

# Sidon to Tyre: the Macedonian administration and relative chronology

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This essay summarizes the chronology of the dated Alexander tetradrachms of Sidon and Tyre (Ake of Newell and Price), including the implications of recent analysis of the Achaemenid dating era applicable to Tyre. It details a newly identified die link between the first issue of each mint, one that sheds light on the approach of the Macedonians to the establishment of a mint at Tyre following the successful siege of the city.

In recent years there has been a growing acceptance of the reattribution to Tyre<sup>1</sup> of Alexander the Great's coinage attributed to Ake by Newell and Price,<sup>2</sup> and the reattribution from Sidon to Tarsos of a group of gold staters (Price 3456-3466) that were formerly placed ahead of the dated tetradrachm sequence at Sidon.<sup>3</sup> These reattributions have implications for our understanding of the operation of the mints at Sidon and Tyre, and the relative chronology of the two dated series from these mints. The early Alexander coinage of Sidon and Tyre is dated according to an era that is specific to each city. That of Sidon is dated initially with Phoenician and then Greek letters. It commenced with year 1 in 333/2 BC,<sup>4</sup> the date of transfer of the city to Macedonian rule<sup>5</sup> after which Alexander the Great appointed Abdalonymos the king of Sidon.<sup>6</sup> After a few undated issues, that of Tyre was dated in Phoenician numerals according to an Achaemenid regnal era that commenced in 349 BC, associated with the reign of the vassal king Ozmilk (Azemilkos in Greek).<sup>7</sup> The Phoenician lunar calendar underpinning this dating era is incompletely understood. It is not known whether the regnal year began in Spring (March/April), or in Autumn (September/October),<sup>8</sup> nor is it known whether the era of Ozmilk was defined on the accession-year system, or dated from the first full year of the reign. These unknowns in the dating system of Tyre give rise to

<sup>1</sup> Lemaire (1976); Le Rider (2007):130-140.

<sup>2</sup> Newell (1916): 39-68; Price (1991): 405-414. Price (1991): 405-406 for a discussion of the Lemaire's proposal which Price rejected in favour of Newell's reasoning and attribution. Additional evidence has since accrued in favour of Lemaire's proposal. Regardless of opinion on the reattribution from Ake to Tyre, the die link described below and its relative chronological consequences remain.

<sup>3</sup> Le Rider (2007):134-139.

<sup>4</sup> Where applicable, dates are referenced to the Macedonian lunar calendar year, which commenced in the Autumn (September/October) of the Gregorian solar calendar year.

<sup>5</sup> Le Rider (2007): 116. It is debatable whether this dating system is based on the regnal years of Abdalonymos, or an era based on the defeat of Darius III by Alexander the Great at Issos in November 333 BC. Either inference is plausible, but the chronological consequence is the same.

<sup>6</sup> Curtius IV, I, 16-26; Justin XI, 10; Mørkholm (1991): 47 'In Phoenicia and Cyprus the cities were governed by local kings who were permitted to continue their reigns if they embraced the cause of Alexander, as most did. At Sidon a new king was appointed to replace a ruler with Persian sympathies. The cities were apparently exempted from the direct control of a provincial governor and left with a certain amount of autonomy in their internal affairs.' The local king was a vassal king with authority and responsibility similar to those of a satrap, or governor. In this capacity the local king was accountable to Alexander the Great, a small part of the latter's administrative apparatus.

<sup>7</sup> Elayi (2006): table 2, Elayi and Elayi (2009): 373-389 and 395 and Elayi (2018): 280-282 refined the understanding of the history and chronology of the kings of Tyre, strengthening the argument in favour of Lemaire's proposed reattribution of the dated Ake Alexanders to Tyre. They dated the start of the era of Ozmilk (Azemilkos) to 349 BC, with the 17th year of his reign coincident with 333 BC.

<sup>8</sup> Elayi and Elayi (2009): 373.

an irreducible uncertainty of at least  $\pm$  six months in any attempt to calibrate it to the Gregorian solar calendar, a point that must be borne in mind when seeking to reconcile the dated issues of Tyre with those of Sidon. Additionally, within this uncertainty and dependent on the variable timing of mintage of any issue within a single era year at Tyre, the dated issues of the latter could fall across different Macedonian years, although within a single Tyrian era year. This has been acknowledged incompletely by previous scholars who have sought a precise calibration between the dated eras of Tyre and Sidon, something which is impossible to achieve with the current state of knowledge. In contrast, we know that the Macedonian lunar year, on which the coinage of Sidon was dated, commenced in the Autumn (September/October) based on the accession-year system.<sup>9</sup> As a result, the dated Sidonian coinage provides the most certain chronological reference in the coinage of Alexander the Great.

Table 1 summarizes the chronology of the dated Alexander issues of Tyre and Sidon. It incorporates developments in understanding of the history and coinage of Tyre in the three decades since the publication of Price's compendium. The chronology of the dated Sidon coinage remains unaltered from that detailed by Price, while that of Tyre is updated by three years relative to Price's chronology based on his Ake attribution,<sup>10</sup> or two years relative to the chronology proposed by Merker, based on the assumed chronological correlation of the latest issues of each of the two dated series when found in various hoards.<sup>11</sup> With the up-dating of the Tyre series, some key events in the numismatic history of Sidon and Tyre now align more closely. The transition to the depiction of Zeus with crossed legs at each mint falls in consecutive years. Similarly, the last of the dated issues from each mint. The Ptolemaic intrusion into southern Phoenicia of 312/1 BC followed by the Antigonid recapture of the two cities the following year is closely accompanied by the adoption of a new dating era at Tyre. This is now reconciled to the adoption of the Antigonid era<sup>12</sup> in its eighth and later years during the final four years of Ozmilk's tenure, following the recapture and occupation of the city by Antigonos. Finally, the relationship between the dated Alexanders and the preceding shekels of Tyre marked with Ozmilk's initial (*ayin*) and dated regnal years 3-17<sup>13</sup> is readily explained. The latter are the Achaemenid era precursors to the dated Alexanders that commenced in era year 20 (330/29 BC).<sup>14</sup> It is inferred that the intervening two years that saw no dated coinage are associated with an interregnum in the incumbency of Ozmilk as the king of Tyre.

A newly identified obverse die link between the first of the Alexander issues of each mint further substantiates the relative chronology of the two coinages and improves our understanding of the earliest operation of the two mints under Macedonian control. The die link is illustrated on Figure 1. It extends and clarifies Newell's understanding that Sidon had to 'furnish both workmen and dies for a new mint. Die II of Ake [Tyre] was first cut and used at Sidon (here also die II) and then

<sup>9</sup> Le Rider (2007): 114-116.

<sup>10</sup> Price (1991): 406, table F, considered the first dated issue, year 20 issue of Ake [Tyre] to be equivalent to Macedonian year 327/6 BC.

<sup>11</sup> Merker (1964): 17, dated the year 20 emission of Ake [Tyre] to 328/7 BC based on the assumed contemporaneity of the latest dated issue of each of Sidon and Ake in each of four hoards (Saida, Demanhur, Byblos and Aleppo).

<sup>12</sup> Boiy (2000) has accurately defined the chronology of the dating eras of the various Macedonian kings and associated historical events in the period 330-301 BC based on the Babylonian cuneiform sources.

<sup>13</sup> Elayi and Elayi (2009): 373-389 and 395, Groups 11.2.1.14-11.2.1.28, catalogue numbers 887-1522 and Le Rider (2007): 130-134.

<sup>14</sup> Elayi (2018): 280-282.

transferred, in slightly worn condition, to Ake [Tyre]. The artist himself, who cut this die, came and worked for a while in his new home, cutting dies III, IV and V [and VI].<sup>15</sup> In consequence we find no more of his work at Sidon after one die (II) cut for the first issue of that city. Besides this die and its cutter, a second die, by another hand, was furnished by the Sidonian mint. Die I of Ake [Tyre] seems certainly to have been cut by the same hand as die I of Sidon. But in this case the artist simply furnished the die without coming to Ake [Tyre], for he continues to work at Sidon for several more years, while the die (I) furnished to Ake [Tyre] remains the sole representative of his handy-work in the coinage of this city.<sup>16</sup>




































The newly identified die link arises from the recognition of a previously unknown obverse die in the Sidon series (Figure 1a), one cut by the same engraver of Newell's Sidon die I, and a perfect match to Newell's *Dated Ake* [Tyre] die I (Figure 1b-f). Thus, the first die put into service at Tyre to strike the tetradrachm issue bearing a thunderbolt (*fulmen*) symbol on the reverse (Price 3238) was one that had been used previously to strike the first issue from Sidon (Price 3467). The Sidon issue carries the Phoenician letter 𐤑 (*sade*), the mint mark of Sidon, accompanied by the letter 𐤀 (*aleph*) denoting year 1 (333/2 BC) of the Sidon era under Alexander the Great. After light use at Sidon, the die was transferred, along with Newell's Sidon die II (Figure 2) to Tyre to strike the thunderbolt symbol issue.<sup>17</sup> The transfer of these dies marks the start of Macedonian mint operations in Tyre after the fall of the city to Alexander the Great in July 332 BC. The progression of wear on both dies demonstrates unequivocally that the Sidon issue preceded the Tyre issue. A general increase in die wear is evident across the transfer from one mint to the other, notably in the loss of detail of the trailing tufts of the mane of the lion skin. On the first of the two transferred dies (Newell's *Dated Ake* die I) the relative chronology of die use is readily established by the development of a linear die break extending from the base of the mane on the lion skin towards the folds in the lion skin behind the neck of Herakles on the coins struck at Tyre (Figure 1). The initiation point for this die break is a deeply engraved detail at the base of the mane, evident in its initial state on the strike at Sidon.

<sup>15</sup> Newell overlooked die VI in his text discussion of the matter, a point he rectified two years later in Newell (1918): 80-81, in his discussion of the Sidonian engraver's work at Tarsos.

<sup>16</sup> Newell (1916): 53.

<sup>17</sup> Newell (1916): 39.

**Table 1. Chronology: dated Alexander issues of Tyre and Sidon.**

BC	Tyre		Sidon	
	Year / Mark	Event	Year / Mark	Event
333/2	Thunderbolt	Two Sidon obv. dies used to initiate mintage at Tyre.	1  	First dated Alexander.
332/1	M or ΣΩ	Sidonian engraver at Tyre.	2  	
331/0	o or 	Sidonian engraver at Tarsos.	- Σ	Undated. Σ then ΣI displace  as the Sidon mint mark.
330/29	20 	Dated to the era of Ozmilk.	- ΣI	Undated.
329/8	21 	Sidonian engraver at Arados.	- Ivy leaf, ΣI	Undated.
328/7	22 		- Galley, ΣI	Undated.
327/6	23 		7  ΣI	
326/5	24 		8  ΣI	
325/4	25 		9  ΣI	Zeus with crossed legs.
324/3	26 	Zeus with crossed legs.	10  ΣI	Transition from Phoenician to Greek letter dating.
323/2	27 		K ΣI	Λ (= year 11) unknown.
322/1	28 		11 -	
321/0	29 	Attalos seizes and removes royal treasury at Tyre.	12 M ΣI	
			13 N ΣI	Philip III legend initiated.
320/19	30 		14  ΣI	Philip III legend.
319/8	31 		15 O ΣI	Philip III legend.
318/7	32 		16 Π ΣI	Last Philip III legend.
317/6	33 		17 P ΣI	
316/5	34 		18 Σ ΣI	
315/4	35 		19 T ΣI	
314/3	36 		20 Y ΣI	
313/2	37 		21 Φ ΣI	
312/1	38 		22 X ΣI	Sidon emission of Ptolemy I's coinage dated year 22; Merker (1964):13-14.
311/0	39 		23 Ψ ΣI	
310/9	8 	Dated to the era of Antigonos; Boiy (2000).	24 Ω ΣI	
309/8	9 		1 A M ΣI	New Sidon era; Le Rider (2007): 116.
308/7	10 		2 B M ΣI	
307/6	11 	Last dated issue.	3 Γ M ΣI	
306/5			4 Δ M ΣI	Last dated issue.

*Sidon*

a.



Price 3467  
Newell *Dated Sidon* 8.-, dies -/-  
Same obv. die as Newell *Dated Ake* 1, die I.  
LWHT 131; Münzen Sänn, inventory no.  
4708.

*Tyre*

b.



Price 3238  
Newell *Dated Ake* 1, dies I/α.  
Stack's Coin Galleries (18 Aug. 2009), lot  
4068; Coin Galleries (Feb. 1987), lot 74.

c.



Price 3238 *fulmen* struck off-flan; rev. die  
match to coins b and d. Newell *Dated Ake*  
1, dies I/α.  
CNG eAuction 276 (21 Mar. 2012), lot 92.

d.



Price 3238  
Newell *Dated Ake* 1, dies I/α.  
ANS 1944.100.35278.

e.



Price 3238  
Newell *Dated Ake* 1, dies I/β.  
ANS 1944.100.35279.  
Softly struck.

f.



Price 3238  
Newell *Dated Ake* 1, dies I/γ; pl. V, 9.  
ANS 1944.100.35280.  
Softly struck.

**Figure 1. The newly recognized obverse die link between Sidon and Tyre.**

A similar pattern of increasing die wear is observed on the obverse die that Newell recognized was transferred from Sidon to Tyre (Newell *Dated Sidon* and *Ake* obverse die II; Figure 2). During its use it was paired to many of the same reverse dies as Newell's *Dated Ake* die I, indicating that both obverse dies were used in parallel. The evidence of progressively increasing wear on both of these dies



during their use at Tyre conclusively establishes the direction of transfer of the dies. It is impossible for the first issue of Tyre, bearing a thunderbolt (Price 3238), to have preceded the *aleph* (year 1) issue of Sidon (Price 3467) as was proposed recently in a proposal to amend the chronology of the dated Sidon Alexanders.<sup>18</sup>

### Sidon



Price 3467  
Newell *Dated Sidon* 8, dies II/g, pl.I,12.  
ANS 1944.100.35151.

### Tyre



Price 3238  
Newell *Dated Ake* 1, dies II/a, pl. V, 10.  
ANS 1944.100.35281.



Price 3238  
Newell *Dated Ake* 1, dies II/-.  
CNG webshop inventory no. 828124.

Figure 2. Newell's Sidon die II and Tyre die II.

The identification of die transfers and subsequently an engraver transfer from Sidon to Tyre in 333/2 BC have number of interpretive ramifications. The two tetradrachm dies transferred from Sidon were used to commission an Alexander mint at Tyre<sup>19</sup> where they were used in parallel to strike the first Alexander issue of the city.<sup>20</sup> Closely accompanying these dies was the engraver from Sidon who had cut the second transferred die. At Tyre he cut a further four obverse dies (Newell's *Dated Ake* dies III, IV, V and VI) in his uniquely distinctive style (Figure 3). These were paired to reverse dies bearing Greek mint marks M or ΣΩ (Price 3239-3241; Figure 2a-c),<sup>21</sup> identifying a

<sup>18</sup> A. S. DeShazo pers. comm. (Oct. 2018) and draft papers *The Alexander Type Coinage of Sidon and Two Chronological Coin Sequences at Sidon* and *The Satrapal and Alexander Coinage of Tyre*, Revised published

at <https://independent.academia.edu/AlanDeShazo> (accessed 23 Nov. 2018). Also referred to by Classical Numismatic Group Inc, in commentaries on Sidon and Tyre Alexander auction lots from August 2018 through 2019 e.g. CNG eAuction 440 (20 Mar. 2019), lot 47, <https://www.cngcoins.com/Coin.aspx?CoinID=377787> and CNG eAuction 454, lot 67, <https://www.cngcoins.com/Coin.aspx?CoinID=391190> (accessed 30 Oct. 2019).

<sup>19</sup> Tyre possessed an Achaemenid mint prior to the Macedonian siege. It had a long history, so the transfer of dies and mint workers from Sidon suggests that the resources and facilities of the Achaemenid mint did not survive the siege. Given the historical record of destruction, death and enslavement suffered by the majority of the Tyrian population, it is hardly surprising that resources from Sidon were required to commission a new mint.

<sup>20</sup> Newell (1916): 39 for the reverse die links between the two transferred dies during their use at Tyre.

<sup>21</sup> Newell's *Dated Ake* dies III and IV were used in parallel, as evidenced by a number of reverse die links between them:

period when the mint was under direct Macedonian administration,<sup>22</sup> pending the appointment of a satrap, or a local king. During this period Alexander the Great campaigned through Palestine, into Egypt, returning to Tyre in June 331 BC, before deploying with his army to confront Darius at Gaugamela on 1st October 331 BC; the latter date precisely constrained by a lunar eclipse that preceded the battle.<sup>23</sup>



**Figure 3. Tyre obverse dies III-VI by the Sidonian engraver.**

At this point, after an absence of two years from prior use on the Achaemenid coinage of the city, the Phoenician letter mint mark of Ozmilk **o** (*ayin*), and subsequently **𐤌𐤓** (*ayin-kaph*) appear for the first time on the Alexander coinage of Tyre (Price 3244 and 3248). It appears that the potential confusion of the Phoenician letter *ayin* with the Greek letter *omicron* may have prompted the addition of the Phoenician letter *kaph* to the mark of Ozmilk, thus removing any ambiguity in the identification on the coinage of the king of Tyre.<sup>24</sup> Based on the chronology of the deployment of the Macedonian army from Egypt to Gaugamela, this coinage bearing the mark of Ozmilk must

Newell (1916): 39.

<sup>22</sup> Direct administration in the sense it did not occur via an appointed intermediary in the form of a satrap, or local king.

<sup>23</sup> Arrian *Alexander* 3.7.6-7 in Romm (2009):111; Polcaro et al (2008). Astronomical calculations when combined with the historical record set the precise date of the battle as 11 days after the lunar eclipse of 20 September 331 BC, i.e. 1 October 331 BC.

<sup>24</sup> Similarly, at Sidon where a second letter (I) was added to the Greek letter S, which initially replaced the Phoenician letter *sade* as the mark of the mint at Sidon. Thus, SI served to unambiguously identify the Sidon mint, avoiding any confusion with the later use of the letter S as either a mint control, or a date (year18 at Sidon).

be dated to no earlier than the last months of 332/1 BC, or the following year 331/2 BC. It was struck from Newell's *Dated Ake* obverse dies IV and V, their use carried over from the previous issues bearing Greek letter mint marks (Figure 3d),<sup>25</sup> plus five new obverse dies<sup>26</sup> from a new engraver. This coincides with the transfer of mint authority from an interim Macedonian administration to the administration of Ozmilk on his reappointment by Alexander the Great. On the immediately following issue (Price 3250), the  $\text{ⲓⲟ}$  mint mark is accompanied by a regnal era date in Phoenician numerals (era year 20 = 330/29 BC). This was struck exclusively from obverse dies of a completely different style to those cut by the Sidonian engraver, whose work is no longer found in the mint's output.<sup>27</sup> This issue marks the resumption of the prior Achaemenid practice of the city to date its coinage according to the regnal era of the local king, in this case back dated to the start of Ozmilk's Achaemenid incumbency that commenced in c. 349/8 BC.<sup>28</sup>

The process of displacement of the Greek mint marks by Phoenician letters on the Alexander coinage of Tyre, notably the mark of Ozmilk, then followed by his regnal era date indicates that Ozmilk resumed his kingship of Tyre during Alexander the Great's transit in the city, on route to Gaugamela. Thus, the numismatic evidence clarifies events at Tyre immediately following the Macedonian capture of the city. It indicates that Ozmilk's reappointment to the role of king of Tyre was not made immediately upon the conclusion of the siege of the city. Rather, it appears to have been a matter that Alexander the Great pondered for the following twelve months, during his campaign to take Palestine and Egypt. This is hardly surprising. Ozmilk was the king of Tyre, absent from the city at the time the populace refused access to Alexander the Great. After its capture in July 332 BC, Tyre remained the most significant fortified port on the southern Phoenician coast. At the same time Darius remained on the throne of Persia raising a massive army, while the loyalty to Alexander of the Phoenician component the former Persian navy that had come over to him remained uncertain in the event of a resurgent Darius. Taking time to consider and test the loyalty of Ozmilk would have been an essential precursor to his reappointment to the role of king of Tyre. Certainly, during the interim Macedonian administration of the city, prior to his reappointment, he would have been kept on a 'short leash,' particularly in respect of finances and the establishment and operation of a new Alexander mint.

The mobilization of Sidonian mint resources to Tyre in order to strike coinage in the aftermath of the fall of city indicates a degree of urgency to establish an Alexander mint at Tyre. With at least two months remaining in the Macedonian lunar year of 333/2 BC, the thunderbolt symbol issue of Tyre (Price 3238), struck from the two dies transferred from Sidon, was most probably minted toward the end of that year. The thunderbolt symbol on the first issue of Tyre was manifestly appropriate to the start of the coinage from that city. Alexander the Great envisioned himself as the son of Zeus and it was the denial of his request to worship and sacrifice at the temple of Tyrian Herakles (Melqart) that precipitated the protracted and bloody Macedonian siege of the city.<sup>29</sup> Considered in this context, the thunderbolt of Zeus, his traditional weapon, may have

<sup>25</sup> Only one of the Sidonian engraver's dies, Newell *Dated Ake* die V, saw use in the striking of the tetradrachms marked with the letters *ayin-kaph* (Price 3248).

<sup>26</sup> Newell (1916): 40-42.

<sup>27</sup> Newell (1916): 42-43, and pl. VI, 9 and 11.

<sup>28</sup> Ozmilk's era date year 20 issue coincides with c. 330/29 BC based on the analysis of Elayi (2006): table 2 and Elayi and Elayi (2009): 373-389 and 395. These studies established the start of his reign in the Achaemenid period in c. 349 BC.

<sup>29</sup> Arrian, *Alexander* 2.16.1-2.18.4 in Romm (2010): 82-86.



symbolized Alexander's Herculean triumph over the Tyrians as a divine outcome, an early step in the apotheosis of Alexander.

The transfer of two dies from Sidon early in their productive life indicates that the first Sidon emission dated year 1 (*aleph*) most likely commenced late in the year of 333/2 BC, following the appointment of Abdalonymos as king of Sidon. This was a small emission, indicated by the fact that only one obverse die (Newell's *Dated Sidon* die I) saw out its life in this mintage, while the two other dies from which it was struck were transferred to Tyre after very little use. Therefore, it is unlikely that the mintage at Sidon was initiated to support the siege of Tyre, for the mint's output was little more than that from one obverse die, and thus of very modest quantity during 333/2 BC. The reattribution of a large series of gold staters (Price 3456-3466) from Sidon to Tarsos strengthens the argument,<sup>30</sup> for this removes the major coinage previously attributed to the mint of Sidon during its first year of operation. The proposed start date for the mintage at Sidon in late 333/2 BC, coincident with the conclusion of the siege of Tyre, is consistent with the period of time, possibly up to six months in parallel with the prosecution of the siege at nearby Tyre, that was required to find and formally appoint Abdalonymos, a suitable candidate of royal blood, to become the king of Sidon. It would be a mistake to take literally the entertaining narrative of the appointment of Abdalonymos presented in the ancient sources.<sup>31</sup> It is represented as an almost frivolous decision made promptly on surrender of the city, one to which Alexander the Great gave cursory thought, with moralistic overtones. Though entertaining, this hardly accords with the significance of such an appointment that was to be made during the ongoing hostilities at nearby Tyre, while Darius still remained on the Persian throne and thus a threat to Alexander's enterprise.

The die and engraver transfers from Sidon to Tyre indicate that at the time both mints operated under an overarching Macedonian administrative control, a situation that was to remain unchanged until after the death of Alexander the Great. This is emphasised by the further movement of the Sidonian engraver. He cut four dies in his distinctive style at Tyre, after which his work appears in the coinage of Tarsos (Price 2995-2998; Figure 4) no later than 329 BC.<sup>32</sup> The Sidonian engraver then moved to Arados where he engraved two tetradrachm obverse dies for Price 3304 (Figure 5); Duyrat's *Arados* Group III, Series 2, dies D11-D12<sup>33</sup> dated to c. 328 BC. Duyrat's *Arados* Group III, Series 2 (Price 3304-07) emission has a number of distinctive characteristics that suggest it may be the first Alexander emission from Arados.<sup>34</sup> Plausibly, the Sidonian engraver was called upon to assist in the commissioning of an Alexander mint at Arados, just as occurred at Tyre.

<sup>30</sup> Le Rider (2007):134-139.

<sup>31</sup> Curtius IV, I, 16-26; Justin XI, 10; Diodorus XVII, 46, the latter placing Abdalonymos (Ballonimus) in Tyre, rather than Sidon.

<sup>32</sup> Newell (1918): 72-81, fig. 3 and pl. III, 2-8. At Tarsos the Sidonian engraver cut five obverse dies illustrated on Newell's pl. III, 2-8. Newell dated the Tarsos series based on die counts and an average annual issuance. Based on the evidence of parallel striking, it is conceivable that Price 2995-96 struck from the Sidonian engraver's dies were minted as early 331/0 BC.

<sup>33</sup> Duyrat (2005): 14-15, pl. 1, 33-47. The Sidonian engraver's work at Arados is characterized by a more refined depiction than his earlier efforts, although the uniquely distinctive style and detail remains. After Arados, the work of the Sidonian engraver is no longer found in the corpus of any other Alexander mint in the east.

<sup>34</sup> Price 3304, 3305 and 3307, were struck from the only adjusted dies in the Arados sequence, while Price 3304 and 3307 bear obverse mint controls, M and D respectively. These are the sole examples of the obverse placement of a mint mark in the Arados sequence. Combined with the distinctive styles of the dies, not seen in the subsequent coinage, this suggests that these are the earliest Alexander issues of the mint struck before the operating standards (non-adjusted dies and reverse placement of all mint controls) were established.



Price 2995  
Newell *Tarsos* 6, obv. die XXII, pl. III, 2.  
ANS 1944.100.33518

**Figure 4. A die by the Sidonian engraver at Tarsos.**



Price 3304  
Duyrat, *Arados* Group III, Series 2, dies  
D11-R14.  
ANS 1944.100.34571.

**Figure 5. A die by the Sidonian engraver at Arados.**

The transfer of mint workers across mints under the oversight of different satraps, or local kings, of which Sidonian engraver is but one example,<sup>35</sup> must have been in response to fluctuating demand for coinage in different regions. These transfers between mints imply a central administrative coordination of dispersed mint resources to meet a fluctuating demand for coinage. During Alexander the Great's lifetime, this coordination and allocation of resources must have occurred at a higher administrative level than that of local satrapal administration, only to breakdown in the decade following the settlement at Triparadeisos (321/0 BC) as the Macedonian empire fragmented under the rivalry of his competing successors. Otto Mørkholm astutely observed that under Alexander the Great 'the Phoenician and Cypriot city-states under their local kings retained the management of their mints, although they naturally had to operate within the general regulations laid down by the central [Macedonian] administration.'<sup>36</sup> In the detail of the earliest Alexander coinage from Sidon and Tyre we find some of the first direct evidence in support of this proposition for the existence of an overarching central administration of Alexander's mints during his lifetime.<sup>37</sup>

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<sup>35</sup> Taylor 2020 (in press) for further examples of engraver and die transfers between widely distributed mints during the reign of Alexander the Great.

<sup>36</sup> Mørkholm (1991): 47.

<sup>37</sup> Taylor 2020: die and engraver transfers from Arados to regional mints and other mints as far afield as Asia Minor and Macedonia in the period 327-320 BC strengthen the argument in support of an overarching Macedonian administration of the mints; one standing above the local satrapal administration

<sup>38</sup> <http://numismatics.org/pella/> accessed 18 November 2019.

<sup>39</sup> <https://opendatacommons.org/licenses/odbl/1.0/> accessed 18 November 2019.

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