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## A DIE STUDY OF THE YEAR 21 GOLD COINS OF KHUSRO II (590–628)<sup>1</sup>

### ДОСЛІДЖЕННЯ КАРБУВАННЯ ЗОЛОТИХ МОНЕТ 21-ГО РОКУ ПРАВЛІННЯ ХОСРОВА II (590-628 РР.)

#### *Abstract*

*This paper discusses two denominations of gold coins struck by the Sasanian king of kings, Khusro II (590–628). They both have the same design. On the obverse is the profile head of the king facing right, similar to that found on the silver but without the marginal stars and crescents. The legend on the left is the same as that on the drachms but there is a longer legend on the right so the whole legend reads: ‘Khusro king of kings has increased the royal glory’. On the reverse there is a facing bust with the head surrounded by flames, similar to that seen on some ‘special’ issue silver drachms. There have been a number of different identifications of this bust, the most plausible being that it is the personification of xwarrah, the ‘Royal Glory’, a concept that was very important to Khusro II. There is no mint on these gold coins but there is a date, regnal year 21 (610/11), on the left. On the right the legend reads: ‘he (= Khusro II) has increased Ērān, he is well-omened’.*

*Gold coins were struck in small quantities by most Sasanian kings. It appears to have been mostly a ceremonial coinage, with only Shapur II (309–79) and Peroz (459–84) striking larger amounts. Khusro II’s gold coinage is relatively plentiful when compared to that of other late Sasanian rulers. Khusro II’s predecessor, Hormizd IV (579–90), struck no gold coins and only five coins of Khusro I (531–79) have been recorded. The usurper Vahran VI (590–1) is the sole other late Sasanian king whose gold coins have survived in comparatively large numbers.*

*The larger of Khusro’s two denominations, the heavy (or 1½) dinar, is known from three specimens, plus another which has been over-struck as an Ilkhanid dinar of Abu Said (1316–35). The smaller denomination, the light (or 1) dinar, is more plentiful with over 50 coins recorded. The year 21 gold coinage was struck using three obverse*

<sup>1</sup> These coins will be discussed in more detail in Tyler-Smith, forthcoming.

and three reverse dies, one pair of dies being used for both the heavy and light dinar coins. Two obverse and reverse dies were used together but the third pair has not yet been linked to them. As light dinars of Khusro II are regularly seen in commerce this picture may change.

The gold coins have been listed and the source of each coin noted (Table 1). All the dies have been identified, and the available physical information, weight, diameter and die axis, has been added. The result shows that two pairs of dies were used to strike 42 out of the 53 light dinars and also the three heavy dinars. The other die pairings struck many fewer coins: one pair struck eight coins, one pair struck two coins and one pair struck one coin.

A number of the coins are double struck on both obverse and reverse and one reverse die has a flaw across the neck and shoulder of xwarrah (reverse die 1). Die flaws and double striking are frequently seen on the drachm coinage and it is evident that the mint did not take especial care when producing the gold.

The average weight of the light or 1 dinar coins is 4.56 grams (with a mean of 4.57 grams). The average of the four heavy dinars is about 6.73 grams but with so few coins one cannot arrive at any definitive result regarding the weight. The relationship between these two denominations is not clear ( $4.57\text{g} \times 1\frac{1}{2} = 6.855\text{g}$ ). The diameters of the light dinars vary between 21.3 and 23.5 millimetres (from 16 specimens). The diameters of the heavy dinars are similar, as one would expect, varying between 22 and 22.7 millimetres. The exception is the over-struck coin which is larger.

### **Key words**

Sasanian, Khusro II, gold coins, dinars, die study, xwarrah

### **Анотація**

У цій статті розглядаються золоті монети двох номіналів, викарбувані сасанідським царем царів Хосровом II (590–628 рр.). Обидві монети мають однаковий дизайн. На аверсі – профільна голова царя, звернена вправо, подібна до тієї, що зображена на срібній монеті, але без крайніх зірок і півмісяців. Легенда ліворуч така ж, як і на драхмах, але праворуч вона довшіа, тому прочитується повністю: «Хосров, цар царів, примножив царську славу». На реверсі зображено погруддя з головою, яка оточена полум'ям, подібно до того, що можна побачити на деяких «спеціальних» срібних драхмах. Існує низка різних ідентифікацій цього погруддя, найбільш правдоподібною виглядає версія, що це уособлення хwarrah – «царської слави», – концепції, яка була дуже важливою для Хосрова II. На цих золотих монетах немає даних монетного двору, але ліворуч стоїть дата – 21-й рік правління (610/11). Праворуч міститься легенда: «Він (Хосров II) збільшив Еран, він добре озброєний».

Більшість сасанідських царів карбували золоті монети в невеликій кількості. Схоже, що це були, переважно, церемоніальні монети, і лише Шапур II (309–379) та Пероз (459–484) карбували їх у більшій кількості. Карбування золотих монет у роки правління Хосрова II є досить чисельним порівняно з їх карбуванням під час перебування на престолі інших пізньосасанідських правителів. Попередник Хосрова II, Ормізд IV (579–590), не карбував жодної золотої монети, а за часів Хосрова I (531–579) зафіксовано лише чотири монети. Узурпатор Бахрам VI (590–591) – єдиний пізній сасанідський цар, чії золоті монети збереглися у порівняно великій кількості.

Більший з двох номіналів Хосрова II, важкий (або 1½) динар, відомий за трьома екземплярами, плюс ще один, який був перекарбований як ільханідський динар Абу Саїда (1316–35). Менший номінал, легкий (або 1) динар, більш поширений, – зафіксовано понад 50 монет. Золоті монети 21 року карбувалися трьома аверсними і трьома реверсними штампами, причому одна пара штампів використовувалась як для монет важкого, так і легкого динару. Дві пари аверсів та реверсів використовувалися разом, але третя пара ще не була пов'язана з ними. Оскільки легкі динари Хосрова II регулярно з'являються на монетному ринку, ця картина може змінитися.

Золоті монети перераховано із зазначенням джерела кожної монети (Таблиця 1). Усі матриці ідентифіковано, також додана доступна фізична інформація щодо ваги, діаметра та осі матриці. Результат показує, що дві пари штампів використовувалися для карбування 42 з 53 легких динарів, а також трьох важких динарів. За допомогою інших пар матриць відкарбовано набагато менше монет: однією парою відкарбовано вісім монет, ще однією парою – дві монети та одну монету – окремою парою матриць.

Деякі монети мають подвійне карбування як на аверсі, так і на реверсі. Один реверсний штемпель має дефект на шийі та плечі хварри (реверсний штемпель 1). Дефекти штемпелів та подвійне карбування часто зустрічаються на драхмових монетах. Очевидно, монетний двір не особливо ретельно ставився до виробництва золота.

Середня вага легких монет, або монет номіналом 1 динар, становить 4,56 г (при середньому значенні – 4,57 г). Середня вага чотирьох важких динарів становить близько 6,73 г. Проте при такій малій кількості монет не можна зробити остаточного висновку щодо ваги. Співвідношення між цими двома номіналами не є чітким ( $4,57 \text{ г} \times 1\frac{1}{2} = 6,855 \text{ г}$ ). Діаметр легких динарів коливається від 21,3 до 23,5 мм (із 16 зразків). Діаметр важких динарів, як і слід було очікувати, подібний і коливається між 22 і 22,7 мм. Виняток становить надкарбована монета, яка має більші розміри.

*Ключові слова:* Сасаніди, Хосров II, золоті монети, динари, итемпельне дослідження, хварра.

The Sasanian king, Khusro II (590–628) struck coins in gold (usually called dinars), silver (usually called drachms) and copper. His silver coinage was struck, and survives, in very large numbers. It is known for every year of his reign with up to 33 mints, located in all parts of the empire, striking in any one year. Only small numbers of his copper coins survive today and it is difficult to judge how large the original issue was. Where the mint on the copper can be read, it is usually located in the western part of the empire.

Gold was struck in small quantities by most Sasanian kings. Mostly, it appears to have been a ceremonial coinage rather than a functional part of the monetary system.<sup>2</sup> Only two kings struck a relatively large gold coinage: Shapur II (309–79) and Peroz (459–84).<sup>3</sup> The issue of Khusro II's gold coinage was larger than that of any other late Sasanian king. His father, Hormizd IV (579–90), struck no gold coins while only five gold coins are known of his grandfather Khusro I (531–79).<sup>4</sup> The two usurpers who seized the throne early in Khusro II's reign both struck gold. The gold of Vahran VI (590–1) is comparatively common but a sole gold coin of the usurper Vistahm is known.<sup>5</sup> Of his successors, gold is only known for Queen Buran.

Khusro II struck gold in two denominations and with three different designs. Two of these designs are each represented by one unique dinar. One of these is dated year 33 (622/3) the other year 34 (623/4).<sup>6</sup>

The coins with the third design are the subject of this paper. They were struck in two denominations, called heavy and light dinars or 1½ and 1 dinars. All are dated year 21 of Khusro II's reign (610/11). Three examples of the heavy dinars are known, plus another example which has been over-struck as an Ilkhanid dinar of Abu Said (1316–35).<sup>7</sup> The dinars are more common, with over 50 specimens known.

This die study looks at all the coins it has been possible to trace. There are a few where the only available illustration is too poor for definite die identification and these have been omitted. Further examples of these dinars regularly appear on the market so the pattern of die use may change with obverse die 2 and reverse die 3 linked to the other dies (see below).

<sup>2</sup> Schindel 2006.

<sup>3</sup> A large number of gold coins of Shapur I (241–72) have recently appeared on the market, struck from a large number of dies. It is difficult to estimate the size of this coinage as some of the coins appear to be modern forgeries.

<sup>4</sup> Schindel 2022.

<sup>5</sup> Gyselen 2004, pp. 86–87, nos 89–92 (Vahran VI); no. 93 (Vistahm) = Mochiri 1983, fig. 67.

<sup>6</sup> Both coins have been published many times. See for example for year 33: <http://www.smb-digital.de/eMuseumPlus?service=ExternalInterface&module=collection&objectId=2357527&viewType=detailView>; Paruck 1924, p. 389 and pl. 21, no. 460. For year 34 see: *Splendeur* 1993, p. 300, no. 186; Paruck 1924 (Bartholomaei collection), p. 477 and pl. 24, no. 45.

<sup>7</sup> Peus auction 368 (25 April 2001), lot 403 = Nelson 2011, p. 379, no. 987 = New York Sale, auction 37 (5 January 2016), lot 639.

*The obverse design.* The obverse shows the bust of the king with a profile head wearing a winged crown, to the right, similar to that seen on the silver drachms but with an extra pair of ribbons flowing from the back of the diadem. The design and legends are surrounded by one circle. There is no border outside this circle and therefore no space for the marginal stars and crescents seen on the drachms.

*The obverse legend.* The obverse has a longer legend than that seen on the drachms. On the right the legend reads: *hwslwy MLK 'n MLK* 'Khusro king of kings' which is not found on the 'regular' silver types.<sup>8</sup> On the left is the normal legend seen on the silver, *GDH 'pzwt*, so the whole obverse legend can be translated as 'Khusro king of kings has increased the royal glory'.

*The reverse design.* The reverse is totally different from the usual fire altar and attendants which had appeared on the reverse of most Sasanian coins since the reign of Shapur I (241–72). It depicts a facing bust and head, with the head surrounded by a flaming halo. This flaming bust was also used on drachms of 'special' types dated years 21, 23, 26, 27, 28, 36 and 37. No other king used this design. The identification of the bust has been much discussed with a number of different identifications suggested. It is now thought to personify *xwarrah* the 'Royal Glory', a concept which was very important to Khusro II.<sup>9</sup>

*The reverse legend.* The reverse has a date on the left *y 'cwyst'* (*yāzwīst*) for regnal year 21 (610/11). On the right the legend reads *'yl 'n 'pzwt hwytk'* which can be translated as 'he (= Khusro II) has increased *Ērān*, he is well-omened'.<sup>10</sup> There is no mint abbreviation.

*Weights of the two denominations.* With only four specimens of the heavy or 1½ dinars one cannot make any definitive calculations, especially as some of the coins are worn and the over-struck coin is holed. The average weight of these four dinars is about 6.73 grams; the average of the light or 1 dinar coins is 4.56 grams (mean 4.57 grams). Since the weights of the heavy dinars are so variable the relationship between these two denominations is not clear ( $4.57\text{g} \times 1\frac{1}{2} = 6.855\text{g}$ ).

*Diameters of the two denominations.* The diameters of the heavy or 1½ dinars vary between 22 and 22.7 millimetres.<sup>11</sup> This is similar to that of the dinars, as one would expect as they are struck with the same dies. The diameter of the latter is available for 16 specimens only and ranges from 21.3 and 23.5 millimetres.

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<sup>8</sup> Göbl 1971 uses the terms 'regular' and 'special' for coins of the normal designs and those with an unusual design respectively, see pp. 19–21 for his definition, and tables I–XII for the division of types. I use the terms here for convenience.

<sup>9</sup> See Gyselen 2000.

<sup>10</sup> Gyselen 2004, pp. 65 and 86, nos 94 and 95 (year 21 gold); pp. 65 and 127, no. 277 (year 23, silver).

<sup>11</sup> The over struck coin is larger at 26mm, presumably because the extra pressure from the new dies made the flan spread.

<i>Source</i>	<i>Wt (g)</i>	<i>Diam. (mm)</i>	<i>Die axis (h)</i>	<i>Die no. - obv.</i>	<i>Die no. - rev.</i>
<b>Paris, AF. Sas.1</b>	<b>6.64</b>	<b>22</b>	<b>6</b>	<b>1</b>	<b>2</b>
<b>London, BM 1923,1105.58</b>	<b>6.56</b>	<b>22</b>	<b>5</b>	<b>1</b>	<b>2</b>
<b>Berlin, 450/1911</b>	<b>6.48</b>	<b>22.7</b>	<b>2</b>	<b>1</b>	<b>2</b>
<b>Peus auction 368 (25 April 2001), lot 403 (over-struck)</b>	<b>7.23</b>	<b>26</b>	<b>3</b>	<b>?</b>	<b>?</b>
VCoins Pars					
(21 November 2019) PCW-S1663	4.62	22	nr	1	2
Münz Zentrum auction 117					
(10 September 2003), lot 124	4.61	nr	nr	1	2
Oslo Mynthandel auction 18					
(14 March 1987), lot 1100	4.61	nr	nr	1	2
Giessener auction 90					
(12 October 1998), lot 511 =					
Lanz auction 102 (28 May 2001), lot 333 = UBS auction 55					
(16 September 2002), lot 1778	4.60	nr	nr	1	2
Hess Divo auction 340					
(1 June 2022), lot 52	4.60	nr	nr	1	2
Album auction 35					
(12 September 2019), lot 722	4.59	nr	nr	1	2
Künker auction 67					
(9 October 2001), lot 516	4.59	nr	nr	1	2
Glendining's auction					
(13 December 1963), lot 362	4.58	nr	nr	1	2
CNG auction 100					
(7 October 2015), lot 191	4.58	22	3	1	2
Hess Divo auction 330					
(21 May 2016), lot 17	4.58	nr	nr	1	2
Hirsch auction 306	4.58	nr	nr	1	2

(12 February 2015), lot 1958, ex M.G. Erworben before 1974 NAC auction 132 (30 May 2022), lot 383	4.58	nr	nr	1	2
Mitchiner 1978, no. 1107 = Spink auction (12 October 1993), lot 455	4.57	nr	nr	1	2
VCoins Pars (1 April 2015) Paris, 1973.1.339, collection Henry Seyrig	4.57	22	nr	1	2
Gyselen 2004, no. 95	4.57	23	3	1	2
Superior auction (7 June 1987), lot 4234	4.57	23	2	1	2
CNG Triton auction 4 (5 December 2000), lot 337	4.56	nr	nr	1	2
Griffterrec = SNS Schaaf 664	4.56	22	3	1	2
ANS, no. 1953.101.2	4.56	22	3	1	2
Gorny & Mosch auction 130 (8 March 2004), lot = Mosig-Walburg 2006–7, pp. 110–12	4.56	22	3	1	2
Münz Zentrum auction 69 (12 September 1990), lot 752	4.52	22.37	nr	1	2
Spink Taisei auction 5 (3 July 1988), lot 481 (4.47g) = NFA, NY auction 30	4.51	nr	nr	1	2
(8 December 1992), lot 165 = Tkalec auction (28 October 1994), lot 130 = Künker auction 318					
(11 March 2019), lot 798	4.48	nr	nr	3	2
Künker auction 104 (27 September 2005) lot 332	4.58	nr	nr	3	1
Vinchon auction (25 May 1998), lot 72 = MDC Monaco auction 3	4.58	22.5	2	3	1

(1 December 2017), lot 168 = MDC Monaco auction 6						
(29 October 2020), lot 84 (4.56g) Peus auction 336						
(28 April 1993), lot 161 = Peus auction 368						
(25 April 2001) lot 399 = Numismatica Genevensis auction 2						
(18 November 2002), lot 69 (4.59g) Vinchon auction	4.58	nr	nr	3	1	
(25 May 1998), lot 72 Nelson 2011, no. 986 =	4.58	nr	nr	3	1	
New York Sale, auction 37						
(5 January 2016), lot 638 Stacks auction	4.56	nr	nr	3	1	
(12 January 2009), lot 2196 = CNG auction 81 (20 May 2009), lot 748	4.55	nr	3	3	1	
Ira and Larry Goldberg auction 46 (26 May 2008), lot 62	4.53	nr	nr	3	1	
Pars PCW-S209 Glendining's auction	4.53	nr	nr	3	1	
(4 October 1957), lot 202 New York Sale auction XLII	4.55	nr	nr	1	1	
(9 January 2018), lot 398 ANS, no. 1960.10.1	4.54	nr	nr	1	1	
Sellwood, Whitting, Williams 1985, no. 60 = Barber BIRBI-S0526	4.61	23	3	2	3	
Malek 2002, no. 27 = Malek 2019, fig. 1.9, p. 6 = Johnson 555517	4.59	23.5	3	2	3	
NCirc CII.3 (3 April 1994), no. 2055	4.59	nr	nr	2	3	
	4.57	nr	nr	2	3	



Giessener auction 22

(25 May 1982), lot 238 = Giessener  
auction 60 (5 October 1992),

lot 293a = Giessener auction 69

(18 November 1994), lot 463 4.57 nr nr 2 3

Paris, 1973.1.340, Sass. 10 4.57 22 3 2 3

Peus auction 282

(30 October 1973), lot 590 4.56 nr nr 2 3

Gyselen 2004, no. 94 4.56 21.3 2 2 3

CNG 65 Triton 7

(12 January 2004), lot 661 4.55 nr nr 2 3

*NCirc* CI.1 (February 1993), no. 25 4.55 nr nr 2 3

Tkalec auction

(9 May 2005) lot 108 4.55 nr nr 2 3

FM CM.1-1954 ‘from a find in Syria’,  
ex Kapamadji 4.55 22 3 2 3

Mochiri 1983, p. 35, j (fig. 916),

Mochiri collection nr nr nr 2 3?

MDC Monaco auction 7

(12 June 2021), lot 10 4.53 22.6 3 2 3

Lanz auction 161

(7 December 2015), lot 170 4.51 nr nr 2 3

Lanz auction 166

(11 June 2018), lot 77 4.51 nr nr 2 3

CNG Triton 22

(7 January 2019), lot 485 =

Nomos auction 21 (21 November  
2020), lot 264 (4.55g) = MA Shops  
CDMA (15 August 2021) (22.5mm,  
4.53g) = NumisCorner

(9 August 2021) (22.5mm) 4.50 23 3 2 3

Sotheby auction (16 April 1985), lot 371 = Johnson 500053	4.49	nr	nr	2	3
Johnson 500590	nr	nr	nr	2	3
Schulman NY auction (17 January 1963), lot 31	nr	nr	nr	2	3

**Table 1. The heavy (or 1½) dinars (bold) and light (or 1) dinars**

*Notes to the table:* coins are grouped according to their obverse and reverse die numbers, then in descending order of weight. If different weights or diameters have been recorded for the same coin, these are noted in the first column. References to each coin are given in chronological order, with the oldest first. See below for full names of auction houses etc. For auctions, the first day of the sale is given; for web images, the date when the image was downloaded from a website is given.

nr = not recorded.

*Dies of the two denominations.* A total of three obverse and three reverse dies were used to strike both issues: the heavy and light dinars.<sup>12</sup> The heavy dinars were struck using one pair of dies (see Table 2). These same dies, plus two more obverse and reverse dies were used for the light dinar issue.

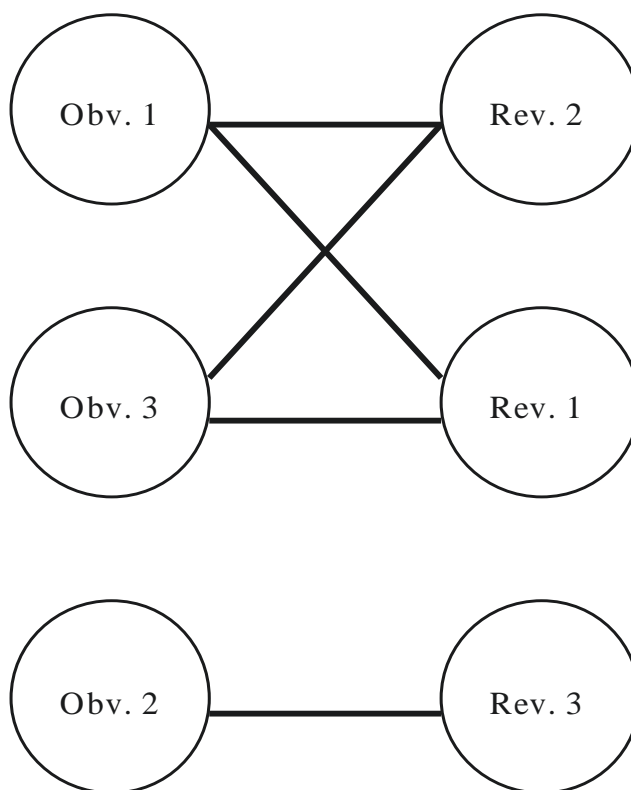
<i>Obv. die no.</i>	<i>Rev. die no.</i>	<i>No. of coins: light dinars + heavy dinars</i>
1	2	22 + 3
3	2	1
3	1	8
1	1	2
2	3	20

**Table 2. Die combinations of the light and heavy dinars<sup>13</sup>**

Two obverse and two reverse dies were used together to strike light and heavy dinars, but the third pair of dies, used for light dinars only, has not yet been linked to these. This pattern of die use suggests that the issue of heavy dinars was closely interlinked to that of the light dinars.

<sup>12</sup> The dies of some coins cannot be identified for certain and have been omitted from this study. An example is Mitchiner 1978, no. 1108 which may be struck from a different reverse die from those already identified, but unfortunately the illustration is too poor to be certain.

<sup>13</sup> Although the weights of three dinars were not available, the dies of 53 light dinars and three heavy dinars were identified.



**Fig. 1.** Obverse and reverse die linking

The three obverse dies are easy to distinguish from each other. The variable features are, first, the position of the star and crescent to the right of the wings of the crown. On two dies (obv. 1 and obv. 3) it is placed at the beginning of the legend *hwslwy MLK'n MLK'*, while on the third die (obv. 2) it is above this legend (i.e. to the left of the legend as you look at it). The second variable feature is the position of the star behind the king's crown. On two dies (obv. 1 and obv. 2) it is above the back merlon and under the legend *GDH*, while on the third die (obv. 3) it is higher up between the left wing of the crown and the start of the legend *GDH*. This makes it very easy to distinguish these three dies from each other. Presumably the engraver was allowed some discretion about the position of these elements.

The reverse dies are very similar to each other with only minor differences which enable one to distinguish them. It is interesting to note that reverse die 1 has a flaw extending across the neck to the shoulder of *xwarrah* but nevertheless continued to be used. This flaw can be seen on all specimens so far traced. There is also die damage near the start of the date at the top left on two dies (rev. 1 and rev. 3). These die flaws, and the double striking one sees on both the obverse and reverse, indicate that the mint did not take especial care when striking this gold coinage. Both die flaws and double striking are commonly seen on Khusro's silver coinage.

## Illustrations

Figs 2 to 7 reproduced at approximately 2x life size



**Fig. 2.** Heavy dinar: dies obverse 1, reverse 2. 6.48g, 22.7 mm, 2 h  
(Berlin no. 450/1911)



**Fig. 3.** Light dinar: dies obverse 1, reverse 2. 4.57 g, 22 mm  
(V Coins Pars, 1 April 2015)



**Fig. 4.** Light dinar: dies obverse 3, reverse 2. 4.48 g

(Spink Taisei auction 5 (3 July 1988), lot 481 (4.47g) = NFA, NY auction 30 (8 December 1992), lot 165  
= Tkalec auction (28 October 1994), lot 130 = Künker auction 318 (11 March 2019), lot 798



**Fig. 5.** Light dinar: dies obverse 3, reverse 1. 4.56 g

(Nelson 2011, no. 986 = New York Sale, auction 37 (5 January 2016), lot 638)



**Fig. 6.** Light dinar: dies obverse 1, reverse 1. 4.54 g

(New York Sale auction XLII (9 January 2018), lot 398)



**Fig. 7.** Light dinar: dies obverse 2, reverse 3. 4.55 g  
(CNG 65 Triton 7 (12 January 2004), lot 661)

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**WORKS CITED, AUCTION HOUSES, ETC. IN TABLE 1**

Web addresses are only cited for web-only businesses.

**Album** = Stephen Album Rare Coins (Santa Rosa, CA)

**ANS** = American Numismatic Society, New York, followed by the accession number of the coin

**Barber BIRBI** = The Barber Institute of Fine Arts, University of Birmingham, followed by the accession number of the coin

**Berlin** = Staatliche Museen zu Berlin, followed by the accession number of the coin

**CDMA** = Comptoir des Monnaies (dealer listing coins on MA Shops website:  
<https://www.ma-shops.com/cdma/>)

**CNG** = Classical Numismatic Group (Lancaster PA / London) ('feature' and e-auctions)

**CNG Triton** = Classical Numismatic Group (Lancaster PA / London) (sometimes held in conjunction with other auction houses)

**FM** = Fitzwilliam Museum, Cambridge, followed by the accession number of the coin

**Giessener** = Giessener Münzhandlung (Munich)

**Glendining's** = Glendining's (London)

**Gorny & Mosch** = Gorny & Mosch (Munich)

**Griffterrec** = [http://www.griffterrec.rasmir.com/sasania/sas\\_khuII\\_1.html](http://www.griffterrec.rasmir.com/sasania/sas_khuII_1.html)

**Gyselen 2004** = Gyselen, Rika, "New evidence for Sasanian numismatics: the collection of Ahmad Saeedi", *Res Orientales XVI. Contributions à l'histoire et la géographie historique de l'empire Sassanide*, 2004: 49–140

**Hess Divo** = Hess Divo AG (Zürich)

**Hirsch** = Gerhard Hirsch Nachfolger (Munich)

**Ira and Larry Goldberg** = Ira and Larry Goldberg Coins & Collectibles (Los Angeles CA)

**Johnson** = Johnson Collection, followed by the photographic number of the coin

**Künker** = Fritz Rudolf Künker GmbH & Co. KG (Osnabrück)

**Lanz** = Numismatik Lanz (Munich)

**London BM** = British Museum, London, followed by the accession number of the coin

**Malek 2002** = Malek, Hodge Mehdi, "The Sasanian king Khusrau II (AD 590–628) and Anāhitā", *Nāme-ye Irān-e Bāstān* 2: 23–40

**Malek 2019** = Malek, Hodge Mehdi, *Arab-Sasanian Numismatics and History during the Early Islamic Period in Iran and Iraq: The Johnson Collection of Arab-Sasanian Coins*, Royal Numismatic Society Special Publication no. 55. London: 2019

**MA Shops** = online marketplace: <https://www.ma-shops.com>

**MDC Monaco** = MDC Monnaies de Collection sarl (Monaco)

**Mitchiner 1978** = Mitchiner, Michael, *Oriental Coins and their Values. The Ancient and Classical World 600 B.C. – A.D. 650*. Hawkins Publications, Sanderstead: 1978

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**Münz Zentrum** = Münz Zentrum GmbH (Cologne)

**NAC** = Numismatica Ars Classica NAC AG (Zürich)

**NCirc** = *Numismatic Circular* (Spink, London)

**Nelson 2011** = Nelson, Bradley R., *Numismatic Art of Persia. The Sunrise Collection part I: Ancient – 650 BC to AD 650*. Lancaster PA / London: 2011

**New York Sale** = The New York Sale Group (New York)

**NFA** = Numismatic Fine Arts (Beverly Hill CA)

**Nomos** = Nomos AG (Zürich)

**NumisCorner** = NumisCorner (Lille), part of Comptoir des Monnaies (dealer listing coins on VCoins website)

**Numismatica Genevensis** = Numismatica Genevensis SA, Geneva

**Oslo Mynthandel** = Oslo Mynthandel (Oslo)

**Paris** = Bibliothèque nationale de France, Paris, followed by the accession number of the coin

**Pars** = Pars Coins (San Jose CA) followed by coin number (dealer listing coins on VCoins website: [https://www.vcoins.com/en/stores/pars\\_coins-121/ancient-coins/Default.aspx?](https://www.vcoins.com/en/stores/pars_coins-121/ancient-coins/Default.aspx?))

**Peus** = Dr. Busso Peus Nachf (Frankfurt am Main)

**Schulman NY** = Schulman Coin & Mint Inc. (New York)

**Sellwood, Whitting, Williams 1985** = David Sellwood, Philip Whitting, Richard Williams, *An Introduction to Sasanian Coins*. London: 1985



**SNS Schaaf** = Schindel, Nikolaus, *Sylloge Nummorum Sasanidarum. Schaaf.* Vienna:  
2014

**Sotheby** = Sotheby's (London)

**Spink** = Spink (London)

**Spink Taisei** = Spink Taisei Numismatics Ltd (Zürich)

**Stack's** = Stack's Bowers (Costa Mesa, CA)

**Superior** = Superior Galleries (Beverly Hills CA)

**Tkalec** = Tkalec AG (Zürich)

**UBS** = The Numismatic Department of UBS AG (Zürich)

**VCoins** = <https://www.vcoins.com/en/Default.aspx>

**Vinchon** = Jean Vinchon (Paris)