	Unlisted <sup>(19)</sup>	Voided cross with pellets	3.45	2	–	2	4
6	<i>Caroccius</i>	Wagon-wheel	3.49	–	–	–	7
7	<i>Clavis</i>	Key	3.51	–	–	1	9
8	<i>Cesorie</i>	Shears	3.52	–	–	–	–

TABLE 2 - Privy marks on series IV florins struck to about 1290 represented in the Willanzheim hoard with the numbers of examples in other early hoards<sup>(20)</sup>.

between the late 1270s and the late 1280s, with a date before about 1285 as the most likely. It is noteworthy that the Alberese hoard was recovered in its entirety while other florin hoards of the second half of thirteenth century were only partially recovered or documented.

(19) This privy mark is a voided cross with a flower, floret or pellet on a stem in each angle. The mark is not listed in the *Libro della Zecca* among those of the unknown mint-masters; it should not be confused with the mark that the *Libro* describes as a “*crux cum quattuor punctis circum circa cruce*” (*LdZ*, p. 9), which in any case has distinct referents among the coins of this period (*CNF*, p. 20, nn. 212-216). Bernocchi described the mark as a “*croce incavata accostata da quattro punti*” and assigned it to the period of the unknown mint-masters (*CNF*, pp. 19-20, nn. 204-211). At the same time, Bernocchi described the same mark as the unlisted one as a “*croce compassata con quattro fiori*” and dated it to the first semester of 1323 (*CNF*, p. 142, nn. 1294-1295, referring to the two specimens found in the Alberese hoard), thus associating them, erroneously, with a mark that the *Libro della Zecca* describes simply as “*crux compassata*” (*LdZ*, p. 33). Hoard evidence indeed confirms that florins carrying the privy mark of the voided cross with a pellet on a stem in each angle belong to the period of the unknown masters and are datable to the years before about 1290. See DE BENETTI 2015, p. 104.

(20) The closing dates given in parentheses for the respective hoards in Table 2 refer to when the hoards were most likely removed from circulation, though the latest coins in the

On the reverse, the figure of the saint, after the first issues of the series IV coins with the saint in the more evolved style in the 1260s<sup>(21)</sup>, became more refined over subsequent years, as is clear from a careful consideration, through the prism of the coins, of the precise application of the punches in the preparation of the dies. The lettering also became more refined, especially the letters **S** and **A**, with the **S** becoming thinner and the tapering on the **A** becoming more pronounced at the base. On the basis of style and in the light of the available hoard evidence, eight of the privy marks on the florins of the Willanzheim hoard can be dated to before about 1290 (see above, Table 2).

The florins of Bernocchi's series IV from before about 1290 attested in the Willanzheim hoard show characteristics that, for the most part, are peculiar to the later issues of the period from the 1260s to the 1280s. The coins of this group in the Willanzheim hoard are datable to a narrower period from the later 1270s to about 1290; the florins with the privy marks of the six-pointed star, the fish and the bale are probably the oldest in this group (see above, Table 2, nn. 1-3, respectively). These coins show the letter **A** in a more archaic style, typical of the earliest issues of the florin in the 1250s and early 1260s, while their other characteristics are consistent with those found on the later issues of this period. For the florin with the privy mark of the shears (*cesorie*), the dating to this period is based solely on considerations of style and the characteristics that the coin shares with the other florins of this group, since the privy mark is listed in the *Libro della Zecca* among the privy marks of unknown mint-masters but is not represented in hoards that were closed in the thirteenth century. On the basis of style, the coin perhaps belongs to the late 1280s or the very beginning of the 1290s; there remains some question, in other words, as to whether coins with the shears belong to this group or a later group in this series.

The privy marks on all but one of these florins are clearly described in the *Libro della Zecca* among those of the unknown mint-masters that appeared on coins struck before the second semester of 1303; the only exception is the privy mark of a voided cross, which can be dated to the period of the unknown masters on the basis of the hoard evidence. Interestingly, the majority of the florins in this group clearly show traces of wear; the weight of

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Acre Harbour and Aleppo hoards cannot have been struck later than the first semester of 1290. See above, note 17.

(21) The first issues with the saint shown in a more refined style carry small symbols as privy marks, e.g. pellet between the saint's feet, small cross, bullseye or pelleted annulet, crescent with pellet, small square, trefoil with stem, rosette with five petals, small fleur-de-lis.

some of the specimens is also appreciably below the official standard of 3.535 g. By the time that the hoard was closed, the coins had been circulating for nearly half a century.

2b. *Series IV - after c. 1290 (from the second semester of 1290)*

The majority of the florins in the Willanzheim hoard from Bernocchi's series IV are datable to the period from November 1290 to October 1303. The *Libro della Zecca* describes the privy marks on the florins of this group among those of the unknown mint-masters, but they are not attested in any of the hoards closed before 1291. The dating of these coins to the last dozen years or so of the period of the unknown masters is also consistent with the stylistic evolution of the coinage, since the coins show some characteristics that are more developed in comparison with the earlier florins from before about 1290. The hoard evidence and stylistic considerations suggest that twelve of the florins from the Willanzheim are datable to this period (see below, Table 3).

Cat.	Privy mark (period of the unknown mint-masters)		Chronology	
	<i>Libro della Zecca</i>	English translation		
9	<i>Mitra</i>	Mitre	c. 1290-1299	
10	<i>Arcus</i>	Bow		
11	<i>Torricella</i>	Tower		
12	<i>Panocchie panichi</i>	Panic-grass or panicum cob		
13	<i>Sexstarum</i>	Compass		
14	<i>Pons</i>	Bridge		
15	<i>Bottonis</i>	Button		
16	<i>Cappellus</i>	Hat		
17	<i>Forficum</i>	Scissors		
18	<i>Bordonis</i>	Pilgrim-staff		1300/II
19	<i>Barca</i>	Boat		1301-1303
20	<i>Ampulla cum Beccuccio</i>	Cruet		

TABLE 3 - Privy marks of series IV florins, struck after c. 1290, represented in the Willanzheim hoard.

The coins of this group show only very subtle differences in style from the florins of the previous group, but it is possible to discern an increasing lack of precision, which is evident in the larger dimensions of certain details.

On the obverse, for example, the pellets at the upper and lower extremities of the fleur-de-lis and on the stamina generally become larger on the later coins while the pendants become more open. On the reverse, the increasing lack of precision is most apparent in the decorative pattern of the cloak and along its fringes. The pellet or bezant that forms the clasp on his cloak and the knob on the saint's ferula are also larger on the coins struck after about 1290 than they had been beforehand, as is the beading of the saint's nimbus. Another important change occurred in the size of the saint's hand, which became larger, and the positioning of his arm, which became more oblique and sometimes almost horizontal, probably to allow space for larger and more complex privy marks. In addition, the two small pellets that represented the saint's eyes were sometimes poorly positioned. Meanwhile, the lettering continued to follow a pattern of evolution already begun on the coins of the previous group, with the diagonal strokes of the **A** acquiring a more exaggerated taper to a larger base while the curved lines of the **S**, after first becoming thinner and more sinuous, assumed larger dimensions.

Two privy marks listed in the *Libro della Zecca* from the period of the unknown mint-masters, the braids (*treccie*) and pilgrim's staff (*bordonis*), are precisely datable to the first and second semesters of 1300, respectively, based on references in the notarial evidence, and they provide a useful gauge by which to assess the stylistic evolution of the florin around that time<sup>(22)</sup>. One of these marks, the pilgrim's staff, is represented in the Willanzheim hoard<sup>(23)</sup>. The coins with this mark show the same stylistic traits as those mentioned above in a more fully developed form, which makes it possible to proffer a possible chronology of the coins from this group in the hoard. On the basis of style, the florins with the privy marks of mitre (*mitra*), bow (*arcus*) and tower (*torricella*) were most likely the earliest issues of this group, probably belonging to the period from about 1290 to about 1295.

The characteristics of the florins datable to 1300 are also useful for determining the subsequent steps in the stylistic evolution of the coins from Bernocchi's series IV, particularly in comparison with the next precisely da-

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(22) *LdZ*, pp. 6 and note 1, p. 4 and note 1, respectively; the notes reproduce the relevant extracts from the notarial evidence. For the complete acts, see ASF, *Notarile antecosimiano*, 6695/F66 I, fol. 200r (1300 Aug. 4); 6696/F66 II, fol. 2r (1300 Jan. 27, *stile Fiorentino*). See also *CNF*, pp. xv-xvi, p. 29, n. 339; p. 94, nn. 918-922; pp. 94-95, nn. 923-931, tav. XIII.1-2.

(23) The adoption of the pilgrim's staff as the privy mark on florins of the second semester of 1300 was probably tied to the jubilee called by Pope Boniface VIII (1294/1295-1303) in the same year. The jubilee drew many Florentines to Rome, including Giovanni Villani, who claimed to have been inspired to write his *Cronica* after attending the celebration in Rome.

table issues from the second semester of 1303 when the retrospective entries in the *Libro della Zecca* begin to allow precise identifications. The Willanzheim hoard includes florins with privy marks from both the first and second semesters of 1304, namely a palm leaf (*palma*) and an anvil (*incudine*). On the coins of both issues, there is a small thorn that extends from the upper part of each of the pendants dangling from the side-petals of the fleur-de-lis and almost touches the flower; this is a standard feature on the issues of the immediately following years. The detail is absent from the florins struck in 1300 and from the majority of coins in the Willanzheim hoard that are dated here to the period from about 1290 to the first semester of 1303, but it is present on the florins with privy marks of the boat (*barca*) and the cruet (*ampulla con beccuccio*). The adoption of this characteristic therefore might have occurred very soon after 1300, with the coins from the period of the unknown mint-masters that show this trait belonging to the period from 1301 to 1303. The development of the epigraphy supports this dating. Florins struck from 1304 onwards have a more rounded **O** while the diagonal foot on the **R** is elongated and the **S** becomes more refined. These details are visible only on a small number of issues from the period of the unknown mint masters, which suggests that they belong to a circumscribed period. Because they exhibit features that are absent on florins with privy marks datable to 1300 but present on the coins from the second semester of 1303 onwards, it is likely that the florins from the Willanzheim hoard with the boat and cruet as privy marks were struck between 1301 and 1303<sup>(24)</sup>.

One of the florins from the Willanzheim hoard displays a stylistic feature that was used only for a very short period and then abandoned. Florins with a cruet as privy mark have two pellets on the saint's ferula rather than one. This feature is present on only one other issue of florins from the period of the unknown mint-masters, the one that carries a helmet (*elmo*) as privy mark. This privy mark is not represented in the Willanzheim hoard, but it was probably in use during the semester either immediately before the florins with the cruet as privy mark or immediately afterwards. Coins with both of these privy marks require further consideration because Bernocchi listed them twice in his *Corpus*, once among the coins with the privy marks of the unknown mint-masters during the period 1252-1303 that are listed in the *Libro della Zecca* and once among the florins of his series V, which he dated to 1303-1310 on the basis of style. Significantly, the retrospective en-

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(24) It needs to be stressed, however, that the stylistic evolution of the Florentine gold florin in this period was neither linear nor uniform; the classifications proposed here on the basis of style therefore must remain provisional in the absence of corroborating data.

tries in the *Libro della Zecca* for the period from 1303 to 1310 identify neither the cruet nor the helmet among the privy marks used on gold florins during that period<sup>(25)</sup>. For both privy marks, the distinction between the two periods is in fact inappropriate because all the coins bearing these marks are datable to the period before 1303 on the basis of not only style but also the description of the marks in the *Libro della Zecca* among those of unknown mint-masters<sup>(26)</sup>.

Bernocchi similarly provided a double-attribution for the privy mark of the boat, which is listed in the *Libro della Zecca* among the marks of the unknown mint-masters; like the cruet, the boat is also represented in the Willanzheim hoard. The *CNF* classifies the coins with the boat as privy mark once among the issues of 1252-1303, describing the mark as a *barca* (boat), and once among the issues of 1303-1310, describing the mark as an *aratro* (plow)<sup>(27)</sup>. All of these marks nevertheless are clearly identifiable with the one that the *Libro della Zecca* describes as a boat among those of the unknown mint-masters. Like the coins with the cruet and helmet as privy mark, moreover, those with the boat show stylistic features that are consistent with the later issues of the period from about 1290 to the first semester of 1303, thus suggesting that they were struck between 1301 and 1303.

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(25) For the privy mark of the cruet (*ampulla* or *ampulla con beccuccio*), see *LdZ*, p. 9; *CNF*, p. 16, n. 154 (Tav. II.9, 1252-1303); pp. 30-31, nn. 352-360 (Tav. IV.28, 1303-1310). For the privy mark of the helmet (*elmo*), see *LdZ*, p. 3; *CNF*, p. 20, n. 222 (Tav. III.4, 1252-1303); p. 31, nn. 364-365 (Tab. IV.30, 1303-1310). Bernocchi distinguished between one issue with the helmet facing left, which he assigned to the period of the unknown mint-masters, and another with the helmet facing right, which he assigned to series V, but the issue with the helmet facing left has proven to be non-existent.

(26) What this suggests is that Bernocchi recognised how the stylistic details of these florins were much closer to those of the coins struck from 1303 onwards. His apparent attributions of coins with these marks to the period of the unknown mint-masters from 1252 to 1303 were based mainly if not exclusively on the descriptions and illustrations of the privy marks in the *Libro della Zecca*. Neither of the entries for these coins in his *Corpus* were based on coins that he had been able to examine directly. Bernocchi's single entry for a coin with the cruet as privy mark during the period from 1252 to 1303 was based on an example from the Del Vivo Collection listed in the *CNF*, where it was dated to the period from 1303 onwards (*CNF* XII, p. 92, n. 606); his single entry for the helmet as privy mark during the same period was based on no coin at all but on the description and illustration of the mark in the *Libro della Zecca* alone.

(27) *LdZ*, p. 5; *CNF*, p. 17, n. 166 and tav. II.13 (1252-1303); p. 31, nn. 361-363 and tav. IV.29 (1303-1310). Direct examination of relevant florins listed in the *CNF* shows no significant stylistic differences between them.

Typology	1260s (not in the Willanzheim hoard)	before c. 1290	after c. 1290	1300
OBVERSE (fleur-de-lis)	small pellets on stamina; very small pellets at top and bottom of fleur-de-lis; pendants pointing almost straight downwards	slightly larger pellets on stamina and at top and bottom of fleur-de-lis	still larger pellets, especially at top and bottom of fleur-de-lis; pendants tend to be more open	larger pellets on fleur-de-lis; more open pendants sometimes with small thorn above; on subsequent issues, pendant touches side-petal of fleur-de-lis
REVERSE (St John the Baptist)	forearm oblique; small pellets for clasp on cloak and knob on ferula	forearm becoming more oblique; pellets for clasp on cloak and knob on ferula becoming larger	increasing imprecision; pellets for clasp on cloak and knob on ferula becoming larger still	larger hand and more oblique forearm; bezant for clasp on cloak; larger beading for nimbus
LETTERING	Æ in archaic style; R with small triangular foot; some specimens have double-barred N (as on coins of previous series with saint in archaic style)	Æ gradually evolving into less archaic style; S thinner and more sinuous	diagonal strokes on Æ more tapered and larger at base; S becoming larger	Æ with tapered diagonal strokes and larger base; R with longer triangular foot

TABLE 4 - Summary of the stylistic evolution of gold florins, 1260s-1303 (Bernocchi series IV).

*Period of the mostly known mint-masters (from the second semester of 1303)*

With some exceptions, the information recorded in the *Libro della Zecca* facilitates the attribution of every Florentine gold florin struck from the second semester of 1303 onwards to a period of within six months on the basis of their respective privy marks. This makes it possible to gauge the stylistic evolution of the coins after 1303 more precisely. Bernocchi distinguished discrete groups or series of the coins struck after 1303 on the basis of style. The subsequent consideration of the coins from after 1303 in the Willanzheim hoard follows Bernocchi's scheme, adding further distinguishing characteristics to the ones that he already noted.

*2c. Series V - from the second semester of 1303 to the second semester of 1310*

The Willanzheim includes florins with eleven different privy marks



struck during the period from the first semester of 1304 to the second semester of 1310 (see below, Table 4). According to Bernocchi, florins of this period show a rougher style than those of the preceding period. This is especially evident on the anthers at the ends of the stamina and on the fringed cloak of the saint while the pendants on the side-petals of the fleur-de-lis become more open; in terms of the lettering, the **R** shows a longer triangular 'foot' <sup>(28)</sup>.

There are also other details that characterise the florins of this period. On the obverse, the pendants on the side-petals are not only more open but also have a small thorn that eventually develops to connect the pendants to their respective petals. As noted above, this detail begins to appear on florins that may be considered among the latest issues of the previous period. In regard to the lettering, the form of the **O** is round and the curved forms of the **S** are larger and sometimes show a different style, with bifurcate serifs in the form of a circumflex or swallowtail.

Cat.	Privy mark		Chronology
	<i>Libro della Zecca</i>	English description	
21	<i>Palma</i>	Palm	1304/I
22	<i>Ancudinis</i>	Anvil	1304/II
23	<i>Segolum</i>	Sickle	1305/I
24	<i>Schala</i>	Ladder	1306/I
25	<i>Pera</i>	Pear	1306/II
26	<i>Pettinis</i>	Comb	1307/II
27	<i>Folea ficus</i>	Fig leaf	1308/I
28	<i>Dua Clovia incrocchiata</i>	Crossed nails	1308/II
29	<i>Clipeum</i>	Shield	1309/I
30	<i>Duarum pannocchiarium de grano in uno gambo</i>	two grain-cobs with stem	1309/II
31	<i>Mons</i>	Mount	1310/II

TABLE 5 - Privy marks on series V florins represented in the Willanzheim hoard, struck from the second semester of 1303 to 1310.

Careful examination of the florins of this group of coins from the Willanzheim hoard, particularly of the standing image of the saint on the reverse, reveals the presence of a defect in the reverse dies that becomes more pronounced over time, probably due to the prolonged use of a defective punch

(28) BERNOCCHI 1976, tav. V.

in the preparation of the dies. The defect occurs in the punch used to realise the left leg and foot of the saint, beginning on florins struck during the first semester of 1305, which have a sickle (*segolum*) as privy mark; comparison with florins of the immediately preceding years suggests that the defect arose from an effort to draw a clear distinction between the large toe on the left foot and the other toes. The defect continues to appear on florins and gradually becomes more pronounced until the second semester of 1310, when the punch was either replaced or reworked for the coins with the mount (*monte*) as privy mark<sup>(29)</sup>. The appearance of the defect and its development over time provides an additional tool for confirming the chronological sequence of issues in this period and/or identifying deceptive imitations.

The detail has in fact made it possible to identify gold florins produced during the second semester of 1309 for the very first time. The *Libro della Zecca* describes the privy mark on the florins of this semester as two grain-cobs with stem (*duarum pannocchiarium de grano in uno gambo*), which the master of the mint for gold coinage, Lapo di Iacopo del Giudice, supposedly used to identify the coins struck under his charge<sup>(30)</sup>. Until now, no such florins have been attributed to this semester. Among the florins in the Willanzheim hoard, there is one specimen with a privy mark that resembles one of the marks listed in the *Libro della Zecca* among those of the unknown mint-masters and traditionally described as two oak leaves with branch (*duas foleas quercus in quodam gambo*)<sup>(31)</sup>. Published examples identified with this mark and dated to before 1303 nevertheless show characteristics that are typical of florins struck during the period from the second semester of 1303 to 1310, such as the open pendants that touch or almost touch the flower; in addition, all of these specimens were struck from dies with the same defect on the left foot of the saint that occurs on florins and silver *popolini* securely datable to the period from 1305 to 1310<sup>(32)</sup>. This makes it possible to identify the privy mark on the flor-

(29) Interestingly, the same punches for the legs of the saint that were used in the preparation of the reverse dies for the gold florin were also used to prepare the reverse dies of the second issue of the city's silver *grosso* or *popolino*, struck from 1306. The same defect on the left foot of the saint on the florins also occurs on the reverse dies for the silver issues until 1310.

(30) *LdZ*, pp. 16-17. The accompanying design is repeated in the *CNF*, p. 109 (tav. XIII.22).

(31) *LdZ*, p. 10.

(32) For example, see *CNI*XII, p. 94, n. 628 (tav. XVI, 23) = *CNF*, p. 21, n. 235 (tav. III.9). For two specimens in the Museo Nazionale del Bargello with the same privy mark but described as two pine cones (*due pigne*), see TODERI, VANNEL 2005, p. 11, nn. 96-97 (tav. 47.96-97); cfr. *CNF*, p. 26, n. 303 (tav. IV.2). The well-worn coin from the Acre Harbour hoard with the privy mark identified as the two oak leaves with branch actually has the rook (*rocco*) as privy mark. See KOOL 2006, n. 19; DE BENETTI 2015, p. 102.

in from the Willanzheim hoard – and on other florins that carry the same mark – with the one described in the *Libro della Zecca* for the second semester of 1309 as the two grain-cobs with stem but heretofore regarded as the two oak leaves with branch of the period of the unknown mint-masters.

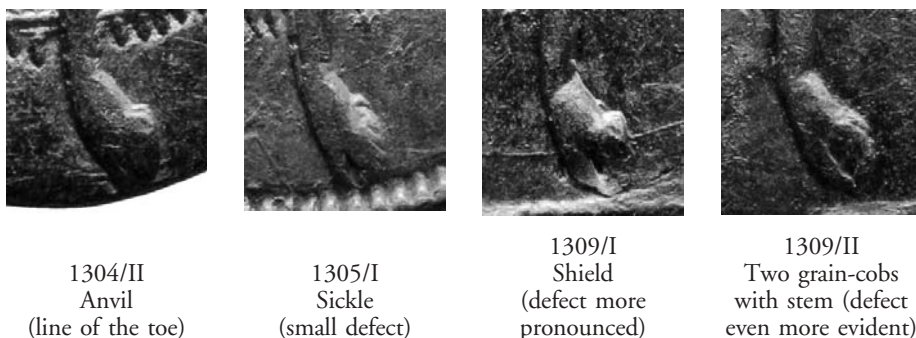


FIG. 1 - The development of the defect in the punch for the left leg and foot of St John the Baptist, 1304-1310.

2d. *Series VI - from the first semester of 1311 to the first semester of 1315*

Florins struck during the period from May 1311 to October 1315 are well represented in the Willanzheim hoard, with the majority of the privy marks of the period listed in the *Libro della Zecca* attested in the hoard (Table 5). This provides a solid foundation for analysing the main stylistic changes that occurred in the design of the florin over these years. The period begins in the first semester of 1311 with coins that carry the deer antlers with annulet as privy mark. These coins are marked by several new characteristics. On the reverse, for example, the clasp on the saint's cloak and the knob on the saint's ferula are now formed by an annulet instead of a pellet or bezant, as on preceding issues<sup>(33)</sup>. Most of the florins from Bernocchi's series VI possess these features, though some show the annulet only as the clasp on the cloak while others show it only as the knob on the ferula; still others use a pellet or bezant both for the clasp and the knob. The specimens from the Willanzheim hoard provide a good sample of this feature and the various combinations in which it appears.

The fringes of the saint's cloak, which are more irregular and less precise than earlier, constitute another distinctive characteristic on some florins of this period. The feature is especially evident on two specimens from the hoard, one with a latch (*chiavistellus*) as privy mark struck in the second se-

(33) BERNOCCHI 1976, tav. VI.

mester of 1312 and the other with the cauldron (*caldaria*) struck in the first semester of 1313. Other features, such as the pendants, remain unchanged in comparison with the previous series.

Another florin from the Willanzheim hoard, the one with a cricket (*grillo*) as privy mark, has stylistic features that are inconsistent with the traditional classification and chronology. The *Libro della Zecca* lists this privy mark among those of the unknown mint-masters, which are generally datable to the period from 1252 to the first semester of 1303<sup>(34)</sup>. The style of the Willanzheim specimen and other florins with the same mark nevertheless raises doubts about the conventional chronology. The coins show characteristics that are typical of later issues, for example the annulets used for the clasp on the saint's cloak and the knob on the saint's ferula, which appear only on florins struck after 1310<sup>(35)</sup>. Because the *Libro della Zecca* begins to record the names of the mint-masters and their respective privy marks from the second semester of 1303, scholars heretofore have assumed that all of the privy marks listed on the first folios of the *Libro* belong to the preceding half-century. The *Libro* nevertheless provides no information about the chronology of these privy marks, referring to them simply as marks for which it was impossible to find any remembrance in the records of the mint<sup>(36)</sup>. This allows the possibility that the list of privy marks may include one or more that were used after 1303, perhaps the unrecorded one used during the first semester of 1312<sup>(37)</sup>. It is nevertheless unlikely that the coins with the cricket as privy mark were struck after 1315, because mint scribes began to keep a contemporaneous record of the names of senior mint personnel and the privy marks used on the coins in 1316/1317. Florins with the cricket as privy mark therefore were probably struck between 1310 and the first semester of 1315, possibly during the first semester of 1312 when there is a lacuna in the retrospective record.

(34) *LdZ*, p. 9; *CNF*, p. 23, nn. 257-259 (tav. III.17).

(35) In addition to the florin from the hoard, seven other coins with the cricket as privy mark have been taken into consideration: British Museum 1885,0405.28; Museo Nazionale Romano (*CNI*XII, p. 94, n. 632 [tav. XVI.26] = *CNF*, p. 23, n. 257); Museo Nazionale di Pisa (*CNF*, p. 23, n. 258.); Museo Nazionale del Bargello (TODERI, VANNEL 2005, p. 9, n. 76 [tav. 46.76] = *CNF*, p. 23, n. 259); NAC sale 44 (26 Nov. 2007), lot 418; H. D. Rauch sale 82 (23 Apr. 2008), lot 1726; one other example in a private collection.

(36) *LdZ*, p. 2: "*Infrascripti sunt singna fatta in florenis auri coniatas per populum et comune Florentie, de quibus et tempore quorum dominorum et officialium et sententiarum et aliorum officialium ditte monete auri non reperiuntur memoria seu libri per dominos et officiales monete preditte supradittos [...]*".

(37) *LdZ*, p. 19.

Cat.	Privy mark		Chronology
	<i>Libro della Zecca</i>	English description	
32	<i>Cornua cervi</i>	Deer antlers [with annulet]	1311/I
33	<i>Porticus</i>	Archway	1311/II
34	<i>Grillo</i>	Cricket	1311-1315 (1312/I ?)
35	<i>Chiavistellus</i>	Latch	1312/II
36	<i>Caldaria</i>	Cauldron	1313/I
37	<i>Staffa</i>	Stirrup	1313/II
38	<i>Vegetes</i>	Wine-cask	1314/I

TABLE 6 - Privy marks on series VI florins represented in the Willanzheim hoard, struck from the first semester of 1311 to the first semester of 1315.

2e. *Series VII - from the second semester of 1315 to the second semester of 1325*

The florins of Bernocchi's series VII were virtually unchanged in terms of style from those of the preceding series. Most of the details that characterised the series VI florins were also present on the majority of the coins from this period. The details included the peculiarities of the pendants, annulets for the clasp on the saint's cloak and the knob on the saint's ferula as well as a general lack of precision, especially evident on some of the coins along the fringes of the saint's cloak and in the position of the pellets used for the saint's eyes.

A new detail that characterises some of the florins of this period occurs in the rendering of the lower fringe of the cloak, which is becoming straighter<sup>(38)</sup>. Another new detail that occurs on the coins is the **S**; most issues, especially those from after 1320, show a different style with bifurcate ends on the letter in the form of a circumflex or swallowtail. One of the florins from the Willanzheim hoard has a rooster (*gallus*) as privy mark, which the *Libro della Zecca* records twice within the period of the series VII coins, once in the retrospective entry for the second semester of 1314 and once in the contemporaneous entry for the first semester of 1320. This coin is datable to the latter issue on stylistic grounds and because the ends of the **S** have the distinctive circumflex or swallowtail form that often occurs on the coins struck from 1320 onwards. Around the time of this issue, the pendants on the side-petals of the fleur-de-lis start to become more open, a characteristic that is even more accentuated on the florins of the succeeding series (1326-1332).

(38) BERNOCCHI 1976, tav. VII.

Cat.	Privy mark		Chronology
	<i>Libro della Zecca</i>	English description	
39	<i>Morsis</i>	Clamp	1316/I
40	<i>Fiaschus</i>	Flask	1317/I
41	<i>Luna et stella</i>	Crescent moon with star	1317/II
42	<i>Acciaiuolis</i>	Flint striker	1318/I
43	<i>Solis</i>	Sun with face	1318/II
44	<i>Gallus</i>	Rooster	1320/I
45	<i>Duas spate incrocchiate</i>	Crossed swords	1320/II
46	<i>Cesorie</i>	Scissors	1321/I
47	<i>Testa leonis</i>	Lion's head	1321/II
48	<i>Rosa in uno gambo cum duobus foliis</i>	Rose with two leaves and stem	1322/I
49	<i>Mons cum folea floris super mont</i>	Mount with fig leaf	1322/II
50	<i>Coppa cum gambo aperto</i>	Cup with stem	1323/II
51	<i>Spinosis</i>	Hedgehog	1324/I
52	<i>Accetta</i>	Axe or hatchet	1324/II
53	<i>Leonicinus sedens</i>	Seated lion	1325/II
54	Unlisted*	Trifoliate cross	1315-1325

\*No image available

TABLE 7 - Privy marks on series VII florins represented in the Willanzheim hoard, struck from the second semester of 1315 to the second semester of 1325.

Included among the florins of this period is the missing coin for which survives a coin-ticket with a hand-drawn illustration of the privy mark and references to the catalogues of Orsini, Duval and Joseph<sup>(39)</sup>. The drawing of the privy mark closely matches the illustration of the trifoliate cross (*croce trifogliata*) in the *CNF*. On the basis of style, Bernocchi dated the coins with the trifoliate cross as privy mark broadly to the period from the second semester of 1315 to the second semester of 1325<sup>(40)</sup>. Close comparison of specimens with this privy mark against other florins securely datable to this period suggest that they share a similar style. The privy mark of the trifoliate

(39) The ticket reports the following classification: ORSINI 1760, p. 58; DUVAL, FROELICH 1759, p. 92.14; JOSEPH 1883, n. 133.

(40) *CNF*, pp. 32-33, nn. 375-381; cfr. TODERI, VANNEL 2005, p. 13, nn. 120-121 (tavv. 49.120, 50.121).

cross also corresponds more closely with one of the descriptions in the list of marks on the florins that the SMM purchased in 1853 <sup>(41)</sup>.

2f. *Series VIII - from the first semester of 1326 to the first semester of 1332*

There are no florins of Bernocchi's series VIII attested in the Willanzheim hoard, but it is noteworthy that the florins of 1325/1326 begin to show a new characteristic on the lower part of the cloak, which is now beaded <sup>(42)</sup> or has very short fringes. On the obverse, the pendants on the side-petals of the fleur-de-lis are now very open.

2g. *Series IX - from the second semester of 1332 to the first semester of 1348*

There is only one florin securely datable to the period 1332-1348 in the group of coins in the SMM among which the acquisitions from the Willanzheim hoard are preserved. According to Bernocchi, florins struck during this period show some peculiar characteristics <sup>(43)</sup>. On the obverse, the pendants on the side-petals of the fleur-de-lis are now less open; on the reverse, the lower part of the saint's cloak continues to be beaded, as on the coins of the previous series, but the clasp on the cloak is now always formed by an annulet while the knob on the saint's ferula always takes the form of a pellet. In addition, the cloak is narrower and more curved along the lower extremity in comparison with coins of the previous series. There are also some changes in the lettering, with the **R** now showing a shorter 'foot' and the long diagonal strokes of the **Ä** narrower at their base.

Cat.	Privy mark		Chronology
	<i>Libro della Zecca</i>	English description	
55	<i>Arundins</i>	Swallow	1336/II

TABLE 8 - Privy marks on series IX florins represented in the Willanzheim hoard, struck from the second semester of 1332 to the first semester of 1348.

The single florin of this period with the swallow (*rondine*) as privy mark was struck during the second semester of 1336. The gap of eleven years between the date of this coin and that of the immediately preceding coin in the group raises doubts about whether the coin of 1336 belongs to the hoard at

(41) See above, Table 1, n. 36: "*ein Kreuz mit kreuzchen an den Balkenenden*" (a cross with crosses at its extremities).

(42) BERNOCCHI 1976, tav. VIII.

(43) BERNOCCHI 1976, tav. IX.

all. As noted above, moreover, the group of florins in the SMM among which the coins from the Willanzheim hoard are now preserved includes sixty-one Florentine gold florins, not including the missing coin discussed above (Cat. 54). The acquisition records of the SMM nevertheless suggest that the museum originally purchased fifty-seven coins from the hoard, including a papal florin that is preserved separately among the museum's papal coins, which leaves fifty-six Florentine coins from the hoard. Unless there were further acquisitions of coins from the Willanzheim hoard after the initial acquisitions of 1853, in other words, the group of florins among which the coins from the hoard are preserved, including the missing coin, contains six intrusions. Interestingly, the florin with the swallow as privy mark shows considerable traces of wear; if this coin were part of the hoard, it would have been the latest coin, presumably removed from circulation relatively soon after production. It would be reasonable to expect, in other words, that the florin with the swallow as privy mark were in better condition than the other coins from the hoard, but its condition is appreciably worse than many of the older coins in the group. The incomplete and imprecise record of the privy marks on the florins from the Willanzheim hoard that the SMM acquired in 1853 makes it impossible to determine the full composition of the SMM component of the hoard and isolate the intrusions, but the absence of the swallow from the list certainly allows the possibility that the coin with the swallow as privy mark was among the intrusions.

Only two of the florins intermingled with the coins from the Willanzheim can be unequivocally identified as intrusions. One has a cross ancré (*croce ancorata*) as privy mark, which dates it to 1334/I<sup>(44)</sup>, while the other has a sword (*spata*) as privy mark, which dates it to 1334/II<sup>(45)</sup>; the SMM

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(44) This coin is noteworthy because its privy mark differs somewhat from the marginal illustration in the *Libro della Zecca*. The cross on the coin is cuspidated, with pointed extremities, while the cross pictured in the *Libro della Zecca* is a kind of cuspidated cross ancré. There is no question that the example intermingled with the coins of the Willanzheim hoard belongs to this series because its stylistic features are typical of those that characterise the coins of this period, thus confirming the dating of this issue to the first semester of 1334. In the *CNF*, Bernocchi lists florins with this privy mark twice, describing it first as a cuspidated cross (*croce cuspidata*) and dating the coins on which it appears to the period 1332/II-1348/I, and then as a cross ancré (*croce ancorata*) on coins of the first semester of 1334. Respectively, see *CNF*, p. 35, nn. 408-410 and tab. V.15; *CNF*, p. 164, n. 1418 and tab. XVI.24. Careful examination of the coins listed in *CNF* nevertheless shows that they all belong to the same issue. For example, see the published specimens from the collection of the Museo Nazionale del Bargello: *CNF*, p. 35, n. 410 (*croce cuspidata*) = TODERI, VANNEL 2005, tab. 50.129; *CNF*, p. 164, n. 1418 (*croce ancorata*) = TODERI, VANNEL 2005, tab. 71, n. 454.

(45) *CNF*, pp. 164-165, nn. 1419-1422.



acquired both coins at auction in 1990<sup>(46)</sup>. Beyond these two coins, the group among which the coins from the Willanzheim hoard are now preserved thus includes four further Florentine coins that were not part of the acquisitions of 1853, possibly including the coin with the swallow as privy mark and perhaps another that has a buckle with annulets as privy mark (see below).

Typology	Series V 1303-1310	Series VI 1311-1315	Series VII 1315-1325	Series VIII 1326-1332	Series IX 1332-1348
OBVERSE (fleur-de-lis)	Pendants more open with thorn above almost touching side-petals; larger pellets	Pendants with thorn above touching side-petals		Open pendants, almost horizontal, with thorn above touching side-petals	Pendants less open, with thorn above touching side-petals
REVERSE (St John the Baptist)	Forearm more oblique, almost horizontal; cloak larger at lower fringe	Usually annulets for clasp on cloak and knob on ferula; fringes of cloak less precise	Lower fringe of cloak straighter; usually annulets for clasp on cloak and knob on ferula	Lower fringe of cloak beaded; annulets or pellets for clasp on cloak and knob on ferula	Lower fringe of cloak beaded and more curved; annulet for clasp on cloak and pellet for knob on ferula
LETTERING	Letter <b>R</b> with long foot; letter <b>S</b> with normal or bifurcated serifs	Letter <b>S</b> with normal serifs	Letter <b>S</b> usually with bifurcated serifs	Letter <b>S</b> usually with bifurcated serifs	Letter <b>R</b> with shorter foot; letter <b>A</b> smaller at the base; letter <b>S</b> with normal serifs

TABLE 9 - Summary of the stylistic evolution of Florentine gold florins from the second semester of 1303 to 1348 (Bernocchi series V-IX).

*Summary of the stylistic evolution of Florentine gold florins (1260s-1348)*

The principal stylistic changes in the Florentine gold florins over the entire period covered by the group of florins in which the coins of the Willanzheim hoard make up the dominant part, from the introduction of the florins with the saint in the more evolved style in the 1260s until the 1330s, are summarised above (Table 4, until the first semester of 1303; Table 9, from the second semester of 1303 to 1348). For visual representations of the changes in the iconography and epigraphy of the coins over time, see below (Figures 2-3, respectively).

(46) See above, note 6.



FIG. 2 - Evolution of the iconography on Florentine gold florins from before 1290 to the 1330s: the pendants on the side-petals of the fleur-de-lis on the obverse and of the lower fringe of the saint's cloak on the reverse.

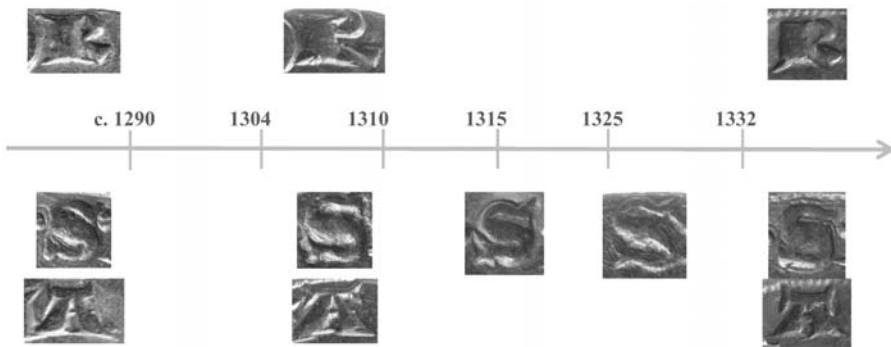


FIG. 3 - Evolution of the epigraphy on Florentine gold florins from before 1290 to the 1330s: letters R, S and A

### 3. Possible deceptive imitations

Before the introduction of the first 'signed' imitations of the Florentine gold florin in 1322<sup>(47)</sup>, other florins had entered into circulation. Some of these coins were epigraphically and typologically distinct from the florin, for example the French *petit royal d'or*, but they were sometimes called flor-

(47) 'Signed' imitations had the same typology as the original – in the case of florins, the large fleur-de-lis on the obverse and the standing image of St John the Baptist on the reverse – but identified the issuing authority and/or place of issue in the inscriptions. The earliest signed imitations of the Florentine gold florin were the gold florins of papal Avignon first struck under Pope John XXII (1316-1334) in the mint at Pont-de-Sorgues in September 1322. See BOMPAIRE 1983; DAY 2004, pp. 184-188; DAY 2013.

ins in contemporary documents because they were struck to the same (or virtually the same) metrological specifications as the Florentine coins<sup>(48)</sup>. Others carried the same epigraphy and typology as the Florentine coins and were presumably intended to pass as such but they were generally struck to an inferior standard of fineness and/or weight; numismatists often refer to these coins as ‘deceptive’ imitations.

Dante Alighieri’s portrait of the counterfeiter Maestro Adamo in the *Inferno* (XXX, 61-90) famously referred to an early episode in the history of deceptive imitations of the Florentine gold florin<sup>(49)</sup>, but many others followed. Villani, for example, believed Emperor Henry VII (1310-1313, emp. 1312) had granted Marchese Teodoro (I) of Montferrat (1305-1338) and a Genoese aristocrat named Obizzino Spinola the right to strike ‘counterfeit’ florins in 1313<sup>(50)</sup>; he further believed that Pope John XXII (1316-1334) promulgated a papal bull against the production of imitation florins in 1324 in direct reference to the activities of Teodoro and Obizzino<sup>(51)</sup>. Henry’s supposed grants of minting rights to Teodoro and Obizzino are otherwise unknown, and the marchesi of Montferrat already possessed a strong claim to the right of coinage going back to the early thirteenth century and needed no further grant or confirmation of minting rights<sup>(52)</sup>; moreover Obizzino had died already in 1315. Villani was nevertheless correct in apprehending a connection between Teodoro and Obizzino, as Teodoro married Obizzino’s daughter Argentina in 1307. He was also correct in his assertion that Pope John had issued a bull against counterfeits in 1324; the bull is evidently lost but the same pope referred to it in a later bull of 1328 in which he specifically identified upper Lombardy, the Marches (*le Marche*, probably in reference to Emilia) and the territory of Genoa as the sources of a recent surge in florin imitations<sup>(53)</sup>. Other evidence strongly suggests that some of the imitations were of the deceptive variety. In 1325, John had written to the government in Florence to request licence

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(48) On the *petit royal*, see LAFaurIE 1951, p. 28, n. 211. This coin had entered into circulation by August 1290. See GAILLARD 1857, *pièces justificatives*, p. 8, doc. 4. On the description as florins of gold coins of the same standard as the florins but with distinct epigraphy and typology, see SPUFFORD 2006.

(49) See also PIERI 1755, p. 43; DAVIDSOHN 1956-1968, III, pp. 251-253; BIGI 1970.

(50) VILLANI 1991, II, pp. 253-254 (x.49).

(51) VILLANI 1991, II, p. 448 (x.278).

(52) MEC 12, p. 166.

(53) SCHÄFER 1911, pp. 138-139. The pope’s reference to upper Lombardy in this bull alludes to the valley of the Po west of Pavia while the Marches probably refers to *Romaniolo* or Emilia-Romagna but not to the modern region of the Marches between the Apennines and the Adriatic.

to continue the production of his own signed imitation florins in view of the dearth of Florentine florins on the market and the proliferation of false florins emanating from north-west Italy (“*partibus Pedismontis*”) that closely imitated the Florentine coins but were deficient in terms of weight and fineness (“*sed tam in pondere quam auri puritate ac bonitate peccantem*”) (54). Villani’s accounts of events that occurred during his adult life are often very reliable, but not always, and in this particular instance, his account almost certainly was not a contemporary one. He wrote most of his chronicle in the 1340s, by which time his memories on some matters might have become imprecise. In this case, he might have conflated the substance of the bull with what he knew about the signed imitations of Marchese Teodoro and the presumably unsigned, deceptive imitations of Obizzino, which Florentine authorities were certainly aware of by 1318 (55).

In that year, the authorities limited the charge for minting costs that the masters of the mint were allowed levy on gold delivered to the mint for coining to eighteen *denari* of gold per ounce (*uncia*); this suggests that mint administrators thenceforth returned 951/10 florins on every pound (*libra*) consigned to the mint (56). The new charge amounted to less than one per cent on consigned gold but was appreciably higher than the charge established nearly a decade later specifically to curtail counterfeiting (57). The language of the 1318 provision, moreover, suggests that the charge had been even greater beforehand and might have encouraged an upsurge in the production of deceptive imitations, perhaps even reasonably good-quality ones, to compete against the more expensive official issues of the Florentine mint. Another provision from later in the same year indeed attests to the many false gold florins (“*plures floreni auri falsi*”) on the local market at that time and for some time beforehand (“*ad presens et etiam clapso*”); in response to the upsurge in deceptive imitations, authorities imposed an additional 500-*lire* penalty for each infraction on anyone implicated in counterfeiting (58). In 1320, Florentine authorities introduced further measures against the manufacture and circula-

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(54) MOLLAT 1908, pp. 260-261.

(55) Papal accounts suggest that Piedmontese imitations of the Florentine gold florin (*de cunio Pedismontis*) had entered into circulation already by November 1322, just two months after the introduction of the first papal florins. See DAY 2004, p. 199; MEC 12, pp. 169-170. The appearance of the Spinola florins is attested already in Florentine sources in 1321. See above.

(56) ASF, *Provisioni, Regesti*, 15, fol. 145r (1317 Mar. 9, *stile fiorentino*); BERNOCCHI 1976, p. 49. The florin was struck at eight coins to the Florentine *uncia* or ninety-six coins to the Florentine *libra*.

(57) See below, pp. 129-130.

(58) ASF, *Provisioni, Regesti*, 15, fol. 216v (1318 Aug. 11).

tion of counterfeit coinage in the city and its territory; they granted the masters of the mint licence to offer bounties to anyone assisting in the apprehension of individuals involved in counterfeiting and obliged moneyers and workers in the mint to post sureties of 300 gold florins before assuming their positions<sup>(59)</sup>. Towards the end of 1321, authorities forbade the possession and/or use of gold florins or ducats that had been clipped, gilded or re-struck; they also outlawed the florins associated or identified with Obizzino Spinola of Genoa and other florins with the image of St John the Baptist and the fleur-de-lis that were struck outside the mint of Florence<sup>(60)</sup>.

There are other indications, too, that the Florentine gold florin was coming under increasing pressure from counterfeiters in the 1320s. Towards the end of 1324, Florentines authorities reformed the city's assay office to regulate the standard of their gold coins more closely<sup>(61)</sup>. In 1327, specifically to discourage the counterfeiting of gold florins, Florentine authorities sanctioned the return of ninety-five florins and eight *soldi* of gold on every *uncia* of pure gold consigned to the mint<sup>(62)</sup>, which amounted to a reduction in minting charges of nearly a third<sup>(63)</sup>. The effects of the measures taken by Florentine authorities to combat counterfeiting in the 1320s are unclear but the florins of Obizzino Spinola might have continued to turn up on Florentine markets even as late as 1332, that is if a reference to 'Genoese florins' ("*florenos ianuenses*") in Florentine mint documents alluded to Obizzino's coins<sup>(64)</sup>.

(59) *LdZ*, pp. 28-29.

(60) ASF, *Provviszioni, Regesti*, 18, fol. 43r (1321 Dec. 18); BERNOCCHI 1976, p. 49. See also, in reference to the same provision, VETTORI 1738, pp. 103-104, 201; OLIVIERI 1860, p. 62. Three months after that, in March 1322, the bounties that Florentine authorities offered for assistance in the apprehension of counterfeiters yielded practical results when two moneyers in the mint, Meuccio di Benincasa and Manettino di Cione, claimed their bounties for the seizure of two counterfeiters of Florentine petty coins, Simone Guiducci de Cortona and Tuccio Neri de Cetica, the former of whom was condemned to the amputation of a hand and the latter to death by fire. See ASF, *Provviszioni, Regesti*, 18, fol. 73v (1321 Mar. 12, *stile Fiorentino*).

(61) ASF, *Mercanzia*, 3, fols. 65r-68r (1324 Dec. 6); *Provviszioni, Regesti*, 21, fols. 66r-68r (1324 Dec. 6). The office of the assay is attested from 1294. See Pagnini della Ventura 1775, pp. 425-428, doc. 1. In the fourteenth century, one of the functions of the office was to verify the contents of sealed satchels of florins, called "*fiorini di suggello*", to facilitate large transactions; in effect, the *fiorino di suggello* was a money of account based on a bag that contained the equivalent in value to a specific number of florins. On the *fiorino di suggello*, see TARGIONI TOZZETTI 1775; BERNOCCHI 1976, pp. 274-288; GOLDTHWAITE 1994, pp. 31-33, 52-54; MANDICH 1994, pp. 138-140, 145-156. On the assay office in Florence in the early fifteenth century, see BECK 1978.

(62) ASF, *Provviszioni, Regesti*, 23, fols. 93r-97r.

(63) BERNOCCHI 1976, p. 40.

(64) *LdZ*, p. 53 (1332 Oct. 2). In this document, Florentine authorities compared the

In any case, the counterfeiting of the famous gold florin of Florence is well documented long before the introduction of the first signed imitations in 1322, but the phenomenon still awaits detailed investigation. The publication of the coins from the Willanzheim hoard that the SMM acquired in 1853 provides an opportunity to make a more substantial contribution to the study of florins struck outside the mint of Florence that nevertheless carry the same types and legends as the Florentine coins. Inconsistencies between the stylistic affinities of certain coins and their proposed chronologies indeed permits the identification, however provisional, of deceptive imitations, while also making it possible to suggest corrections to the conventional chronology and to date coins with privy marks that are not listed at all in the *Libro*. The rest of this section discusses in turn five florins from the Willanzheim hoard about which considerations of style raise some questions and, at least in three cases, suggest that the coins are deceptive imitations.

### 3a. *Cat. 56 - Privy mark: gear-wheel (buciola)*

One of the florins from the Willanzheim hoard has a privy mark that looks like a gear-wheel, sprocket-wheel or perhaps axle-box. The *Libro della Zecca* describes this mark as a *buciola* or *buccola* among those of the unknown mint-masters and the accompanying marginal illustration perfectly matches the mark on this coin<sup>(65)</sup>. None of the hoards closed up to about 1290 included any florins with this privy mark; this suggests that the coins with this mark came into circulation only after 1290<sup>(66)</sup>.

The classification of florins with this privy mark thus seems straightforward, but some of the stylistic features on coins with this mark differ significantly from those on other coins of the period from about 1290 to 1300;

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many defective florins produced in the Florentine mint with Genoese florins. They blamed the defective florins on the workmanship of Benincasa Lapi, the mint's die-sinker, who was nearly blind ("*propter senectutem*"), and appointed Dato Iunte to work alongside Benincasa. See *LdZ*, p. 58 (1333 May 31/June 1).

(65) Following ORSINI 1760, p. 7, both the *CNI* (XII, p. 95, n. 633) and the *CNF* (p. 23, n. 260) describe this privy mark as a *guada* ('weld' or 'wood', which were plants used as sources of dyes), but Orsini had misread the term in the relevant entry in the *Libro della Zecca*; Fantappiè provided the correct reading in his modern transcription of the *Libro* (*LdZ*, p. 9). For a full discussion of the problem, see DE BENETTI 2015, pp. 105-107.

(66) This is based on the closing dates of Aleppo and Acre Harbour hoards, both of which were removed from circulation around May 1291 but closed earlier in the sense that the coins in the hoard were very probably struck no later than the first semester of 1290 (1 May-31 Oct.); the viale Montegrappa hoard of Pavia was also closed around 1290. On the dating of the Aleppo and Acre Harbour hoards, see DAY, *forthcoming*.

this raises questions about the classification of these coins. Comparison of the florin with the *buciola* as privy mark with that of the second semester of 1300 with the pilgrim's staff as privy mark highlights the inconsistencies in style between the two coins.



Pilgrim's staff (*bordonis*)  
2nd semester of 1300  
(Willanzheim hoard, Cat. 18)

Gear-wheel (*buciola*) after 1310  
(Willanzheim hoard, Cat. 56)

FIG. 4 - Comparison of a Florentine gold florin of the second semester of 1300 with a coin that carries a gear-wheel as privy mark.

In terms of style, the florin from the Willanzheim hoard with the gear-wheel as privy mark is rougher than other coins datable to the period from about 1290 and 1303; some of the details on the coin, moreover, differ significantly from supposedly contemporaneous coins. On the obverse, the bottom of the fleur-de-lis is wider and the curved line that joins the two lower extremities differs in terms of shape and length. On the reverse, the figure of the saint shows less detail, most conspicuously in the rendering of the face and hair.

It is also interesting to note that the weight of the florin with the *buciola* as privy mark, g 3.44, is slightly lower than the official standard but almost perfectly consistent with that of the specimen described and illustrated in the *CNI*<sup>(67)</sup>. The irregularities of these florins in terms of style and weight raise

(67) *CNI* XII, p. 95, n. 633 (tab. XVI, 27): g 3.44. The coin from the Willanzheim hoard was struck using the same dies as the *CNI* example.

questions about their attribution to the mint of Florence and allow the possibility that they might have been the product of unofficial minting. If these coins were contemporary forgeries, it remains unclear whether the privy mark used on them was based on one that was used on Florentine coins and described in the *Libro della Zecca* or whether the description of the mark in the *Libro* was based on one that was used on deceptive imitations. The question clearly requires further investigation, particularly with respect to style and weight, based on a larger sample, but it is worth adding that the knob on the saint's ferula on this coin takes the form of an annulet, like many of the coins in Bernocchi's series VI, and this particular characteristic is even more pronounced on other examples of florins with the same privy mark. Considered together, the stylistic features of this coin suggest that it was struck after 1310. Finally, the list of privy marks on the coins from the Willanzheim hoard includes a description of one of 'a jagged wheel' (*ein gezacktes Rad*) that matches the gear-wheel and leaves little doubt that a coin with this mark appertained to the hoard.

3b. *Cat. 57 - Privy mark: three oval pellets or bezants in trefoil*

Another florin from the Willanzheim hoard has a privy mark of three oval pellets joined together in a stemless trefoil, preceded by a pellet just after the final letter of the reverse legend. The *Libro della Zecca* lists three different marks from the period of the unknown mint-masters before 1303 that may be interpreted as corresponding this mark, but none of them matches this mark precisely<sup>(68)</sup>. The Logge de' banchi hoard of Pisa includes florins with the saint in the archaic style that have three round pellets joined together triangularly as a privy mark, but these coins are stylistically distinct<sup>(69)</sup>. There are several privy marks on Florentine gold florins that are not listed in the *Libro della Zecca*, especially during the first fifty years after the introduction of the florin, but the lettering and style of this coin differs in many respects from standard issues of the Florentine mint. Perhaps the salient characteristic is the coin's rough style, which is especially striking on the reverse in the representation of the saint (see below, Figure 5).

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(68) The *Libro della Zecca* describes one of the three marks as having three pellets (*trium punctorum*), and the other two as having trefoils (*trium foliorum*, *trifogli*). See *LdZ*, pp. 2, 3, 9. For further discussion of these privy marks, see also DE BENETTI 2015, pp. 88, 89, 92.

(69) LENZI 1978; *CNF*, pp. 10-11, nn. 82-84.





Veges (wine-cask)  
1st semester of 1314  
(Willanzheim hoard, Cat. 38)

Three oval pellets in trefoil  
unlisted in the *LdZ*  
(Willanzheim hoard, Cat. 57)

FIG. 5 - Comparison of a Florentine gold florin of the first semester of 1314 with the coin that has three oval pellets in trefoil as privy mark, not listed in the *Libro della Zecca*.

There are also differences in some of the details of the fleur-de-lis on the coin with the three oval pellets in trefoil. The positioning of the two pellets on the stamens is more towards the anther on the coin with the three oval pellets, for example, but lower down on the stamens on standard issues, and there seems to be less detail in the reticulated areas at the bottom of the flower and on the petals. The lettering also shows differences, particularly in the F and I on the obverse. The punches used in the preparation of the dies for the florin with the three oval pellets clearly differed from those normally used in the Florentine mint. The recorded weight of this coin, g 3.43, is also lower than the official standard of g 3.53. These considerations, taken together, suggest that this florin is the product of unofficial minting. Some of the stylistic details on the coin are nevertheless helpful in narrowing down the period in which it was struck. Both the clasp on the saint's cloak and the knob on the saint's ferula are formed by annulets, which are characteristics that appear only on florins struck after 1310. Another useful detail is the pellet between the final letter of the reverse legend and the privy mark, which characterises several of the issues of gold florins from the first semester of 1309 to the second semester of 1313<sup>(70)</sup>. This suggests that the *terminus post quem* for the example with the three oval pellets is 1310. The list of privy marks on the florins that the SMM acquired in 1853 includes a description of one as 'star of the spheres' (*ein Stern auf drei Kugeln*) that matches the mark on this coin and thus confirms that it belongs to the hoard.

(70) The reverse inscriptions on Florentine gold florins of the first semester of 1309, the second semester of 1310, the second semester of 1311, the second semester of 1312 and both semesters of 1313 all have a pellet after the B.

3c. *Cat. 58 - Privy mark: two leaves*

One of the florins from the Willanzheim hoard has a privy mark that is not listed in the *Libro della Zecca* and is recorded on only one other specimen<sup>(71)</sup>. It consists of two parallel vertical stems that rise from a small base and open into two leaves that curl outwardly towards their zeniths and then descend alongside the stems (see below, Figure 6).



Two leaves, unlisted in the *LdZ*  
(Willanzheim hoard, *Cat. 58*)

FIG. 6 - Unlisted privy mark of two leaves, 1311-1325.

The stylistic features of this coin suggest that it was struck during the period from 1311 to 1325. The clasp on the saint's cloak and the knob on his ferula both take the form of an annulet, which appears only on florins struck after 1310, while the lower part of the cloak is fringed with relatively long strokes, as on florins struck until 1326 when the fringing became shorter and more beaded in appearance. Stylistic differences between this coin and Florentine issues of the same period raise doubts as to whether it was a product of the mint in Florence. This privy mark probably corresponds to the one described in the list of marks on the florins that the SMM acquired from the Willanzheim hoard as 'an unstrung lyre' ("*eine unbeseitete Leyer*"), which would confirm the coin's provenance from the hoard.

3d. *Cat. 59 - Privy mark: dove with olive branch* (*colomba con ramo di olivo*)

The florin from the Willanzheim hoard that has a dove with olive branch as privy mark, which was used on gold coins struck in the mint of Florence during the first semester of 1319<sup>(72)</sup>, differs appreciably in terms

(71) The other specimen is recorded in the *CNF* (p. 47, n. 541) with the privy mark described as "*segno - 6*", though the illustration of the mark in the *CNF* differs slightly from that on the coin (cfr. *CNF*, tav. VII.26). Bernocchi dated the issue only very broadly to 1252-1421 (series XX).

(72) *CNF*, p. 134, nn. 1237-1241.

of style from other examples ostensibly of the same issue. The differences are especially pronounced on the reverse in the upper part of the figure of the saint, which shows a rougher style in the specimen from the hoard and a significant loss of detail (see below, Figure 7).



Dove with olive branch (*colomba con ramo di olivo*)

1st semester of 1319  
(Private collection)

After 1st semester of 1319  
(Willanzheim hoard, Cat. 59)

FIG. 7 - Comparison of Florentine gold florins that have a dove with olive branch as privy mark.

In terms of the lettering, there are also significant differences. On the reverse of the coin from the Willanzheim hoard, for example, the letter **S** does not show the bifurcate serifs that are typical of the florins of this period while the pellets that punctuate the legend take the form of annulets, which is uncharacteristic of these coins. Among the specimens with the same privy mark that it has been possible to examine<sup>(73)</sup>, most of them show stylistic features that are consistent with other Florentine florins of the period; only the example from the Willanzheim hoard and one other specimen from a private collection show anomalous characteristics<sup>(74)</sup>. The workmanship that went into the production these two coins clearly differs from that of the other examples. The stylistic inconsistencies and recorded weights of only g 3.44 for the example from the hoard and g 3.45 for the other one raise questions about the circumstances of their production. The list of privy marks on the coins from the Willanzheim hoard that the SMM acquired in 1853 includes a description of one as ‘a dove with a branch’ (*“eine Taube mit einem Zweig”*) that matches the mark on the coin, thus confirming that it came from the hoard.

(73) As the basis for the comparison with the florin from the Willanzheim hoard, the authors have had the opportunity to examine seven specimens that have a dove with olive branch as privy mark: (1) Kunsthistorisches Museum Wien, Münzkabinett inv. MK26763aα; (2) TODERI, VANNEL 2005, p. 35, n. 388 (tav. 66.388); (3) Museo Civico Archeologico, Bologna, inv. 54312; (4-6) three examples in the collection of Vittorio Emanuele III in the Museo nazionale di Roma; (7) one example in a private collection.

(74) For the example now in private hands, see Künker sale 186 (17 Mar. 2008), lot 7788.

3e. *Cat. 60 - Privy mark: buckle with annulets*

Another privy mark that is not listed in the *Libro della Zecca* but turns up among the florins from the Willanzheim hoard is one of a buckle (*fibbia*) with annulets. This mark, which is difficult to read on the specimen from the hoard, is also attested on one coin listed in both the *CNI* and the *CNF*; it consists of a buckle surrounded by four annulets, one at each side plus an additional one located at the centre<sup>(75)</sup>. The coin from the hoard is double-struck or perhaps over-struck (see below, Figure 8). A further specimen with a clearer rendering of the mark appeared at auction in 2008<sup>(76)</sup>.



Buckle with annulets, unlisted in the *LdZ*

(Willanzheim hoard, *Cat. 60*)  
Double-struck or over-struck

(NAC 47, 3 June 2008, lot 125)  
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FIG. 8 - Unlisted privy mark of buckle with annulets.

The *Libro della Zecca* lists a buckle without annulets (*fibbia con ardiglione*) as the privy mark used to denote gold florins struck during the first semester of 1338<sup>(77)</sup>. Coins that have this unembellished buckle and the buckle with annulets as privy marks both display characteristics that are typical of florins struck during the period from 1332 to 1348. These include short, bead-like strokes for the fringing at the bottom of the saint's cloak and an annulet for the clasp on the saint's cloak but a pellet or bezant for the knob on the saint's ferula. Coins with the two different marks nevertheless show distinct stylistic differences, with the contrasts once again most obvious in the rendering of the upper part of the figure of the saint (see below, Figure 9).

(75) For the other specimen, which belongs to the collection of Vittorio Emanuele III in the Museo Nazionale di Roma, see *CNI*XII, p. 102, n. 715; *CNF*, p. 38, n. 444 (tav. V.30), the latter of which describes the privy mark as a "*segno circondato da cerchietti*" (symbol surrounded by annulets). Bernocchi dated this coin to 1348-1367 (series X) on the basis of style.

(76) NAC sale 47 (3 June 2008), lot 125, with a recorded weight of g 3.51. The NAC specimen was struck from the same pair of dies as the example from the Willanzheim hoard.

(77) *CNI* XII, p. 39, n. 249; *CNF*, pp. 171-172, nn. 1462-1465.



Buckle with prong or tongue  
(*fibbia con ardiglione*)  
1st semester of 1338  
(private collection)



Buckle with annulets  
unlisted in the *Libro della Zecca*  
after the 1st semester of 1338 (?)  
(Willanzheim hoard, Cat. 60)

FIG. 9 - Comparison of Florentine gold florins that have a buckle with prong (*fibbia con ardiglione*) as privy mark with those that have a buckle with annulets.

The contrasting styles of the florins with these marks and the fact that the mark with the annulets is unlisted in the *Libro della Zecca* raises the suspicion that the coin with the annulets was a product of unofficial minting modelled after coins with the plain buckle as privy mark, which were struck in the first semester of 1338. Further research on the coins with these privy marks is clearly needed, but if the provisional dating put forward here is correct, the coin that has the buckle with annulets as privy mark would be the most recent in the hoard, with a *terminus post quem* of 1338. The list of privy marks on the florins from the Willanzheim hoard that the SMM acquired in 1853 nevertheless does not include any description of a mark that matches the one on this coin. This raises questions about the provenance of the coin and allows the possibility that it was one of the intrusions.

Cat.	Privy mark		weight (grams)	Mint	Proposed chronology
	<i>Libro della Zecca</i>	English			
56	<i>Buciola</i> or <i>Buccola</i>	Gear-wheel	3.44	Uncertain	After 1310 (?)
57	Unlisted	Three large pellets	3.43	Uncertain	After 1310
58	Unlisted	Two leaves	3.51	Florence (?)	1311-1325
59	<i>Columba cum ramo di olive in beccho</i>	Dove with olive branch	3.44	Florence (?)	After 1319/I
60	Unlisted	Buckle with annulets	3.49	Uncertain	After 1338/I (?)

TABLE 10 - Privy marks on gold florins from the Willanzheim hoard that show stylistic anomalies, with the proposed chronology of the coins.

Florins with the same privy marks as these coins from the Willanzheim hoard that show stylistic anomalies all require further investigation. In particular, compositional analyses are needed to understand whether the coins were produced to the same standard of fineness as the Florentine florins. The mint in Florence struck its florins to highest attainable standard, only marginally below twenty-four carats. The determination of the specific gravity of any suspect coins will be sufficient to confirm or allay any doubts.

#### 4. *Historical background*

The Willanzheim hoard is perhaps best seen in the context of not only other florin hoards that were closed north of the Alps from about 1325 to 1340 but also the activities of German mercenaries in North-Central Italy in the 1320s and 1330s. German soldiers had played important roles in military conflicts in Tuscany at least from the battle of Montaperti in 1260, in which the contingent of 800 German knights that King Manfred of Sicily (1258-1266) sent to support Sienese troops against a larger Florentine force ultimately proved decisive, but armies on both sides consisted predominantly of civic infantry. At the battle of Campaldino in 1289, the 400 mercenaries that fought on the side of Florence made up only a quarter of the Florentine cavalry while the Aretine cavalry evidently consisted largely if not entirely of Tuscan Ghibellines. In the thirteenth century, in other words, states engaged foreign mercenaries principally to support their own troops. By the time of the battle of Montecatini in 1315, however, the nature of warfare had changed. Foreign mercenaries no longer played a mere support role behind citizen levies but were now among the main combatants, typically making up the second rank of cavalry behind a first rank of citizen knights<sup>(78)</sup>.

In the Florentine army, German knights made up a significant component. On 5 May 1325 when the news reached Florence that they city had lost Pistoia to Castruccio Castracani of Lucca, the German commander Urlimbach was attending a banquet in the Florentine church of San Pier Scheraggio to celebrate his newly acquired knighthood; the force that the Florentines assembled a month later to recover Pistoia from the Lucchese included 200 elite German soldiers, "*molto buona gente e isprovata*", out of some 1500 foreign mercenaries<sup>(79)</sup>. Castruccio likewise depended heavily on German

(78) GREEN 1986, pp. 69-70.

(79) VILLANI 1991, II, pp. 458-459 (x.294), pp. 463-464 (x.300); GREEN 1986, pp. 161-162.

mercenaries. For the battle of Altopascio in September 1325, he engaged a force of 800 German knights under the command of Azzo Visconti of Milan to fight alongside another large contingent that included German and other foreign knights under the leadership of Passerino Bonacolsi of Mantua. To secure Azzo's service, Castruccio not only paid him 10,000 florins up front but also promised him a further 6000 florins, subsequently obtaining the necessary funds from a consortium of Lucca's leading merchant-bankers<sup>(80)</sup>. Castruccio's payments to Azzo offer merely a fleeting glimpse into the financial implications of waging war with mercenary armies; to obtain a fuller picture, it is necessary to consider the evidence from somewhat later conflicts in which the financial arrangements are illuminated by richer documentation. During the Veneto-Scaligeri War of 1336-1339, for example, the Florentine government paid extensive sums to German mercenaries. When the war broke out between Venice and the Della Scala or Scaligeri lords of Verona, Florence threw its support behind Venice with the objective of subjugating Lucca, which was then governed by Guglielmo Canacci degli Scannabecchi of Bologna on behalf of the city's Veronese lords, Mastino and Alberto della Scala.

On 21 June 1336, representatives of Florence and Venice agreed to a treaty that obliged the two cities to recruit the necessary troops to wage war against the Scaligeri in the territories of Treviso and Verona and to divide the costs of war equally between them. The Florentines established the so-called *Dieci di Vinegia*, a special committee of merchants from the larger merchant-banking companies that was charged with the task of raising the funds necessary to prosecute the war, and the government assigned the committee 250,000 gold florins per year from indirect taxes. The diversion of indirect tax revenue in Florence to finance the war effort soon resulted in an annual budget shortfall of more than 100,000 florins, which authorities offset through costly public borrowing. Meanwhile, gold specie flowed northwards from Florence across the Apennines to the Veneto, sometimes in sums as great as 100,000 florins and amounting to more than 600,000 florins in thirty-one and a half months of war, much of it to pay the salaries of German mercenaries that fought on behalf of the Florentine-Venetian alliance. Even these substantial disbursements were sometimes insufficient to meet the demands of the war, compelling the Florentines to seek advances from Venice, including one that amounted to some 60,000 ducats according to one account. By the time that the war ended in January 1339, the Flor-

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(80) VILLANI 1991, II, pp. 470-471 (x.304), pp. 473-474 (x.306); GREEN 1986, pp. 171-173.

entire government had run up debts of more than 450,000 florins and still owed Venice 36,000 ducats<sup>(81)</sup>. To make matters worse, Florentine investments in the alliance with Venice yielded little return after the Venetians negotiated a separate peace with Verona that included no provision for the surrender of Lucca to Florence. With its coffers drained of cash, Florence was unable or unwilling to satisfy even its relatively modest debt to Venice. Consequently, commercial and financial relations between the two cities broke down, even though neither could afford such disruption at a time when their economies were under strain and customary trade networks in Europe were suffering disruption due to the outbreak of the Hundred Years' War and other conflicts. Normal relations between Florence and Venice resumed only in December 1341, after an interruption of some two years, when the Florentine government finally acknowledged an outstanding debt of 33,219 gold florins to the Venetians and agreed to a schedule of repayment<sup>(82)</sup>.

There can be no question that the Florentine-Venetian alliance depended heavily on German mercenary commanders and soldiers. Gerhard von Werdenberg (or perhaps Württemberg; *Gherardo di Viriborgo*) led a Florentine campaign against Veronese controlled Lucca early in the war but died in an ill-conceived assault on the fortress of Cerruglio in September 1336<sup>(83)</sup>. The Swabian commander Werner von Urslingen (*Guarnieri di Urslingen*) had already led his troops into battle against the Tarlati lords of Arezzo on behalf of Florence in 1335 before signing on to fight for the Florentine-Venetian alliance against the Scaligeri in 1338<sup>(84)</sup>. Konrad von Landau (*Conte Lando*), another Swabian, also fought on behalf of Venice along with a German or perhaps Swiss commander named Rainald Frenz or Reinhold von Giver (*Rinaldo Giver detto Malerba*)<sup>(85)</sup>.

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(81) VILLANI 1991, III, pp. 106-111 (xii.50), 184-189 (xii.90). On the treaty, see also PLACENTINUS 1931, pp. 46-47; SIMEONI 1929-1930, pp. 32-33, 62-65, docc. 17-18. On the Venetian advances to the Florence, see MERORES 1915, p. 164. On the huge expansion of the public debt of Florence during the first four decades of the fourteenth century, see BARBADORO 1929, p. 507.

(82) ASF, *Dipl., Riformagioni, Atti Pubblici*, 1341 Dec. 21. The financial crisis that resulted from the war is neatly summarised, mainly from the Venetian perspective, in MUELLER 1997, pp. 130-137.

(83) VILLANI 1991, III, pp. 113-117 (xii.52). Schäfer identified Gherardo di Viriborgo as Gerard von Werdenberg, thus associating him with the eponymous Swiss village near St Gallen in the eastern canton of Graubünden. See SCHÄFER 1911-1940, II, p. 77. Another possibility is that *Viriborgo* referred to Württemberg, though no German mercenary named Gerard (or perhaps Gerald) is otherwise known among the counts of either Werdenberg or Württemberg.

(84) SELZER 2001, pp. 367-368.

(85) On Konrad von Landau, see SELZER 2001, pp. 368-370; on Malerba, see SELZER 2001, p. 365.



At the time of the Veneto-Scaligeri War, ordinary soldiers without a mount earned the equivalent of six or seven florins or ducats per month, horsemen about nine and commanders as much as nineteen<sup>(86)</sup>. Mercenary wages were typically paid through Italian banks, for example the Giussano firm of Piacenza in Milan, the Lippi and Del Bene firms of Florence in Padua, and the Alberti firm of Florence<sup>(87)</sup>. During the more than thirty-one months of the Veneto-Scaligeri War, these wages might have amounted to very substantial sums, even after deductions for expenses, and not taking into account possible profits from plunder. German mercenaries recycled some of their earnings in Italy back into local economies, but they also sent large amounts out of Italy. German commanders, like those from other parts of Europe, often sent money home to invest in property, sometimes using bills of exchange drawn on Italian banks to transfer their funds<sup>(88)</sup>. In the later fourteenth century, a German commander from Ulm relied on the services of the Del Maino banking firm in Milan to mediate one such transfer to the value of 386 Hungarian ducats. Bills of exchange were not the only means by which soldiers sent money north of the Alps, however; on some occasions, they sent funds in specie. Trans-Alpine transfers of mercenary earnings by any means are poorly documented, especially before 1350, but the chronicler Pietro Azario, writing in the 1360s, reported that the count of Landau despatched sacks of coin from Italy to Germany and Hungary on behalf of other German and Hungarian troops<sup>(89)</sup>. These kinds of transfers typically left few traces in the documentary record, but the accounts of one Lucchese banking firm active in Rome in the later fourteenth century show that even merchant-bankers sometimes made arrangements for the overland transfer of coin in leather sacks from Italy to Germany<sup>(90)</sup>.

Some of the florins that Florentine and Lucchese governments paid to German mercenaries during Castruccio Castracani's campaigns in the 1320s very well might have been transported across the Alps in the soldiers' purses; it is even more likely that some of the huge sums sent by the Florentines to the Veneto to pay mercenary wages during the Veneto-Scaligeri War continued their journey northwards. Some of these florins might have ultimately ended up in coin hoards. The Willanzheim hoard is indeed one of several florin hoards that were closed north of the Alps before the middle of the

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(86) SELZER 2001, pp. 235-238.

(87) SELZER 2001, pp. 232-233, 262-264.

(88) CAFFERO 2008, pp. 197-198.

(89) AZARI 1926-1939, p. 153.

(90) ESCH 1975, p. 144.

fourteenth century<sup>(91)</sup>. The origins of the coins that ended up in these hoards are of course ultimately impossible to determine, but their timing and composition allow that they might have derived from the mercenary earnings of German soldiers.

### *Conclusion*

The fifty-six Florentine gold florins from the Willanzheim hoard in the collection of the SMM, including the one that is missing, are preserved among a slightly larger group of sixty-two Florentine coins; one other coin from the hoard, a papal florin of the mint at Pont de Sorgues near Avignon, is preserved separately. Detailed analysis of the coins makes it possible to distinguish the possible intrusions in the group, that is the coins that were not included in the Museum's original acquisitions of coins from the hoard, and to trace the stylistic evolution of the Florentine gold coinage over the circumscribed period covered by the coins from the hoard. The identification of the possible intrusions suggests that the hoard dates from about 1325 rather than 1338/1339, as previously supposed. Considerations of style, when viewed alongside other hoard evidence and the documentary record, not only suggest corrections to the chronology of the Florentine gold coinage but also draw attention to the anomalous characteristics of five of the coins, which raises suspicions that they may be deceptive imitations. Compositional analyses of the suspect florins are needed to confirm or dispel these suspicions.

Documentary records from Florence and elsewhere suggest that there was an upsurge in the production of deceptive imitations of the Florentine gold florin from about 1315. Around the same time, the nature of warfare in North-Central Italy underwent a fundamental change. Italian armies were making substantial use of mercenaries already in the thirteenth century, but the mercenary component became far more significant from about 1315, especially with respect to mounted knights. Many of the mercenaries who fought in North-Central Italy came from north of the Alps, particularly from Germany. These soldiers, whose wages from war were typically measured and presumably paid in gold currency, often sent some of their earnings back home, sometimes by letters of credit or exchange drawn on Italian banks

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(91) In addition to the Willanzheim hoard, the Zalewo hoard from Poland consisted mainly of Florentine gold florins. See JANUSKIEWICZ, PASKIEWICZ, WĘCŁAWSKI 1996, pp. 117-120; KUBIAK 1998, pp. 283-284, n. 850. Other florin hoards closed around 1340 – e.g. Jawor, Limburg an der Lahn, Wachenroth – were more mixed.

but sometimes in specie. In the case of the latter, some of their despatches very well might have gone astray. These elements provide possible context for the Willanzheim hoard, but their finer details and their bearing on the numismatic evidence deserve further attention from historians and numismatists alike. The identification of deceptive imitations of the Florentine gold florin and the role of mercenary activity in the diffusion of the coins northwards across the Alps represent fertile grounds for continued research.

Cat.	Libro della Zecca	Privy mark	Chronology	Acquired 1853		SMM record desc.
				July	Aug.	
<i>Mint of Florence</i>						
1	<i>Stella</i>	6-pointed star	Before c. 1290		X	<i>ein Stern</i>
2	<i>Pesce</i>	Fish	Before c. 1290		X	<i>ein Fisch</i>
3	<i>Torsellus</i>	Bale	Before c. 1290		X	<i>ein Faszen-Bündel</i>
4	<i>Martellus</i>	Hammer	Before c. 1290		X	<i>ein Hammer</i>
5	unlisted	Voided cross	Before c. 1290		X	<i>ein Kreuz</i>
6	<i>Caroccius</i>	Wagon-wheel	Before c. 1290		X	<i>ein Rad</i>
7	<i>Clavis</i>	Key	Before c. 1290		X	<i>ein Schlüssel</i>
8	<i>Cesorie</i>	Shears	Before c. 1290			
9	<i>Mitra</i>	Mitre	c. 1290-1299		X	<i>eine Dogen hut</i>
10	<i>Arcus</i>	Bow	c. 1290-1299		X	<i>ein Bogen</i>
11	<i>Toricella</i>	Tower	c. 1290-1299		X	<i>ein Thurm mit Zinnen</i>
12	<i>Panocche panichi</i>	Panic-grass or panicum cob	c. 1290-1299			
13	<i>Sexstarum</i>	Compass	c. 1290-1299		X	<i>ein Zirkel</i>
14	<i>Pons</i>	Bridge	c. 1290-1299		X	<i>ein gezacktes Doppelrad</i>
15	<i>Bottonis</i>	Button	c. 1290-1299		X	<i>ein Zirkel mit einem Halbkreise</i>
16	<i>Cappellus</i>	Hat	c. 1290-1299	X		<i>ein Hut</i>
17	<i>Forficum</i>	Scissors	c. 1290-1299			
18	<i>Bordonis</i>	Pilgrim-staff	1300/II			
19	<i>Barca</i>	Boat	1301-1303	X		<i>ein Schiffchen</i>
20	<i>Ampulla cum beccuccio</i>	Cruet	1301-1303		X	<i>ein Gefäß mit einem Henkel</i>
21	<i>Palma</i>	Palm	1304/I			

22	<i>Ancudinis</i>	Anvil	1304/II			
23	<i>Segolum</i>	Sickle	1305/I		X	<i>Eine sichel</i>
24	<i>Schala</i>	Ladder	1306/I			
25	<i>Pera</i>	Pear	1306/II		X	<i>eine abwärtsstehende zweiblattrige Frucht</i>
26	<i>Pettinis</i>	Comb	1307/II		X	<i>ein Faszen-bündel</i>
27	<i>Folea ficus</i>	Fig leaf	1308/I			
28	<i>Dua Clovia incrocchiata</i>	Crossed nails	1308/II		X	<i>zwei kreuzweis gelegte Nagel</i>
29	<i>Clipeum</i>	Shield	1309/I		X	<i>ein Schildchen</i>
30	<i>Duas pannocchias de grano in uno gambo</i>	Two cobs of grain on one stalk	1309/II		X	<i>ein Zweig mit zwei Ausläufern</i>
31	<i>Mons</i>	Mount	1310/II		X	<i>ein aus fünf Kugeln geformter Berg</i>
32	<i>Cornua cervi</i>	Deer antlers with annulet	1311/I		X	<i>Hirschgeweih</i>
33	<i>Porticus</i>	Archway	1311/II			
34	<i>Grillus</i>	Cricket	1311-1315 (1312/I ?)		X	<i>ein Heuschrecke</i>
35	<i>Chiavistellus</i>	Latch	1312/II			
36	<i>Caldaria</i>	Cauldron	1313/I			
37	<i>Staffa</i>	Stirrup	1313/II			
38	<i>Veges</i>	Barrel or keg	1314/I		X	<i>ein Fässchen</i>
39	<i>Morsis</i>	Clamp	1316/I			
40	<i>Fiaschus</i>	Flask	1317/I			
41	<i>Luna et stella</i>	Crescent moon with star	1317/II		X	<i>unter einem Sterne der Mond</i>
42	<i>Acciaiulis</i>	Flint striker	1318/I		X	<i>ein B</i>
43	<i>Solis</i>	Sun with face	1318/II		X	<i>ein strahlendes Gesicht (Sonne) auf dem</i>
44	<i>Gallus</i>	Rooster	1320/I			
45	<i>Duas spate incrocchiate</i>	Crossed swords	1320/II		X	<i>zwei ebenso gestellte Schwerter</i>
46	<i>Cesorie</i>	Scissors	1321/I			

47	<i>Testa leonis</i>	Lion's head	1321/II		X	<i>ein Löwenkopf im Vließ</i>
48	<i>Rosa in uno gambo cum duobus foliis</i>	Rose with two leaves and stem	1322/I		X	<i>eine aufwärtsstehende zweiblattrige Blume</i>
49	<i>Mons cum folia floris super mont</i>	Mount with fig leaf	1322/II			
50	<i>Coppa cum gambo aperto</i>	Cup with stem	1323/II			
51	<i>Spinosus</i>	Hedgehog	1324/I			
52	<i>Accetta</i>	Axe or hatchet	1324/II		X	<i>ein Beil</i>
53	<i>Leonicinus sedens</i>	Seated lion	1325/II			
54	Unlisted	Trefoliolate cross	1315-1325		X	<i>ein Kreuz mit kreuzchen an den Balkenenden</i>
55*	<i>Arundinis</i>	Swallow	1336/II			
<b><i>Florence (?) or unknown mints</i></b>						
56	<i>Buciola</i>	Gear-wheel	After 1310 (?)		X	<i>ein gezacktes Rad</i>
57	Unlisted	Three large pellets	After 1310		X	<i>ein Stern auf drei Kugeln</i>
58	Unlisted	Two leaves	1311-1325		X	<i>eine unbeisetete Leyer</i>
59	<i>Columba cum ramo di olive in beccba</i>	Dove with olive branch	After 1319/I	X		<i>eine Taube, mit eine Zweige</i>
60*	Unlisted	Buckle with annulets	After 1338/I (?)			
<b><i>Mint of Pont de Sorgues (Avignon)</i></b>						
61	(Papal florin)	Tiara	From 1322		X	<i>eine Mitra (Tiara)</i>

\* Probable intrusions.

TABLE 11A - Comparison between the Munich component of Willanzheim hoard and the SMM record of the privy marks represented in the original acquisitions of coins from the Willanzheim hoard in July and August 1853.

<b>SMM record</b>	<b>English translation</b>	<b>LdZ</b>	<b>CNF</b>	<b>Chronology</b>
<i>eine Krone</i>	Crown	–	p. 19 n. 201 ( <i>corona</i> )	c. 1290-1299
<i>die Sonne</i>	Sun	–	–	–
<i>eine Geißel</i>	Flagellum or whip	p. 21	p. 124 nn. 1154-1156 ( <i>sferza</i> )	1315/II
<i>ein grosser fünf strahl. Stern</i>	Large 5-pointed star	–	–	–

TABLE 11B - Privy marks specifically described in the SMM record of acquisitions of coins from the Willanzheim hoard in August 1853 but not attested among the group of coins that include the acquisitions from the hoard.

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Willanzheim bei Kitzingen (Franconia, Bavaria) 1853 (Staatliche Münzsammlung München)<sup>1</sup>MINT OF FLORENCE, all gold florins (*fiorini stretti*), 1252-1421 (without provenance)

Cat.	Inscriptions	Signum (Latin)	Segno (Italian)	Beizeichen (German)	Marque (French)	Privy mark (English)	Orsini/ Ldz	Joseph (Bretz.)	CNI XII (Firenze)	Bern. II (CNF)	Bargello	Date	Weight (grams)
1	D. +FLOR ENTIA R. -SIOHA NNESB	Stella	Stella a sei raggi	Sechs- strahliger Stern	Étoile à six branches	6-pointed Star	cf. 6.53 / cf. 8	-	92.610	13-14.122- 129 (I.27, cf. IV.16)	5.32 (42.32)	1252-1303 (before c. 1290)	3,479
2	D. +FLOR ENTIA R. -SIOHA NNESB	Pesce	Pesce	Fisch	Poisson	Fish	6.55 / 8	23	95.643 (XVI.35)	26.295-299 (III.30)	11.95 (47.95)	1252-1303 (before c. 1290)	3,470
3	D. +FLOR ENTIA R. -SIOHA NNESB	Torsellus	Torsello o balla	Ballen	Balle	Balle	6.57 / 8	-	97.655 (XVI.46)	16.162-165 (II.12); 29.338 (IV.20)	6.43-44 (43.43-44)	1252-1303 (before c. 1290)	3,461
4	D. +FLOR ENTIA R. -SIOHA NNES B	Martellus	Martello	Hammer	Marteau	Hammer	4.19 / 4	-	95.634 (XVII.28)	24.265-268 (III.20)	9-10.79-80 (46.80-81)	1252-1303 (before c. 1290)	3,507
5	D. +FLOR ENTIA R. -SIOHA NNES B	Not listed in Ldz	Croce vuota con quattro punti	Leeres Kreuz mit vier punkte	Vide croix avec quatre globules	Voided cross with four pellets	-	47	-	19-20.204- 211 (II.30)	8.62 (45.62)	1252-1303 (before c. 1290)	3,445
6	D. +FLOR ENTIA R. -SIOHA NNESB	Caroccius	Ruota di carro	Wagenrad	Roue de wagon	Wagon- wheel	6.49 / 7	192	-	18.181-183 (II.18)	-	1252-1303 (before c. 1290)	3,488
7	D. +FLOR EHTIA R. -SIOHA NNESB	Clavis	Chiave	Schlüssel	Clef	Key	5.37 / 6	25	93.620 (XVI.18)	18.188-191 (II.21)	7.51-52 (43.51-52)	1252-1303 (before c. 1290)	3,508

<sup>1</sup> For the references to standard works, the format is page number(s) followed by a full-stop and then the coin number(s). The references in curved brackets are to table or plate number(s) followed by a full-stop and then the coin or image number(s).

8	D. +FLOR ENTIA R. S'IOHA NNES'B	Cesorie	Cesole	Kneifzange	Cisailles	Shears	7.58 / 8	45	93.619 (XVI.17)	18.185-187 (II.20)	7.50, 40.436 (44.50, before c. 70.436)	1252-1303 (c. 1290-1299)	3,503
9	D. +FLOR ENTIA R. S'IOHA NNES'B	Mitra	Mitria	Bischofs- mütze	Mitre	Mitre	3.15 / 3	37	95.638 (XVI.31)	24.274- 276 / (III.23)	10.88 (47.88), 16.150 (53.150)	1252-1303 (c. 1290-1299)	3,496
10	D. +FLOR ENTIA R. S'IOHA NNES'B	Arcus	Arco	Bogen	Arc	Bow	4.22 / 4	20	93.614 (XVI.12)	16.155- 160 (II.10)	6.41-42 (43.41-42)	1252-1303 (c. 1290-1299)	3,353
11	D. +FLOR ENTIA R. S'IOHA NNES'B	Toricella	Toricella	Turm	Tour	Tower	4.25 / 5	34	96.650 (XVI.41)	29.335- 337 (IV.19)	12.112-113 (49.112- 113)	1252-1303 (c. 1290-1299)	3,413
12	D. +FLOR ENTIA R. S IOHA NNES'B	Panocche panichi	Pannocchia di panico	Rispen- hirsen oder Hirsen	Panic	Panic-grass or panicum cob	9.71 / 10	55	95.642 (XVI.34)	25.287- 293 (III.28)	10-11.91-93 (47.91-93)	1252-1303 (c. 1290-1299)	3,511
13	D. +FLOR ENTIA R. S'IOHA NNES'B	Sexstarum	Compasso	Kompaß	Compass	Compass	3.17 / 4	38	102.714	18.193 (II.23), 31- 32.369- 372 (V.2)	7.53 (44.53), 13.119 (49.119)	1252-1303 (c. 1290-1299)	3,500
14	D. +FLOR ENTIA R. S'IOHA NNES'B	Pons	Ponte (merlato)	Brücke	Pont	Bridge	4.24 / 5	30	96.645 (XVI.37)	26.304- 305 (IV.3)	11.98-99 (48.98-99)	1252-1303 (c. 1290-1299)	3,477
15	D. +FLOR EHTIA R. SOHA NNESB	Bottomis	Bottomone	Knopf	Bouton	Button	5.38 / 6	35	93.616 (XVI.14)	17.170-173 (II.15)	10.88 (43.48)	1252-1303 (c. 1290-1299)	3,503
16	D. +FLOR ENTIA R. S'IOHA NNES'B	Cappellus	Cappello	Hut	Chapelle	Hat	7.63 / 9	22	93.617 (XVI.15)	17.177-180 (II.17)	7.48-49 (43.47, 44.49)	1252-1303 (c. 1290-1299)	3,493
17	D. +FLOR ENTIA R. S'IOHA NNES'B	Forbice	Forbice	Schaf- scheere	Ciseaux	Scissors	6.47 / 7	41	94.629 (XVI.24)	22.243-245 (III.12)	9.72 (45.72)	1252-1303 (c. 1290-1299)	3,502

18	D. †FLOR EIITIA R. †IOHA NNES <sup>2</sup> B	Bordonis	Bordone	Pilgerstab	Bourdon	Pilgrim- staff	4.20 / 4	65	8.20.22 (XIII.2)	923-931 (XIII.2)	26.280-282 (58.280- 282)	1300/II	3,541
19	D. †FLOR ENTIA R. †IOHA NNES <sup>2</sup> B	Barca	Barca	Boot	Barque	Boat	4.26 / 5	29	99.683 (XVII.9) <sup>2</sup>	17.166 (II.13), 361.363 (IV.29)	6.45 (43.45) (1301-1303)	1252-1303 (1301-1303)	3,463
20	D. †FLOR ENTIA R. †IOHA NNES <sup>2</sup> B	Ampulla cum Beuccio	Ampolla	Kanne	Burette	Cruet	7.66 / 8	27	92.606 (XVI.11)	16.154 (II.9), 30.31.352- 360 (IV.28)	12.116-117 (49.116-117)	1252-1303 (1301-1303)	3,481
21	D. †FLOR ENTIA R. †IOHA NNES <sup>2</sup> B	Palma	Palma	Palme	Palme	Palm	10 / 11	67	9.25-26	96.934-937 (XIII.4)	-	1304/I	3,527
22	D. †FLOR ENTIA R. †IOHA NNES <sup>2</sup> B	Ancudinis	Incudine	Amboß	Enclume	Anvil	10 / 11	68	9.27-28	97.938-941 (XIII.5)	26.283-284 (58.283-284)	1304/II	3,489
23	D. †FLOR ENTIA R. †IOHA NNES <sup>2</sup> B	Segolum	Falcetto	Sichel	Faucille	Sickle	11 / 12	69	9.29	98.942-945 (XIII.6)	26.286-287 (58.286-287)	1305/I	3,516
24	D. †FLOR ENTIA R. †IOHA NNES <sup>2</sup> B	Schala	Scala	Leiter	Échelle	Ladder	12 / 13	71	11.38-39	100-101.961- 965 (XIII.9)	27.294-295 (59.294-295)	1306/I	3,513
25	D. †FLOR ENTIA R. †IOHA NNES <sup>2</sup> B	Pera	Pera	Birne	Poire	Pear	12 / 13	72	11.40	101.966- 968 (XIII.10)	27.296-298 (59.296-297)	1306/II	3,535
26	D. †FLOR ENTIA R. †IOHA NNES <sup>2</sup> B	Pettinis	Pettine	Kamm	Peigne	Comb	14 / 15	73	12.47	104.983- 986 (XIII.14)	27.305 (60.305)	1307/II	3,462

<sup>2</sup> As aratro.

27	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Folea ficus	Foglia di fico	Feigenblatt	Feuille de figuier	Fig leaf	14 / 15	74	13.52 (XV.16)	105.995-999 (XIII.16) (60.309-311)	28.309-311 (60.309-311)	1308/I	3,503
28	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Dua Clovia incrocicchi ata	Due chiodi decussati	Gekreutz Nägel	Crous croisées	Crossed Nails	14 / 16	75	13.57-59	106.1006-1011 (XIII.18)	28.313 (60.313)	1308/II	3,507
29	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Clipeum	Scudo con punto	Schild mit punkt	Écu avec globule	Shield with pellet	15 / 16	177	14.61 (XV.18)	107-108, 1017-1019 (XIII.20)	29.315-316 (61.315-316)	1309/I	3,522
30	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Duas pannochias de grano in uno gambo	Due pannocchie di grano su uno stelo	Zwei gebogene Weizenähren an einem stiel	Deux épis avec un tige	Two grain ears with stem	-	76	94.628 (XVI.23) <sup>3</sup>	(XIII.22)	11.96-97 (49.96-97) <sup>4</sup>	1309/II	3,507
31	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Mons	Monte	Berg	Mont	Mount	17 / 17	78	15.75	111.1050-1051 (XIII.26)	30.328 (62.328)	1310/II	3,484
32	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Cornua cervi	Corna di cervo	Hirsch-hörner	Bois de cerfs avec anneau	Deer antlers with annulet	17 / 18	79	16.79	113.1058-1063 (XIII.28)	30.329 (62.329)	1311/I	3,508
33	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Porticus	Arcata	Bogengang	Voûte d'entrée	Archway	18 / 18	80	16.82	34.395-398 (IV.10), 114.1076 (XIII.30)	-	1311/II	3,481
34	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Grillus	Grillo	Grille	Grillon	Cricket	7.64 / 9	20	94.632 (XVI.26)	22.257-259 (III.17)	9.76 (46.76)	1310-1315 (1312/I [?])	3,484
35	D. ♀FLOR ENTIA R. ♂IOHA NNES <sup>3</sup> B	Chiavi-stellus	Chiavi-stello	Riegel	Loquet	Latch	19 / 19	81	17.88-89	116-117, 1091-1095 (XIV.3)	31.341-342 (63.341-342)	1312/II	3,515

<sup>3</sup> As due foglie di quercia con gambo.

<sup>4</sup> As due pigne.

36	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Caldaria	Caldaia	Topf	Chaudron	Cauldron	19 / 19	82	18.93-96 (XIV.7)	1100-1110 (63.343-345)	117-118, 31.343-345	1313/II	3,524
37	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Staffa	Staffa	Steigbügel	Étrier	Stirrup	20 / 20	83	18.98	119.1113- 1116 (XIV.14)	31.347-348 (63.347-348)	1313/II	3,500
38	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Veges	Botte	Faß	Baril	Barrel	20 / 20	84	18.99	120.1117- 1120 (XIV.8)	32.349-350 (63.349, 64.350)	1314/I	3,505
39	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Morsis	Morso	Klammer	Serrejoints	Clamp	22 / 22	88	20.108	125.1157 (XIV.14)	-	1316/I	3,518
40	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Fiaschus	Fiasca	Flasche	Fiacon	Flask	25 / 23	90	22.120-121	128.1190- 1194 (XIV.17)	34.374 (65.374)	1317/I	3,492
41	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Luna et stella inchiusa	Luna con stella inchiusa	Mond und Stern	Lune surmontée d'une étoile	Crescent moon with star	25 / 24	91	22.124-125	129.1195- 1197 (XIV.19)	34.375-376 (65.375-376)	1317/II	-
42	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Acciaiuolis	Acciarino (simbolo d. Acciaiuoli)	Feuerstahl	Firesteel	Flint striker	26 / 24	51/92	22.126	130.1198- 1200 (XIV.20)	34.377 (65.377)	1318/I	3,490
43	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Solis	Sole	Sonne mit Gesicht	Soleil avec Face	Sun with Face	27 / 26	93	24.135	132.1223- 1226 (XIV.23)	35.385 (66.385)	1318/II	3,485
44	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Gallus	Gallo	Hahn	Coq	Rooster	29 / 27	96	26.150	136.1254- 1256 (XV.1)	32.352-354 (64.352)	1320/I	3,515
45	D. ḤFLOR ENTIA R. Ṣ IOHA NNES B	Duas spate incrocchiate	Due spade decussate	Zwei Schwerter in saltire	Deux épées en sautoir	Crossed Swords	29 / 30	97	26.153	137.1258- 1259 (XV.4)	36.394-395 (67.394-395)	1320/II	3,521

46	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Cesorie	Cesole	Schere	Ciseaux	30/30	98	27.158	138.1269 (XV.7)	36.399-400 (67.399-400)	1321/I	3,517
47	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Testa leonis	Testa di leone	Löwenkopf	Tête de lion	31/31	99	27.163-166 (XV.9)	139-140. 37.403-404 (68.403-404)		1321/II	3,516
48	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Rosa in uno gambo cum duobus follis	Rosa con due foglie e gambo	Blume mit zwei Blatten	Rose avec deux feuilles et la tige	31/32	100	28.168-170 (XV.11)	140-141. 37.405-406 (68.405-406)		1322/I	3,517
49	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Mons cum folea floris super mont.	Monte con foglia di fico	Berg mit Feigenblatt	Mont avec feuille de figuier	32/32	101	28.174	141-142. 37.407 (68.407)		1322/II	3,511
50	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Coppa cum gambo aperto	Coppa con gambo aperto	Tasse mit Stiel	Coupe avec tige	33/33	103	29.180	143-144. 37.38.409- 1300-1306 411 (68.409- (XV.17) 411)		1323/II	3,523
51	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Spinosus	Riccio	Igel	Hérisson	34/34	104	30.182	144-145. 38.412 1307-1311 (XV.19)		1324/I	3,520
52	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Accetta	Accetta	Axt oder Bell	Hache ou hachette	35/34-35	105	30.185	145.1312- 1314 (XV.22)	38.413-414 (68.412)	1324/II	3,503
53	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Leonicus sedens	Leone seduto	Löwe gesessen	Lion assis	36/41	107	31.190	147-148. 38.418-419 1325-1328 (69.418-419) (XV.26)		1325/II	3,538
54 <sup>5</sup>	Missing	Not listed in LdZ	Croce trifogliata	Kleeblatt-kreuz	Croix avec extrémités en trèfle	-	133	98.667-669 (XVI.54)	32-33.375- 381 (V.5)	13.120-123 (49-50.120- 121, 123)	1315-1325	-
55	D. +FLOR ENTIA R. -S'IOHA NNES <sup>5</sup> B	Arundins	Rondine	Schwalbe	Hirondelle	55/64	129	38.243	169.1445- 1449 (XVII.3)	43.466-467 (72.466-467)	1336/II	3,497

<sup>5</sup> Not illustrated in the plates.

## FLORENCE (?) OR UNKNOWN MINTS

Cat.	Inscriptions	Signum (Latin)	Segno (Italian)	Beizeichen (German)	Marque (French)	Privy mark (English)	Orsini/ Ldz	Joseph	CNI XII (XVI.27) <sup>7</sup>	Bernocchi	Bargello	Date	Weight
56	D. +FLOR ENTIA R. S'IOHÆ NINESB	Bucclia or buccolla	Boccola	Kettenrad	Pignon	Gear-wheel or spocket	7.67 <sup>7</sup> /9	-	95.633	23.260 (III.18)	-	After 1310	3.439
57	D. +FLOR ENTIA R. S'IOHÆ NNESB	Not listed in Ldz	Tre globetti ovali uniti	Drei ovale Punkte im Kleeblatt	Trois boulettes ovales en trèfle	Three oval pellets in trefoil	-	-	-	-	-	after 1310	3.434
58	D. +FLOR ENTIA R. S'IOHÆ NNESB	Not listed in Ldz	Due foglie	Zwei blätter	Deux feuilles	Two leaves	-	-	-	47.541 (VII.26) <sup>8</sup>	-	1252-1421 (1311- 1325)	3.511
59	D. +FLOR ENTIA R. S'IOHÆ NNESB	Columba cum ramo di olive in beccho	Colomba con ramo di olivo	Taube mit Zweig	Colombe avec rameau de olivier	Dove with olive branch	27 / 26	94	25.142	134.1237- 1241 (XIV.26)	35.388-389 (66.388-389)	After 1319/I	3.441
60	D. +FLOR ENTIA R. S'IOHÆ NNESB	Not listed in Ldz	Fibbia con cerchietti	Schnalle mit	Boucle avec annelets	Buckle with annelets	-	-	102.715 (XVII.29)	38.444 (V.30)	-	After 1338/I (?)	3.495

## MINT OF PONT DE SORGUES (AVIGNON), anonymous popes, from 1322

Cat.	Inscriptions	Segno (Italian)	Beizeichen (German)	Marque (French)	Privy mark (English)	Poey d'Avant	Serafini	Muntoni	Bern. (V)	Toffanin	Date	Weight
61	D. S'ANT PETRH R. S'IONIA IVNESB	Chiavi decussate / tiara papale	Gekreutz Schlüssel/ Päpstliche Tiara	clés croisées / tiara papal	Crossed keys / papal tiara	II, 348.4140	IV, 73.27	IV, 161.2	cf. 89.230	164.223/2	from 1322	-

<sup>6</sup> As *guada*.<sup>7</sup> As *guada*.<sup>8</sup> As *Segno* - 6.



**Appendix: MINT OF FLORENCE, gold florins (*fiorini stretti*), 1252-1421 (not part of Willanzheim hoard; acquired by SMM in 1990)**

Cat.	Inscriptions	Signum (Latin)	Segno (Italian)	Beizeichen (German)	Marque (French)	Privy mark (English)	Orsini	Joseph (Bretz.)	CNI XII (Firenze)	CNF (Bern.)	Toderi & Vannel (Bargello)	Date	Weight
62 <sup>9</sup>	D. +FLOR ENTIA R. -SIOHA NNESTB	Not listed in <i>LdZ</i>	Croce cuspidata	Kreuz	Croix	'Cuspidated' cross	-	102	37.230	35.408-410 (V.15)	13.129 (50.129)	1322/II- 1348/I	3.507
63 <sup>10</sup>	D. +FLOR ENTIA R. -SIOHA NNESTB	Spata	Spada	Schwert	Épée	Sword	52 / 61	-	37.232	164-165. 1419-1422 (XVI.25)	11-12.106- 107 (48.103, 107)	1334/II	3.510

<sup>9</sup> Not illustrated in the plates.

<sup>10</sup> Not illustrated in the plates.

TAV. I





TAV. III





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Tav. V





