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THE MONETARY REFORMS OF WILLIAM II (1166–1189): ORIENTAL AND WESTERN PATTERNS IN NORMAN SICILIAN COINAGE

Lucia Travaini *

Introduction and Summary

A first version of this paper was presented at the Seminar held in Tübingen in 1991, dedicated to *Oriental-occidental relations in monetary circulation, money trade and coin finds*, but further research and new evidence have made it necessary to correct some of the original conclusions. The main argument, however, remains valid: in spite of some increase of oriental elements in the coinage of William II, the monetary economy in the Regno had decisively shifted towards a Western pattern by the end of his reign.[1]

*I wish to thank Professor Philip Grierson for reading this paper, and providing his customarily generous and valuable advice: any opinions here expressed, however, are of course my own responsibility.

[1] See now for the whole coinage of the Normans L. Travaini, La monetazione nell'Italia normanna, Nuovi Studi Storici 28 (Roma 1995), with ample historical background and a listing of all known types, updating the Norman section of R. Spahr, Le monete siciliane dai bizantini a Carlo I d'Angiò (582–1282) (Zurich–Graz 1976). A new type of Roger II was published by F. D'Angelo, Un "minimo di mistura" inedito di re Ruggiero II di Sicilia, SM 46, 1996, 11–13. Cf. also the relevant chapter in P. Grierson and L. Travaini, Medieval European Coinage, 14, South Italy, Sicily, Sardinia, with a Catalogue of the Coins in the Fitzwilliam Museum, Cambridge (Cambridge, in the press). For the coin fineness see also L. Travaini, The fineness of Sicilian taris, and of those of Amalfi and Salerno (11th to 13th centuries), in: The application of scientific methods for investigating coins and coinage (British Museum–Royal Numismatic Society Symposium, London 22–24 Sept. 1994), Metallurgy in Numismatics 4, in the press.

Orientalization can be seen in the increased use of correct Arabic legends, in the abandonment of weight uniformity in the gold coinage, and in the introduction of a large copper coin. A Western feature was the large-scale use of foreign billon denari, such as provisini of Champagne, in place of local coins. The introduction of a new tari-weight, of 0.88 g instead of 1.05 g, making the Sicilian ounce equal to that of Genoa, may have also taken place during the reign of William II, though this is a matter on which more research is necessary.

Coinage in Sicily and Southern Italy before William II

At the date of the Norman conquest, the monetary traditions of Sicily and Southern Italy were different from each other. Arabic Sicily used gold quarter dinars, of c. 1.05 g, and small silver-billon coins, of about 0.20–0.40 g, known as kharrubas, corresponding to 1/16th dirham[2], but no copper coins. When the Norman brothers Robert Guiscard and Roger I of Hauteville conquered the island and took Palermo in 1072, they struck gold quarter dinars on the model of the Islamic coins, at the standard of carats 16 and 1/3, which was to remain virtually unchanged over two centuries.

In Southern Italy the supremacy of the Byzantine gold solidus had been weakened by the success of similar quarter-dinars, known as taris on the mainland. It seems now clear that Amalfi and Salerno produced gold taris, imitating those of al-Mu'izz, in local competition with Byzantine gold coins: Amalfi from at least 960, and Salerno from c. 1000. Byzantine folles were common almost everywhere in Southern Italy. Local copper follari were issued at the mint of Salerno for the first time by the Lombard prince Gisulf II (1052–77).[3]

Duke Robert Guiscard took Amalfi in 1073 and Salerno in 1076, but whilst his name is inscribed on the taris struck at Palermo, his continental coins remained all

[2] On Islamic and early Norman Sicilian coinage: Travaini, La monetazione (note 1), pp. 29–34; P. Balog, Contributions to the Arabic metrology and coinage, AIIN 27–28, 1980–81, pp.137–154; Idem, The silver coinage of Arabic Sicily, in: Atti della Seconda Settimana di Studi italo-arabi, Spoleto, 9–12 ottobre 1977 (Roma 1979), pp. 1–21; P. Balog–F. D'Angelo, More on the Arabic silver kharruba of Sicily, AIIN 30, 1983, pp. 123–128; N. Lowick, Un ripostiglio di monete d'oro islamiche e normanne da Agrigento, Bollettino di Numismatica 6–7, 1986, pp. 145–166; L. Travaini, Le prime monete argentee dei normanni in Sicilia: un ripostiglio di kharrube e i modelli antichi delle monete normanne, RIN 92, 1990, pp. 171–198.

[3] For Sicilian taris and those of Amalfi and Salerno cf. Travaini, La monetazione (note 1), pp. 99–186. For the taris of Amalfi and Salerno the first systematic study was that of P. Grierson, La monetazione amalfitana nei secoli XI e XII, in: Amalfi nel medioevo, Atti del convegno internazionale, Amalfi 1973 (Salerno 1977), reprinted in his Later medieval numismatics (11th–16th centuries), Selected studies (London 1979), IV; see also L. Travaini, I tarì di Salerno e di Amalfi, Rassegna del Centro di cultura e storia amalfitana, X, giugno–dicembre 1990, n. 19–20, pp. 7–71; V. von Falkenhausen, La circolazione monetaria nell'Italia meridionale e nella Sicilia in epoca normanna secondo la documentazione di archivio, Bollettino di Numismatica 6–7, 1986, pp. 55–79.

For the distribution of finds of folles in Southern Italy and regional differences between Calabria, Campania, and Apulia, cf. Travaini, La monetazione (note 1), pp. 384–394.

anonymous.[4] Only after Guiscard's death in 1085, his successors introduced their personal coinages in their respective territories. In the Duchy of Apulia, at Salerno, Roger Borsa (1085–1111), produced copper follari in his own name and taris with his initials.

In the county of Sicily Roger I (1072–1101) carried out a monetary reform soon after 1085. The reformed coinage, consisting of gold taris, base billon kharrubas and copper follari, was caracterized by a unified type: a Tau on one side, which should be read as a cross, a first step towards the Christianization of Sicilian coinage.[5]

Whilst the small kharrubas remained typical of Sicily, a flow of Northern silver deniers reached Southern Italy, where copper coins also continued to be widely used. It seems that monetary circulation in Southern Italy was more complex than in Sicily, where Roger I, and later his son Roger II (1105–54), maintained a stronger central control over their territory.

The success of a variety of foreign denari in Southern Italy can be explained by the fact that by the beginning of the 12th century the denier of Pavia, which had been the most widely used coin in Italy, had been badly debased, and replaced by other denari, among which there were mainly those of Lucca.[6]

In 1130 Roger II became king, but not till 1140 did he succeed in gaining control over the whole of the Kingdom. In 1140 he carried out a complete monetary reform. It was formerly believed that this affected only the silver and copper coinage, but recent numismatic research has shown that the whole of the coinage was reorganized. The only written evidence on the reform is in Falco of Benevento, though his account of it has been the subject of much debate. With the help of Falco, and with other written records and numismatic evidence, the new monetary system can be reconstructed as follows:

Table 1: The monetary system of Roger II in 1140 (money of account in brackets).

(*solidus regalis*)	Sicilian tari 1.05 g	*ducalis* AR	*tercia ducalis* AR	(grain) AU	follaro 2 g	kharruba
1	4	12	36	72	288	576?
	1	3	9	18	72	144?
		1	3	6	24	48?
			1	2	8	16?
				1	4	8?
					1	2?

[4] The chronology of the copper coinage of Salerno has been discussed at length in many studies. Some scholars initially disputed the 11th century dating proposed by Grierson in 1956 [The Salernitan coinage of Gisulf II (1052–77) and Robert Guiscard (1077–85), Papers of the British School at Rome 24, 1956, pp. 37–59, reprinted in Later medieval numismatics, II], but there is now no doubt that he was correct (cf. Travaini, La monetazione [note 1], pp. 238 ff.).

[5] Travaini, La monetazione (note 1), pp. 38–43; Travaini, Le prime monete (note 2). For three centuries under Islamic rule Sicily had not used copper coins.

[6] J.-M. Martin, Le monete d'argento nell'Italia meridionale del secolo XII secondo i documenti d'archivio, Bollettino di Numismatica 6–7, 1986, pp. 85–96. For finds of foreign deniers in Norman Italy cf. Travaini, La monetazione (note 1), p. 392, and pp. 295–299 for those of Rouen.

The system combined Arabic and Byzantine monetary traditions, making the Sicilian tari the "caput monetae", but giving southern Italy and Sicily the possibility of using their own peculiar coinages, so that billon kharrubas circulated only in Sicily, whilst the silver ducalis and the taris of Salerno and Amalfi were meant for local use in Southern Italy. Different traditions of a very heterogeneous kingdom were thus put together under a royal attempt of organization.[7]

Sicilian taris became the standard coin for the whole Kingdom, and their production in 1140 was much increased in the mints of Palermo and Messina.[8] Until recently it was assumed that the weight standard of the Norman tari was 0.88 g, i.e. that of the later "trappeso napoletano", but numismatic evidence from large hoards has proved that the Fatimid standard of 1.05 g was still in use for the taris of Roger II and William I (1154–66).[9]

The weight of 0.88 g was first introduced in the taris of Salerno and Amalfi: they originally weighed around 1 gramme, but at the time of Roger II they were struck on the reduced standard. Presumably the new standard originated in Southern Italy because less control was there exercised in maintaining official standards. We do not know exactly when the new tari-weight of 0.88 g was introduced for the Sicilian tari, but it was certainly after 1166, the date of William I's death, since all his taris still follow the Fatimid standard, and before 1231, when Frederick II created the "augustalis", of

[7] On the reform cf. Travaini, La monetazione (note 1), pp. 55–60, 176–179, 210–217, 295–300. The romesine abolished in 1140 by Roger II are commonly believed to have been old Byzantine folles which would have remained in circulation until then (cf. my article L.Travaini, La riforma monetaria di Ruggero II e la circolazione minuta in Italia meridionale tra X e XII secolo, RIN 88, 1981, pp. 133–153). On the basis of the study of finds and of a comprehensive re-examination of data, I no longer believe that Byzantine folles were still circulating in 1140, and in my book I argue that the abolished romesine were foreign denari such as those of Rouen, known as *romesini* or *rothomagensi nummi,* which are quite common in finds in southern Italy. A recent hoard from Salerno was composed of 3 follari of Roger Borsa and one denier of Rouen (G. Libero Mangieri, Salerno, Via Mercanti 49, Rinvenimenti 1990: b, Il materiale numismatico, Bollettino di Numismatica 20, 1993, pp. 121–126). – Subsequently, and without reference to my book, two authors have proposed different interpretations of Roger's reform. G. Libero Mangieri, Badia di Cava dei Tirreni: La collezione numismatica Foresio, Periodo medievale (Salerno–Roma 1995), pp. 35–42, suggests that the romesine were not abolished in 1140, but this is an unusual interpretation of Falco's text and particularly of the term *induxit:* according to Falco, Roger II ordered that nobody should accept romesine nor spend them at the markets *(nemo in toto eius regno viventium romesinas accipiat, vel in mercatibus distribuat),* which should make it clear that romesine were indeed abolished. – J.-M. Martin continues to believe that romesine were Byzantine folles: some of his references, though, confirm my interpretation, as for example a document from Gravina 1139, referring to "miliaresia of good deniers of Rouen" (J.-M. Martin, Italies normandes XI^{e}–XII^{e} siècles [Paris 1994], p. 328). Martin in any case underestimates the role of the king in the monetary affairs of his Regno (cf. idem, La Pouille du VI^{e} au XII^{e} siècle, Collection de l'Ecole Française de Rome 179 [Rome 1993], pp. 443–484). This theme was one of the main topics of a Symposium dedicated to "Coinage in Norman Italy" held at Gonville and Caius College, Cambridge, on 1 March 1996.

[8] Cf., on the composition of hoards, Travaini, La monetazione (note 1), p. 106.

[9] L. Travaini, La monetazione (note 1), pp. 133–137; eadem, Two hoards of Sicilian Norman tari, NC 144, 1985, pp. 177–208; eadem, Il ripostiglio di Montecassino e la monetazione aurea dei normanni in Sicilia, Bollettino di Numismatica 6–7, 1986, pp. 167–198.

5.32 g, based on the ounce of 30 taris of 0.885 g.[10] Although we cannot be certain, it seems likely that the new standard for the Sicilian tari was adopted under William II. Much work still needs to be done in this field, for metrological changes must be seen in relation to economic and political forces, as new weight-standards are a sign of commercial as well as of political links.[11]

Roger's monetary reform of 1140 had also its oriental and western aspects. It created a silver-billon coinage by mixing Byzantine and Fatimid systems: the new royal silver coin, the ducalis, which circulated mainly in Apulia being reminiscent of the ancient miliaresion and the full dirham, and it had a fraction worth 1/3, the "tercia ducalis", as both of them occasionally also had.

The "tercia ducalis" was similar to the waraq dirham, and it was worth 8 copper "follari", just as the third of a miliaresion of the 11th century was equal 8 folles. The "tercia ducalis" had a weight of c. 0.9 g, similar to European deniers, but its higher silver content (about 50%) than many of these was probably one of the reasons for its short life in circulation.[12]

The Fatimid kharruba was in theory worth 1/16 of a dirham and the Norman kharruba was probably 1/16 of a "tercia ducalis", though written evidence is lacking.[13] The smallest coins in Roger's system were the follaro and kharruba. On the basis of Falco's relation of tres follares to one old romesina, and eight of these to one ducalis, we may state that, in theory, the copper follari of c. 2 grammes were valued at 24 to the ducalis and 72 to the Sicilian tari. By comparison with the Fatimid system, we may assume that the kharruba, as 1/16 of a dirham, was 144 to the tari.[14]

Whilst these fractions of 1/72 and 1/144 in the Fatimid system were in it only money of account (respectively habba and danaq to the dinar), they were actual coins in the kingdom of Sicily, suggesting the existence of a generally expanded monetary economy,

[10] The new weight standard made the ounce of 30 Sicilian taris equal to the ounce of Genoa (26.395 g), Travaini, La monetazione (note 1), p. 136. L. Travaini, Zecche e monete nello stato federiciano, in: Federico II e il mondo mediterraneo, ed. by P. Toubert and A. Paravicini Bagliani (Palermo 1994), pp. 146–164.

[11] Cf. P. Grierson, Weight and coinage, NC, 7th s., 5, 1965, pp. III–XVII; P. Nightingale, The evolution of weight standards and the creation of monetary and commercial links in Northern Europe from the tenth century to the twelfth century, The Economic History Review, 2nd s., 38, 2, 1985, pp. 192–209.

[12] We find *terciae ducali*s hoarded in the Montescaglioso hoard of the late twelfth or early thirteenth century, together with denari lucchesi and provisini of Champagne: Travaini, La monetazione (note 1), pp. 210–220.

[13] According to the Cairo Geniza documents, in the 11th and 12th centuries the waraq dirham was the most important silver coin in general transactions, and it was worth 1/3 of the full dirham, and 40 to the dinar. This is very close to the figure of 36 *terciae ducalis* to 1 *solidus regalis* of Roger's reform in 1140; cf. S. A. Goitein, A Mediterranean society: the Jewish community of the Arab world as portrayed in the documents of the Cairo Geniza, vol. I: Economic foundations (Berkeley–Los Angeles 1967), p. 358 ff.

[14] Travaini, La monetazione (note 1), p. 60.

based on coins of medium and small size, just as the quarter-dinar was preferred to the full dinar.[15]

William II

Whilst the reign of William I produced coins similar to those of Roger II, the reign of William II saw the introduction of various monetary changes, which took place in two main phases. Among these changes there were: a reorganization of the production of taris at Salerno and Amalfi; changes in the Sicilian taris; changes in the billon as well as in the copper coins.[16]

Taris of Salerno and Amalfi were both issued on larger scale than previously, with correct Arabic legends. Those of Amalfi had for the first time a legend bearing the full name and title of the king with mint and date formula, and this probably means a stricter royal control over the mint.[17] These changes belong to the first phase, with a system as follows:

Table 2: William II's first monetary system (from Travaini, La monetazione [note 1], p. 73).

(solidus, AU)	Sicilian tari, AU	apuliensis AR	tercius apul., AR (= grain, AU)	1/6 apuliensis AR	follaro	kharruba
1	4	24?	72?	144?	?	?
	1	6?	18?	36?	?	?
		1	3	6	?	?
			1	2	?	?

Sometime during the reign of William II a new system of account was introduced, based on the *tercenarius*, i.e. 1/300 of an ounce, or 1/10 of a tari (like the full dirham was 1/10 of a dinar).[18]

[15] The reason for this preference for small denominations in Sicily was studied by P. Balog, La monetazione della Sicilia araba e le sue imitazioni nell'Italia meridionale, in: Gli arabi in Italia, ed. F. Gabrieli–U. Scerrato (Milano 1979), p. 616. Balog suggested that Sicily was probably less rich than tradition has it, but it is more likely that the wide use of medium sized coins conformed better to a relatively expanded monetary economy, as is observed by E. Stumpo, Economia naturale ed economia monetaria: l'imposta, in: Storia d'Italia. Annali 6, Economia naturale, economia monetaria, ed. R. Romeo and U. Tucci (Torino 1983), pp. 521–562, at p. 553. Cf. Travaini, La monetazione (note 1), p. 21.

[16] Cf. Travaini, La monetazione (note 1), pp. 70–80.

[17] The same is possible for the mint of Gaeta, where the legend W REX probably appeared for the first time during the reign of William II and not William I: cf. Travaini, La monetazione (note 1), p. 74.

[18] We do not have written records of such reform, but at least one of the new coins bears the name of the denomination: *quarta tercenarii* (while *apuliensis, terci'apuliensis*, and *med'terc'* belong to William II's first coinage, cf. Travaini, La monetazione (note 1), pp. 75–79. Cf. also L. Travaini, Aspects of the Sicilian Norman copper coinage in the 12th century, II. The lion and the palm-tree: more on the Sicilian copper coins of King William II, NC 1991, pp. 166–174.

Table 3: William II's second new monetary system (1180–85?).

ounce (26.4 g?)	Sicilian tari 0.88 g?	*(tercenarius)*	(grain)	*quarta tercenarii billon*	copper c.12 g	copper 2 g
1	30	300	600	1200	?	?
	1	10	20	40	?	?
		1	2	4	?	?
			1	2	?	?
				1	?	?
					1	6?

This system divided the tari into 20 grains. We do not know how the tari had been divided previously, but it might have been divided into 18 grains (as 1/4 of a dinar, being a dinar composed of 72 grains). A tari of 20 grains can be compared to the pound of 20 solidi, which was the Western system of account.

It can be noted that the use of gold units divided into fractions of 20 grains had a German origin, and it is also documented in the Edict of Rothari, chapter 346, where the solidus is equated to 20 siliquae.[19]

As already explained, it is not clear when the tari-weight was changed from 1.05 g to 0.88 g. The change might well have taken place during the reign of William II, who also introduced other changes to the Sicilian taris, as we shall see below.

The weight of 0.88 g was already in use for the continental taris; its adoption for Sicilian taris might be considered as a sign of a stronger link to the north, as well as a more efficient organization of the whole kingdom: but we do not know whether a metrologic unification of the coinage really took place then. The ounce of Genoa, of 26.395 g, has generally been considered equal to the Sicilian ounce; it seems now that the Sicilian ounce was standardised to that of Genoa.[20]

[19] P. Grierson–M. Blackburn, Medieval European Coinage, 1: The early middle ages (5th–10th centuries) (Cambridge 1986), p. 15; Grierson, Weight and coinage (note 11), p. VI.

[20] Genoa had a privileged role in the kingdom of Sicily, and particularly so from the 1180s. On Genoa and Sicily: P. F. Casaretto, La moneta genovese in confronto con le altre valute mediterranee nei secoli XII e XIII, Atti della Società Ligure di Storia Patria, 55, 1928 (useful, but to be corrected in various parts); M. Chiaudano, La moneta di Genova nel secolo XII, in: Studi in onore di A. Sapori, I (Milano–Varese 1957), pp. 189–214 (Casaretto and Chiaudano interpreted written evidence as implying that there was a change in the alloy of the tari, but this is now contradicted by the analyses quoted below); R. S. Lopez, Settecento anni fa: il ritorno all'oro nell'occidente duecentesco, Rivista Storica Italiana 1953, pp. 19–55, 161–198 (p. 44 for the Genoese ounce as equal to that of Sicily); D. Abulafia, The two Italies: economic relations between the Norman Kingdom of Sicily and the Northern communes (Cambridge 1977); L. Travaini, Genova e i tarì di Sicilia, RIN 93, 1991, pp. 187–194, to be revised in some of the conclusions on the basis of new data from metallurgical analyses: Travaini, La monetazione (note 1), p. 78.

Abandonment of weight standard and other changes in the Sicilian taris

As we have already seen, Sicilian taris up to the time of William I had a weight standard of 1.05 g although individual weights vary. From the time of William II Sicilian taris became more divergent in their individual weights. This suggests the abandonment of the use of any standard in cutting the individual coins, a practice already abandoned for gold coins in other Eastern mints[21]: no weight uniformity can be seen in the gold dinars of the later Abbasid caliphs in Syria after 1160, nor in the gold coins of Egypt in the 12th century.[22]

In the 13th century the Byzantine gold coins also lost their weight uniformity, and they were struck al-marco, as described by Pegolotti: *in tutti i pagamenti di mercatantia si spendono e si danno in pagamento a peso di bilance una moneta d'oro che s'appellano perperi.*[23] Sicilian taris, however, not only were irregular in their individual weights, but also in their shape, being often similar to broken gold ingots, or being fragmented and cut *(spezzati)*.

On Sicilian taris of William II appeared for the first time a sign that has no certain identification: it looks like a P, but it is more likely an Arabic word, that Balog read as *bakh,* "good", as referring to the quality of the coin.[24] This reading is not certain, but there seems to be no doubt that it should be considered as an Arabic word, i.e. one more "eastern" sign on this coinage, even though it might have simply been a consequence of the mint personnel being Arabic.

The fineness of the Sicilian tari

Various 13th century documents indicate for the Sicilian tari a fineness between 16 and 17 carats (66.7% to 70.8% fine gold). Undated mint records describe a fineness of 16 carats and 1/3, the remainder being composed of silver and copper in the proportion of 3 to 1, which should correspond to 68% gold, 24% silver, and 8% copper.[25] The same proportion was confirmed by Charles of Anjou in November 1267, to be adopted at the mints of Barletta and Messina.[26]

Various groups of taris have already been analysed by specific gravity and gamma ray absorption, showing a constant gold fineness of c. 68%. These methods, however,

[21] Travaini, La monetazione (note 1), pp. 129 and 133–137; Travaini, Two hoards (note 9).

[22] P. Balog, Quelques dinars du début de l'ère Mameluke Bahrite, Bulletin de l'Institut d'Egypte 32, 1951, p. 251; A. S. Ehrenkreutz, The standard of fineness of gold coins circulating in Egypt at the time of the Crusades, Journal of the American Oriental Society 74, 1954, p. 163 note 6; M. Broome, A handbook of Islamic coins (London 1985), p. 92.

[23] Francesco Balducci Pegolotti, La pratica della mercatura, ed. A. Evans (Cambridge Mass. 1936), p. 40. C. Morrisson et alii, L'or monnayé I: Purification et altérations de Rome à Byzance, Cahiers Ernest-Babelon 2 (Paris 1985), pp. 164–165; Travaini, La monetazione (note 1), p. 138.

[24] P. Balog, Contributions (note 2), pp. 150–152; Travaini, La monetazione (note 1), pp. 127–128.

[25] Acta Imperii inedita saeculi XIII et XIV, ed. E. Winkelmann, 1 (Innsbruck 1880), n. 1004, p. 766.

[26] L. Dell'Erba, La riforma monetaria angioina e il suo sviluppo storico nel reame di Napoli, Archivio Storico Napoletano 57, 1932, p. 162.

are not precise in the presence of a ternary alloy, and only gave average results on the gold fineness.[27]

More analyses by fast neutron activation and proton activation were undertaken on two groups of taris in order to investigate also the quantities of silver and copper in the alloy. The result is that the proportion of 3 to 1 for silver and copper, stated in the 13th century mint documents, although never strictly applied, is only true for taris of the thirteenth century, possibly from the later years of Frederick II.[28] Norman taris and early Hohenstaufen ones have a fineness of 16 1/3 carats gold mainly alloyed with silver, and only a minor presence of copper. It was not till later that copper content was increased and silver content reduced. We cannot say what the reason was for the reduction of silver in the tari alloy. It might have been a consequence of the shortage of white metal at the mint, but it could also have been the result of a preference for "red" alloys.[29] We do not know whether the reduction of silver in the alloy after the mid 13th century was really intentional and calculated. The difference does not seem to have troubled the public, since there are no records of any complaints nor any other reference to fineness debasement in Sicilian documents.

The only documents to mention some kind of change in the Sicilian taris are Genoese notarial documents from 1186, where we find references to *uncia tarenorum novorum,* and, from 1203, to *tareni vetuli.*[30]

Casaretto and Chiaudano believed that these notarial references were related to a change in the fineness of the tari, meaning some debasement, and I agreed with them at some point of my research. The fast neutron activation analyses carried out on some specimens of the Bibliothèque Nationale seemed at first to prove that in fact a change took place in the later Norman times. Further study, however, proved that that was not the case.

How therefore should we interpret the Genoese reference to "new" taris, if any debasement must be excluded in the late years of the 12th century–early 13th century?

Sicilian taris were spent by weight, probably in sealed bags, so that "new" could hardly be referred to their types.[31] "New" might have been taris in sealed bags, going

[27] P. Grierson–A. Oddy, Le titre du tari Sicilien du milieu du XIe siècle à 1278, RN, 6th s., 16, 1974, pp. 123–134; P. Balog et alii, Nuovi contributi sul contenuto aureo e la tipologia del tarì, AIIN 27–28, 1980–81, pp. 115–154.

[28] The results of the fast neutron activation analyses were first presented by L. Beck–L. Travaini–J.-N. Barrandon [New analyses for the study of the Sicilian tari coinage (11th–13th centuries)] at the 2nd Southern European Conference on Archaeometry, Delphi 19–21 April 1991 (in the press), but the text now needs some corrections. There was not an increase of copper in the taris issued late in the reign of William II and the reign of Tancred, so that a correction is needed to Travaini, Zecche e monete (note 10), p. 150 note 9. Cf. Travaini, The fineness (note 1).

[29] A reduction of the silver content in the tari alloy seems to support Andrew Watson's picture of the silver famine in the "eastern" countries, assuming that the kingdom of Sicily still behave as such. Only in the later 13th century, and with the exploitation of the Longobucco mines, did silver become the main metal in the Regno, as it was in other "eastern" countries: cf. A. Watson, Back to gold – and silver, The Economic History Review, 2nd s., 20, 1967, pp. 1–34. Cf. also, for some revision of Watson's model, D. Abulafia, Maometto e Carlo Magno: le due aree monetarie italiane dell'oro e dell'argento, in: Storia d'Italia, Annali 6, Economia naturale, economia monetaria (Torino 1983), pp. 223–270, at p. 253.

[30] Casaretto, La moneta (note 20); Chiaudano, La moneta (note 20), p. 214; Travaini, Genova e i tarì di Sicilia (note 20).

[31] For taris spent by weight cf. Travaini, La monetazione (note 1), pp. 137–141.

back to the old origin of the Arabic word *tari*, as fresh.[32] But the specification of "new" as well as "old" taris in the Genoese documents makes this interpretation less plausible, leaving room for another possibility. The date 1186 excludes any reference to a change of ruler. The "new taris" might have been new on account of their "new" weight standard, of a "new sicilian ounce", and since taris were indeed spent by weight, the standard of weight was as important as their fineness. The documents refer to ounces of *tareni novi* or *vetuli*, both reduced in values of Genoese money of account *(ad libram Ianue)*.[33]

Since fineness still remained unchanged at the time the notarial documents mentioned "new taris", we must therefore concentrate on metrology.

As we mentioned before, Sicilian taris from the time of William II were cut *al marco* or better "all'oncia" with increased individual weight differences, and many specimens weighing well over 1 gramme: from the taris of William II, we cannot detect any weight standard from a histogram. At the same time their flans became increasingly thicker, assuming a globular shape.[34]

Is it possible that the new aspect of the Sicilian taris coincided with the introduction of a new weight standard, both at the mint and in the home and foreign transactions?

We do not have much evidence yet, and research still needs to be done to investigate exchange rates between Genoa and Sicily in those years: could they have been affected by a change in the value of the Sicilian ounce?

The only explicit reference to the Sicilian ounce of the period is to be found in the *Liber Abaci* of Fibonacci (1202), according to which the ounce of Messina was divided into 30 taris of 20 grains each, and that the ounce of Palermo was worth 27 1/3 of such taris: although this does not give absolute values, it still means that the ounce of Palermo was heavier than the ounce of Messina.[35] At the same time, we are faced with the existence of different weight standards within Sicily[36], but monetary weights might have been unified earlier than others. If according to Fibonacci the ounce of Palermo in 1202 was still heavier than that of Messina, we do not know whether that was the "monetary ounce" after all. During the reign of William II, Messina became a leading town in trade, and also her mint produced a greater number of taris than Palermo: the monetary standard of Messina might have become the "new" royal standard.[37] Also, under William II many efforts were made to reorganise the administration of the kingdom; increased links with the mainland and with northern trade might have led to the introduction of a new weight standard for the Sicilian taris, so that the tari-

[32] S. M. Stern, Tarì: The quarter dinar, Studi Medievali, 3rd ser. 11, 1970, pp. 177–207.

[33] A reference to "new" taris as early as 11822 quoted by Casaretto from notary Lanfranco is not correct as all his activity is now dated from after 1202 (Abulafia, The Two Italies [note 20], p. 19 note 37).

[34] According to Arabic sources globular flans were obtained by pouring metal into water: cf. Travaini, La monetazione (note 1), p. 355; Balog, La monetazione (note 15), p. 619.

[35] Quoted by P. Guilhiermoz, Remarques diverses sur les poids et mesures du moyen age, Bibliothèque de l'Ecole des Chartes 80, 1919, pp. 5–100, at p. 22; Travaini, La monetazione (note 1), p. 137.

[36] Cf. D. Matthew, The Norman Kingdom of Sicily (Cambridge 1992), p. 77; Travaini, La monetazione (note 1), p. 137 note 83.

[37] For the increased production of taris at the mint of Messina under William II cf. Travaini, La monetazione (note 1), p. 126.

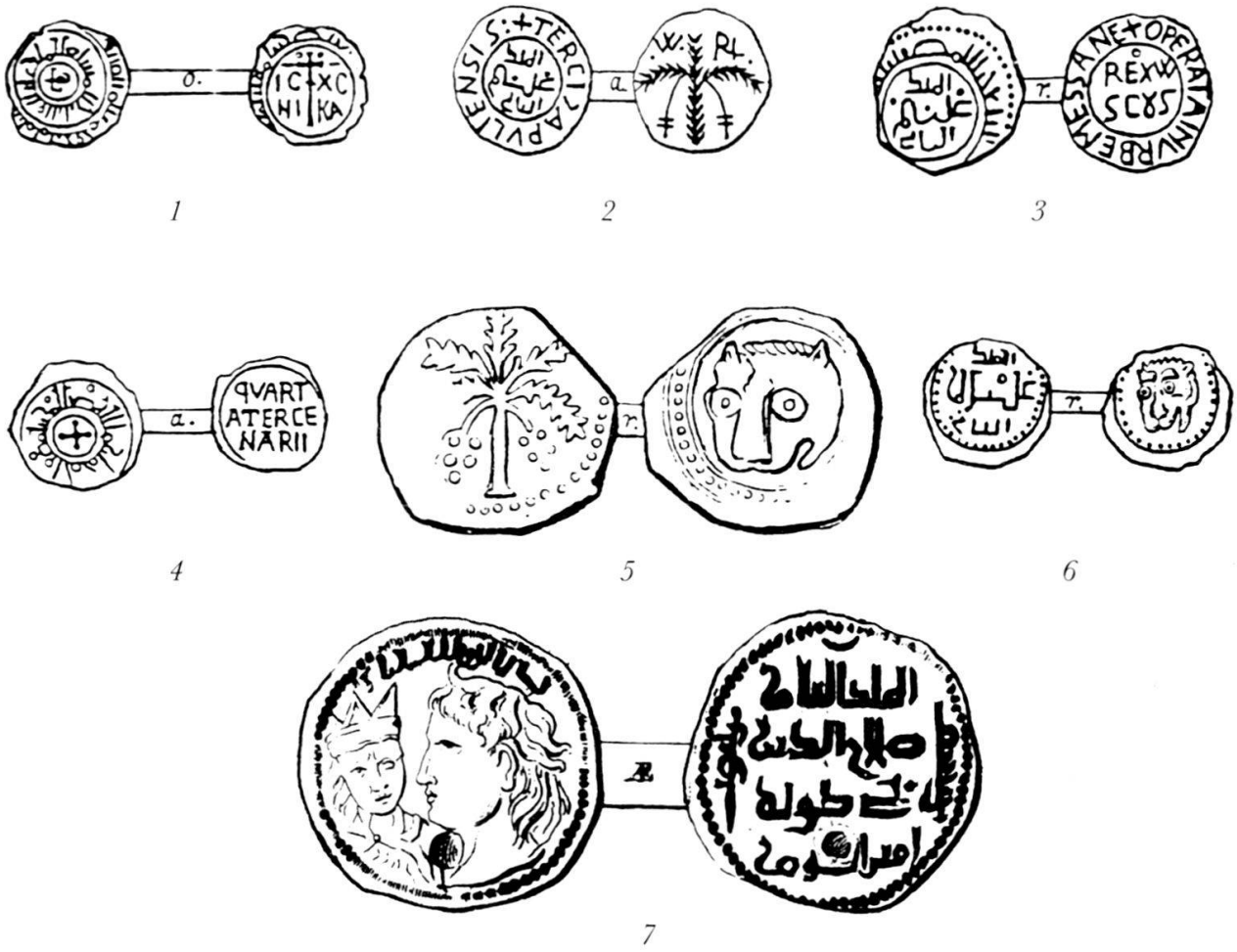

Fig. 1–6: Coins of William II (1166–89): *1* Sicilian tarì (in obv. field, Arabic word); *2* tercius apuliensis; *3* copper follaro of Messina; *4* quarter tercenarii (second coinage); *5–6* large follaro and its fraction (Messina, second coinage). Line drawings from D. Spinelli, Monete cufiche battute da principi Longobardi, Normanni e Svevi nel regno delle Due Sicilie (Napoli 1844). *Fig. 7*: One of the types of Turcoman copper dirhams found at Messina. Line drawing from C.O. Castiglioni, Monete cufiche dell'I.R. Museo di Milano (Milano 1819).

weight of Sicily was equal to that of Salerno and Amalfi, and, incidentally, the ounce of 30 Sicilian taris was equal to the ounce of Genoa.[38]

Before further speculation, let us consider the whole of William II's Sicilian coinage.

Silver coinage

The first silver coinage of William II consisted in the *apuliensis* and its fractions of 1/3 *(tercius apuliensis)* and 1/6 *(medius tercius):* they are rather rare and apparently their

[38] Another possible evidence of a change of the value of the Sicilian taris is in an Egyptian source: a passage in the treatise of Mansur ibn Ba'ra, written during the reign of the Ayyubid Sultan al-Kamil (AH 615–635/AD 1218–1238). Ibn Ba'ra listed the gold coins and their fineness

silver content was progressively debased *(Table 2)*.[39] Still, however, *puglios*, i.e. probably *apulienses*, were exported from the Regno, and are documented among the coins listed as belonging to a cardinal whose ship was robbed by pirates on the Adriatic coast in 1177.[40]

Later in the reign of William a monetary reform introduced a new system of account based on the tercenarius, i.e. *1/300th* of an ounce. The *tercenarius* was a money of account and the only new silver denomination in the new system was the quarta tercenarii *(Table 3)*. This was also progressively debased (its silver content of circa 20% in classes A and B, dropped to some 8% in specimens of class C).[41] In whole, this coinage seems to point to a shortage of silver, at least in the royal mint of Palermo where silver and billon coins were produced. The scarce and debased royal billon coinage, however, did not mean that billon was not used: foreign denari from the north were entering and circulating abundantly in southern Italy and in Sicily.[42]

Copper coinage

The first copper coinage of William II consisted of follari which followed the traditional pattern: at Messina bilingual follari, with Arabic and Latin legends, weighing c. 2 g, very common in finds; at Salerno follari as usual, but in much reduced number.[43]

The monetary reform of William II, together with the *tercenarius*, introduced new copper coins bearing a lion's head: one large follaro, legendless, bearing a lion's mask and a palm-tree, weighing about 12 g, and its fraction, bearing a lion's mask and a legend in Arabic *(al-malik Ghuliyalim al-thani)* weighing c. 2 g (possibly 1/6th).[44]

standards circulating in Ayyubid Egypt (1174–1250): in commenting the list in 1954, Ehrenkreutz read *dukiya* and *turiya* dinars, as both referring to Sicilian taris, but of a slightly different exchange rate to the dirham. Ehrenkreutz supposed that the difference was in their respective standard of purity; since the fineness remained unchanged, could the difference be due to a different weight standard? Bates, however, gave a different interpretation of the passage, rejecting the reading as *turiya* altogether; Ehrenkreutz, Standard (note 22), p. 163; M. Bates–D.M. Metcalf, Crusader Coinage with Arabic Inscriptions, in: History of the Crusades (Kenneth M. Setton, ed.) vol. VI: The impact of the crusades on Europe (Harry W. Hazard and Norman P. Zacour eds) (Madison Wi. 1989), pp. 421–482, at p. 445 note 72.

[39] P. Serafin Petrillo–L. Travaini, Le monete argentee dei normanni di Sicilia nella collezione di Vittorio Emanuele III di Savoia, Bollettino di Numismatica 6–7, 1986, pp. 113–114; Travaini, La monetazione (note 1), pp. 228–230.

[40] D. M. Metcalf, Coinage in South Eastern Europe 820–1396 (London 1979), p. 180: the list mentioned *masmutine, oboli masmutini, sterlingi, megulienses, igeunos, provinos, puglios, oboli megulienses, tarreni.*

[41] Serafin Petrillo–Travaini (note 39), pp. 113–114; Travaini, La monetazione (note 1), pp. 228–230.

[42] For foreign denari in the Regno cf. Travaini, La monetazione (note 1), p. 392, and L. Travaini, Produzione e distribuzione dei denari svevi e angioini nel Regno di Sicilia alla luce dei rinvenimenti, in: Settlement and economy in Italy 1500 BC to AD 1500, Papers of the fifth conference of Italian Archaeology (Oxford 1995), pp. 603–614.

[43] Travaini, La monetazione (note 1), p. 321: the reduced role of copper coinage at Salerno was probably due to inflation as well as to the devaluation of billon coins, included foreign denari which became more common in circulation from the 1180s.

[44] See Travaini, La monetazione (note 1), pp. 318–20, and Travaini, Aspects (note 18).

The large denomination had often been a puzzle to numismatists, because it seemed odd to have a large and heavy copper coin, long after the large Byzantine folles had been abolished from circulation in the Kingdom, and the current copper coins were of c. 2 g.[45] However it is certain that the larger copper denomination belongs to William II. The reintroduction of a large copper coin in the 1180s can be considered as an attempt to limit the consequence of a silver shortage, and therefore William's reform can be compared to the Augustan reform of 27 B.C., when Augustus transformed the sestertius from a silver coin of less than 1 gramme, into a heavy coin of orichalcum, of over 25 g.[46]

William's copper coins with the lion's mask are commonly found in Sicily, and a number of them have been also found in the East, at Acre, Caesarea and Tyre.[47] At that time in Asia Minor Turcoman rulers such as the Zengid Atabegs of Mosul and the Atabegs of Mardin issued copper coins named "dirhams" of the same size and weight as the Byzantine folles, and thus similar to the large Norman follari with the lion's mask.[48]

The Turcoman copper coinage might indeed have been a model for the new copper coinage of William II. A link between Turcoman coinage and Sicily is the find in the island of a number of these copper dirhams. One of these is a Byzantine follis of Constantine X (1059–67) and Eudocia with the Arabic countermark "atabeg", belonging to the Mosul Zengids Qutb al-din Maudud (AH 544–65/1149–70) or Sayf al-din Ghazi II (565–76/1169–80).[49] Three other *dirhams* of Mardin belonging to Husameddin Yuluk 'Arslan (1184–1200), and to 'Urtuq 'Arslan (1200–39) were found at Messina, and are of the following types: of Husameddin, the first one bears a laureate head left and a crowned bust facing on obverse, and Arabic legend on four lines on reverse; the second one four figures on obverse (interpreted by some as a "mourning scene" and by others as a group with a philosopher and disciples) and Arabic legend on three lines with date 589 H/1189; of 'Urtuq 'Arslan one dirham with laureate head on obverse and Arabic legend on four lines on reverse.[50] These finds invite to look more carefully at the links between Sicily and the Turcoman states. The large copper follari of William II seem to be really inspired by them, although they did not last as long as the copper *dirhams*. Tancred issued only a small follaro in Sicily.

[45] For a discussion on the use of folles in Norman Italy and on their abolition and supposed identification with romesine, cf. Travaini, La monetazione (note 1), pp. 394, 295–299, and above note 7.

[46] A. M. Burnett–P.T. Craddock–K. Preston, New light on the origins of orichalcum, Proceedings of the 9th International Congress of Numismatics, Berne, Sept. 1979, ed. T. Hackens–R. Weiller (Louvain-la-Neuve–Luxembourg 1982), I, pp. 263–268.

[47] And a Sicilian follaro of his first coinage was found at Aleppo: cf. Travaini, La monetazione (note 1), pp. 383–384.

[48] S. de Turkheim, Un exemple d'imitation dans le monnayage de Guillaume II, roi de Sicile (1166–1189), in: Proceedings of the International Symposium on Contemporary Coin Imitation and Forgeries, ed. I. Gedai and K. Biró-Sey (Budapest 1980), pp. 217–221. Travaini, La monetazione (note 1), pp. 79 and 320.

[49] F. D'Angelo, Aspetti della vita materiale in epoca normanna in Sicilia (Palermo 1984), p. 52.

[50] D. Castrizio, Malik Urtuqidi, in: Roma e Bisanzio, Normanni e Spagnoli. Monete a Messina nella Collezione B. Baldanza, a cura di M. Caccamo Caltabiano (Messina 1994), pp. 53–55, nos 174–176. A further parallel with the Augustan reform is that the large Turcoman copper coins were called "dirhams", thus showing a "silver" origin.

The kingdom was using more and more billon denari coming from the north, which escaped all circulation controls. Billon coins were replacing copper coins in every-day use, and when Emperor Henry VI abolished the issue and circulation of copper in 1194, there seems to have been no great resistence: the economy of the kingdom had already adjusted to this change towards the use of western denari. It is worth noting that billon coins had become the standard coin in use in the Latin east as well, where local issues were initiated in the 1140s.[51] Not so in the Turcoman states, where copper *dirhams* remained in use much longer.

Date of the reform and conclusions

We do not know exactly when the *tercenarius* system was introduced. I suggested a date around 1180, and I originally supposed that the appearance of *tareni novi* from 1186 in Genoese documents could be related to the reform, which would have introduced a new weight standard for the Sicilian taris. The most recent analyses have proved that there was no debasement in the gold alloy during William's reign, as it was believed at an earlier stage of the research. How to interpret the *tareni novi* is the key problem: it is however difficult in my opinion to believe that the Genoese were suddenly paying attention to the designs of the taris, or to their "freshness", i.e. state of conservation. We know that taris of Roger I (c.1085–1101) were still circulating and hoarded at the end of the twelfth century, showing clearly how these coins were circulating by weight, their success being in the unchanged standard of alloy. At this point of the research I believe the Genoese reference might refer to a change in the weight standard, but there is more investigation to be done in many directions.

Oriental and Western relations

In the 1180s the Mediterranean policy of William II, having already consumed enormous sums of money, needed even more, for expeditions like that of 1185 to Thessalonika, and of 1187 to Tyre and Tripoli.

Besides this oriental policy, the same years saw the development of a new policy towards the German Empire, sealed in 1186 by the wedding between Henry VI and Constance; it was the latter policy which had the most relevant effect on the future of the Kingdom. The same we can probably say about the oriental and western aspects of William's monetary policy.

In spite of the oriental aspects of William's coinage (such as the abandonment of a weight standard in the individual taris, or the production of large copper coins, or the introduction of correct Arabic legends in the taris of Amalfi), the use of billon denari (not centrally controlled) and the possible introduction of a new weight standard for the Sicilian tari might be seen as important "western" signs. If the new weight standard of the tari of 0.88 g was introduced by William II, this standard would appear as a decisive link between the kingdom of Sicily and Genoa, and more generally the Italian communes: such links indeed were increased particularly from the 1180's.

[51] Cf. A. M. Stahl, The circulation of European coinage in the Crusader States, in: The meeting of two worlds: Cultural exchange between East and West during the period of the Crusades, ed. V. P. Goss, Studies in Medieval Culture 21 (Kalamazoo/Michigan 1986), pp. 85–102.

The monetary links with Genoa were reinforced in 1194, when Emperor Henry VI, preparing his expedition to Sicily, brought his silver to the mint of Genoa to have it struck in the form of Genoese denari.[52]

Short appendix: The origin of Gold coins at Genoa

Genoa created a coin of pure gold weighing 3.53 g, and its fractions of 1/4th, weighing 0.88 g, and 1/8th (0.44 g). Whilst the gold florin of Florence was certainly introduced in 1252, the chronology of Genoese gold coins is still debated: most scholars now believe that the first gold genovino was struck in 1252, a few months before the florin; other scholars, on the contrary, prefer to date the first Genoese gold coins from the early 13th century, if not before.[53] This is the subject of a complex debate and cannot be discussed here. However, it is possible to note a few metrologic aspects that can contribute to this debate.

The links between the weight of the Sicilian taris and the first Genoese gold coins have already been observed, e.g. by Lopez.[54] However, it has not yet been appreciated that such metrologic links exist only with the "new" weight standard of 0.88 g and not the Fatimid one of 1.05 g. The weight of 3.53 g of the first genovino was equal to that of four reformed Sicilian tari of 0.88 g. The date of the introduction of this weight in the Sicilian tari is an important key to the date of the first genovini, and there is a possibility that the change took place during the reign of William II. Although this may not give a decisive date to the *genovino*, it proves how metrology can positively help, and also how much more research is needed on the subject.

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[52] Liber iurium reipublicae Genuensis I, 958–1289, Historiae Patriae Monumenta VII (Torino 1854), c. 410.

[53] For the traditional chronology see G. Pesce and G. Felloni, Le monete genovesi (Genova 1975).

[54] Lopez (note 20).