

A Double Radiate of Florian

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THE COIN of Florian (c. April 276 – c. July 276) described below was purchased by myself from a dealer in 1997. Nothing else is known about its provenance.

Obv. **IMP C FLORIANVS AVG.** Radiate draped and cuirassed bust of Florian r.
Rev. **AEQVITAS AVG.** Aequitas standing left holding scales and cornucopia; in right field; **Γ**; in exergue, **XI**. Weight: 5.4g. Diameter: 23-23.8mm. Die-axis: 6h.



Fig. 1. (x 2)

On the face of it, the coin appears to be *RIC* V(1), 25, a radiate of the mint of Rome. However the only mintmark given for this entry is **XXI** (with the officina mark, **Γ**, in right field or right exergue), not **XI**. The other unusual feature is the weight of 5.4g, which is very heavy for a radiate.

Before discussing this coin further, and to put it into context, I outline what is known or surmised about coins with an **XI** mark.

During the reigns of Valerian I (253–260) and Gallienus (253–268), the radiate suffered severe debasement, so that by the time of Claudius II (268–270), coins of the western mints contained an average of approximately 3.3% silver,¹ and were of poor manufacture, doubtless a result of the need to produce an ever-increasing quantity of coins. The alloying of copper and silver is a complex subject, but it is sufficient to say that it is possible to artificially enrich the silver at the surface of a flan during manufacture and thus make the finished coin look more silver than it really is, and indeed this was what was done as the coinage became progressively de-based.² However, with the much lower overall silver levels during the period under discussion it would have been impossible to have produced silver-looking coins solely by this method and so it seems that some sort of external silver-coating was added to the flans (silvering).

Aurelian (270-5) introduced a reformed coinage. The new coins were of superior manufacture, contained nearly 5% silver, and mostly had the exergual inscription

¹ L.H. Cope, C.E. King, J.P. Northover and T. Clay, *Metal Analyses of Roman Coins Minted under the Empire* (British Museum Occasional Paper 120, 1997), pp. 142-6. The quoted section refers to the more recent work of King and Northover.

² H. Gitler, M. Pontin, *The Silver Coinage of Septimius Severus and his Family* (Glax 16; Milan 2003), pp 11-13

XXI³ (often with additional mint/officina identification letters). The value of the reformed coins in relation to other denominations is still a matter of debate, which need not concern us here. The meaning of the **XXI** mark has also been hotly debated, but can now be clarified, as we shall see.

It is against this background that the coins of Tacitus (275-6) with **XI** or **IA** (**XI** in Greek) in the exergue should be viewed. Only two types were issued, both from eastern mints. The examples shown below are in my collection, both having the obverse inscription **IMP CM CL TACITVS AVG**.

RIC V(1), 211, mint of Antioch. *Rev*: Emperor standing right holding sceptre, receiving globe from Jupiter standing left, holding sceptre; **CLEMENTIA TEMP**; in exergue **XI**; above exergual line, **A**. Weight: 3.8g. Diameter: 21.1 - 22.7mm (Fig. 2).

RIC V(1), 214, mint of Tripolis.⁴ *Rev*: Mars standing or walking left, holding olive branch and spear and shield; star in left field; **CLEMENTIA TEMP**•; in exergue **IA**.⁵ Weight: 4.0g. Diameter: 21.5 - 21.8mm (Fig. 3).



Fig.2 (x 2)



Fig. 3 (x 2)

Webb⁶ notes that these coins must have represented an increase in value as compared with the **XXI** coins (or its Greek equivalent, **KA**). He considered that **XXI** represented 1/20th of something (such as an aureus), so that **XI** represented 1/10th, a

³ Some coins of Gallienus and Claudius II were marked with Roman numerals, including **XXI**, but these were officina numbers and were not connected with the **XXI** marks of Aurelian. The reformed coins with the **XXI** mark are sometimes known as 'aureliani' (not a term attested in ancient sources), with the implication that they were worth more than the types without such marking, which seems unlikely since both types were of similar size, weight and appearance

⁴ The mint was opened by Aurelian and is normally identified with the Tripolis south of Antioch.

⁵ **XXI** also occurs on *RIC* 211 and **KA** on *RIC* 214. These coins are of the same weight and size as the **XI** and **IA** types.

⁶ *RIC* V(1), p. 13.

higher value. Also he felt it unlikely that an **XI** coin of a lower value than the **XXI** coin would be produced as it would have discredited the latter. Although Webb's conclusions have since been confirmed, the arguments whereby he came to those conclusions may have been different had he had more information regarding the silver content of the **XXI** and **XI** coins.

The silver content of various coins from Aurelian to Licinius was measured and published in 1979 by Callu, Brenot and Barrandon.⁷ They showed that the coins of Tacitus with the **XI** and **IA** types contained between 8.75 and 9.8% silver, as opposed to around 5% for **XXI** and **KA** coins. Testing was non-destructive, so there was a possibility that the results might be skewed by surface silvering, enrichment or uneven distribution of metal within the core of the coin. In an attempt to reach more accurate results, coins of the same type were tested by Esty, Equall and Smith⁸ using various non-destructive techniques to test for silver content within the core. The results showed that the amount of silver in different parts of the core did indeed differ greatly. The coins in this study were silvered to a greater or lesser degree and this has an impact on the overall silver content. Nevertheless the findings of Callu et al. were vindicated, even though the silver content of some coins were somewhat below the 8.75% mark.

As a visual comparison, Figure 2, my **XI** example, has a fairly silver-looking obverse, whereas the reverse is dull with some red oxide (normally associated with copper) in the field. Figure 3, my **IA** example, has a coppery colour on both sides with what look like streaks of silver. Copper and silver when heated to create an alloy tend to separate into individual domains⁹ and this is maybe what we are seeing here. It is unlikely that coins of around 9% silver content would have *looked* silver, even with surface enrichment, so it seems most likely that they were silvered in the same way as a normal radiate, with which they would have been compared.

On the basis of these results, Bourne¹⁰ argues that the marks **XI** and **XXI** do not represent a denominational value but rather an indication of the proportions of silver and base metal. The nominal figure of 9% silver for **XI** coins would be correct if the proportions were ten parts base metal to one part silver (rather than one part silver in ten overall). This seems to be borne out by a coin of Carus marked **E ET I**, of which more below. This sits happily with the idea that the **XXI** mark represents 20 parts of base metal to one of silver, since those coins normally contain slightly less than 5% silver. Indeed if **XXI** simply represented a denominational value, the value of an **XI** coin would be less, rather than more, which is unlikely.

If an **XXI** coin is regarded as a radiate, then the **XI** and **IA** coins must be double radiates.

We saw above that by the time of Claudius II, the silver content of the coins of the western mints had declined to an average of approximately 3.3% silver. However, although the silver content of the coins of Antioch declined as much as any other mint during the reigns of Valerian and Gallienus, by the time of Claudius it had bottomed out to about 10%.¹¹ In fact, not only did the coins still look like silver, but they were much better made, full-flan coins, compared with those of most other mints. Early coins of Aurelian at Antioch (mainly those with Vabalathus) also had a high silver

⁷ J.P. Callu, Cl. Brenot, J.N. Barrandon, 'Analyses de séries atypiques', *QT* 8 (1979), pp. 241-54.

⁸ W. Esty, N. Equall, R. Smith, 'The alloy of the 'XI' coins of Tacitus', *NC* 1993, pp. 201-4.

⁹ Gitler, Pontin, *The Silver Coinage of Septimius Severus and his Family* p. 11

¹⁰ R.J. Bourne, *NCirc* 1996, 'The XXI coinage of Aurelian et al', p. 84.

¹¹ Cope, King, Northover and Clay, *Metal Analyses*, p. 82, for graphs of silver content for each mint, with associated data on p. 147.

content. Perhaps it is not unreasonable to suggest that at Antioch the **XI** coins were simply a continuation of those had been minted there previously.

The next examples of coins with an **XI** theme are those of Carus (282 – 3) and his son Carinus as Caesar, minted at Siscia and Lugdunum. They are *RIC* V(2):

No. 99 Siscia. *Obv*: **DEO ET DOMINO CARO AVG** or **INVIC AVG**

Rev: Galley; **FELICITAS REIPVBLICAE**; in exergue, **•X•I•**, **•XXI•**, **•X•I•I**

No. 100 Siscia. *Obv*: **DEO ET DOMINO CARO INVIC AVG**

Rev: Fides holding two ensigns; **FIDES MILITVM**; in exergue, **•XII•**, **X•II**, **XI•I**

No. 194 Siscia. *Obv*: **M AVR CARINVS NOB CAES**

Rev: Felicitas; **FELICITAS REIPVBLICAE**; in exergue, **X•I**

No. 5, Lugdunum. *Obv*: **IMP C M AVR CARVS P F AVG**

Rev: Galley; **ABVNDANTIA AVG**; in exergue, **X•ET•I**

The last coin is particularly interesting as not only does the inscription explicitly state ‘Ten and One’, but the portrait of Carus on the obverse appears to be wearing a double radiate crown, implying that the coin is a double radiate and that it contains ten parts of base metal to one of silver. The other types have variations of **XXI**, **XI** and **XII**. The first two inscriptions are by now familiar, but the meaning of **XII** is unknown. However it appears have the same intended value as the **XI** coins as we shall see below. The meaning, if any, of the positioning of the pellets separating the letters remains a mystery.

Callu et al.¹² tested two examples of *RIC* 99, one of *RIC* 100 and one of *RIC* 5, as well as other types without the **XI** inscription, or with the **XXI** inscription. The results showed that the **XI** coins contained an average of 8.77% silver. Given the problems discussed above of ‘seeing’ into the cores of coins, it might be suspected that this value is slightly high. Nevertheless, the non-**XI** coins averaged around 4.27%, showing that, as with the coins of Tacitus, the **XI** coins were double the value of the **XXI** coins, on the basis of silver content. Although the exact marks of the coins tested are not given, the example of *RIC* 100, for which an **XII** combination is the only valid one, came out at a value of 8.1%, showing that it must have had the same value as the **XI** coins.

These are all rare coins, but the entry in *RIC* for no. 99 gives two examples at 5.16g and 4.67g, and the Classical Numismatic Group has one example in its archives of *RIC* 99 marked **•X•I•I** and weighing 4.56g¹³. These weights are certainly at the high end of the range for radiates. Webb¹⁴ states that their weight is about one third more than the average weight of ordinary radiates and concludes that because of the markings and the heavier weights they must have been tarified at a higher value than the normal radiates. Although *RIC* lists them as ‘Uncertain Denomination’ the results of Callu et al. shows them to be double radiates.

Examination of the new coin of Florian (Fig. 1) shows it to be made of base metal with patches of silver across the surface. The appearance is quite consistent with many other coins of the period that have been silvered but have lost some of their silver due to wear, burial or subsequent cleaning. The **XI** in the reverse exergue is very clear. It is possible that a die clog prevented a preceding **X** from being struck, but close examination shows no trace of this, the field being completely flat where another **X** might go. In addition the letters **XI** are tilted slightly, in such a way that an

¹² Callu, Brenot, Barrandon, ‘Analyses de séries atypiques’, p. 248-51.

¹³ <http://www.cngcoins.com/Coin.aspx?CoinID=54231>

¹⁴ *RIC* V(2), p. 125.

additional **X** would have had to have been placed across the exergual line to have been in line with the other two letters.

The weight of ordinary radiates in this period varied considerably, but a weight of 5.4g for this coin is still very high, compared with the average for a radiate of about 4.0g.¹⁵ Indeed this is much higher than the Carus **XI** coins.

The conclusion to be drawn is that this coin is indeed a double radiate, which would, as far as I know, make it unique. Florian, the half-brother of Tacitus, ruled for only three months and his coins are quite rare; it should be no surprise that no examples of the new denomination had turned up before. Cohen¹⁶ includes **XI** on his list of mintmarks for Florian, but did not of course show which mint-marks applied to which coin.

It is assumed that the new coin is from Rome, because that is where the Aequitas types were produced, although Lugdunum did produce an Aequitas type with **III** in the exergue and a different obverse legend. It was certainly not minted in Antioch because Probus seized that city before Florian could reach it. It would seem that Florian took Tacitus' double radiate as a model and increased its weight. The Clementia Temp coins of Tacitus were produced both with the **XI** mark and the **XXI** mark. Both types were silvered and were of the same size and weight. They did, and often still do, look identical, apart from the extra **X**. The extra weight and size would have made the Florian coin more obviously valuable. It was this heavier coin that was passed on to Carus. Numismatists have long suspected that double radiates would have been issued between the reigns of Tacitus and Carus. With an example now extant from the reign of Florian, only Probus remains without an identified example of this denomination.

¹⁵ Sylvia Estiot, *Tacito e Floriano*, Vol. II/2 (Verona, 1987), nos 2510-2516. These seven examples of Florianus Rome Aequitas types (all with XXI) have weights of 2.98, 3.63, 3.77, 4.19, 4.66, 4.75, 5.16g. The weights vary considerably, but the average is 4.06g.

¹⁶ Cohen, Vol 6, p. 240.