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A STONE MOULD FROM BIR MESSAOUDA (CARTHAGE)  
FOR BRONZE COINS OF THE SECOND PUNIC WAR  
PRELIMINARY NOTES<sup>1</sup>

During the University of Amsterdam's 2000 campaign at Bir Messaouda, Carthage<sup>2</sup>, a fragment of a bivalve stone mould for Punic bronze coins came to light. It was discovered in trench 7, in part of the 146 BC destruction layer that had been disturbed in Byzantine times (*Fig. 1*)<sup>3</sup>. This is a rare example of an ancient instrument for producing coins. The technical study of the mould is still in progress<sup>4</sup>, and I limit myself here to preliminary numismatic and historical considerations<sup>5</sup>.

<sup>1</sup> This contribution is dedicated to Silvia, who was always curious to know more about coins. She was often sceptical as to what could be learned from bronze coin finds, and always concerned that, in publishing them, we illustrated presentable materials and not 'so schreckliche Korrosionshaufen'. I am convinced she would have appreciated this extraordinary find.

I thank Roald F. Docter, Gent, who directed the 2000–2001 campaign of the University of Amsterdam at Bir Messaouda and entrusted me with the study of the stone-mould and of the coin finds of the Belgio-Tunisian bilateral project at Bir Messaouda in Carthage (2002–2005), which he directed jointly with Boutheina Telmini and Fethi Chelbi. I also thank Michael Amandry, Bibliothèque nationale de France (Paris), Fethi Chelbi, former director of the Musée de Carthage (Tunis) and Elena Latanzi, former Superintendent of Reggio di Calabria for facilitating access to their collections, where I found materials that help to understand the mould, which I present here. The Bibliothèque nationale coins – F.G. 318 (*Fig. 2, 3*) and 329 (note 17) – were analysed by † Jean-Noël Barrandon at the Centre Ernest-Babelon of the Institut de recherches sur les archéomatériaux (IRMAT, CNRS-Université d'Orléans) (ANRC analysis), and the stone mould by Fabien Pilon at the CEA Le Ripault (Monts, France) (XRF analysis). I am also grateful to Roald F. Docter, Paolo Visonà and Clive Stannard, who read and commented on drafts of this paper.

<sup>2</sup> R.F. DOCTER, Carthage Bir Massouda: Excavations by the Universiteit van Amsterdam (UVA) in 2000 and 2001, CEDAC Carthage 21/Juin 2002, pp. 29–33; id., Carthago: opgravingen van de Universiteit van Amsterdam in 2000 en 2001, Tijdschrift voor Mediterrane Archeologie 26, 2002, pp. 43–49.

<sup>3</sup> R.F. DOCTER, Een spectaculair einde: Carthago 246–146 voor Chr., Lampas, Tijdschrift voor Nederlandse Classici 38, 2005, pp. 313–329, esp. pp. 322–323.

<sup>4</sup> The final publication is planned for the Carthage Studies directed by Roald F. Docter.

<sup>5</sup> I presented a paper on 'Coins and their use in the Punic Mediterranean. Case studies from Carthage to Italy (fourth to first century BC)' at the conference entitled 'Identifying the Punic Mediterranean', held at the British School at Rome on 8 November 2008. I here publish the stone mould separately. The rest of my paper will be in the conference proceedings: J. QUINN – N. VELLA, Identifying the Punic Mediterranean, British School at Rome, 6–8 November 2008, Monographs of the British School at Rome (forthcoming).



*Fig. 1* Stone plaque with moulds for casting Carthaginian coins of the SNG Cop. 307–314 type, found in the 2000 campaign of the University of Amsterdam at Bir Messaouda (Carthage).

The mould is of a yellowish limestone. The coin-negatives are disposed in three rows of at least four very shallow circles (*c.* 0.7mm deep), each of a diameter of *c.* 20mm. Six of the twelve negatives are fragmentary. They almost touch each other, and are connected by runnels. At the lower edge of the mould, the casting flues of the middle and right row of coins are clearly visible<sup>6</sup>.

In the central remaining mould, the negatives letters, *aleph* before, and *sade* below the horse, are preserved (*Fig. 2, 1*). This shows that at least this negative served to cast coins similar to SNG Cop. 309–313 (*Fig. 2, 2*)<sup>7</sup>. Other negatives bear no letters, which could mean that the carving of the negatives was not finished when the mould was lost, or thrown away. The latter may be more likely, as the broken edges of the mould are not fresh.

<sup>6</sup> Hans Koens and Roel Janssen, Amsterdam, studying the casting technique, suggest that these flues were part of a 'lost-wax' process, in which, they believe, wax positives were cast, which were then sprued up in trees, and cast in bronze.

<sup>7</sup> G.K. JENKINS, *Sylloge Nummorum Graecorum Copenhagen*, fasc. 42, North Africa: Syrtica – Mauretania (Copenhagen, 1969), hence SNG Cop.



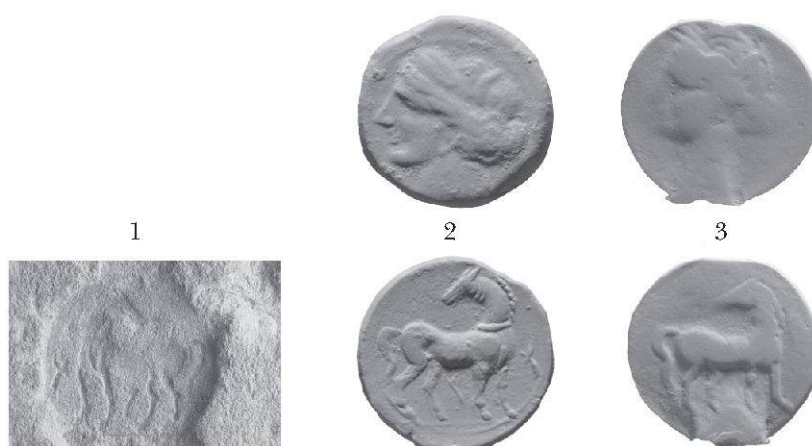


Fig. 2 (1) Detail of an individual coin-negative with letters in negative (*alef* before and *sade* below the horse), as in SNG Cop. 309–313; (2) A struck example of SNG Cop. 309–313; (3) A cast coin of the same type, with no visible letters; the remains of the casting runnel are visible on the reverse below the horse's legs.

Depending on the letters that were cut into the negatives, the types for which the mould could have been intended range from at least SNG Cop. 307 to 314, and possibly to 323. They can be dated by the coins over which they were occasionally struck: *litrai* of the Fifth Syracusan Democracy (Fig. 3, 1)<sup>8</sup>, and Roman *unciae* issued by a Sicilian mint (Fig. 3, 2)<sup>9</sup>, both of the years 214–212 BC, as well as *litrai* of Hieron II of Syracuse (240–215 BC)<sup>10</sup>, which were also overstruck by Roman *sextantes* of 211–209 BC<sup>11</sup>. These overstrikes provide a *terminus post quem* of 214 BC. We can be more precise. The coins overstruck with Punic types that are found in Carthage and nearby came from Sicily, and the overstrikes are rarely found in Italy: they must therefore be part of the booty of Carthage's Sicilian expedition of 213–211 BC<sup>12</sup>. This suggests a slightly later *terminus*, of 213 BC<sup>13</sup>.

<sup>8</sup> Sylloge Nummorum Graecorum. The Royal Collection of Coins and Medals. Danish National Museum. Vol. I: Italy – Sicily (Copenhagen, 1942), no. 891.

<sup>9</sup> RRC, p. 153, no. 42/4.

<sup>10</sup> E. GÀBRICI, La monetazione del bronzo della Sicilia antica (Palermo, 1927), pp. 184–185, nos. 442–489.

<sup>11</sup> RRC, p. 69, no. 69/6. For Carthaginian overstrikes in general, see Ch.A. Hersh, Overstrikes as evidence for the history of Roman Republican coinage, NC 13, 1953, pp. 33–68, esp. 43; and RRC, p. 106 and CMRR, p. 336, though neither RRC nor CMRR list examples of our overstrikes. See however P. Visonà, Carthaginian coinage in perspective, AJN, Second Series 10, 1998, pp. 1–27, esp. pp. 17–18.

<sup>12</sup> Visonà (above, n. 11), p. 17.

<sup>13</sup> For a date in the years around 212–211 BC, and for the mint, see G.K. Jenkins, Some coins of Hannibal's time, BdN 4, Suppl. [Studi per Laura Breglia] 1978, pp. 215–234, esp. pp. 216–217; D. Kienast, Ein punischer Münzfund aus Tunis, SM 15, 1965, pp. 25–29 (a hoard buried between 204 and 201 BC).



Fig. 3 Punic bronze of the Second Punic War struck over coins of 214–212 BC: (1) A *litra* of the Fifth Syracusan Democracy; (2) A Roman *uncia*, from a Sicilian mint.

A second argument derives from a group of coins found at Torre del Mordillo near Cosenza in Calabria, which includes a number of coins of the Second Punic War, among which, two Punic coins produced in Southern Italy (Fig. 4, 1 & 2), and two struck coins of the mould type, one over a Roman *uncia* (Fig. 4, 3 & 4)<sup>14</sup>. At least Fig. 4, 3 is of SNG Cop. 309–313. Although the coins were not found in a sealed stratum, it is almost certain that they were lost during the last of Hannibal's campaigns in Southern Italy, before Scipio invaded North Africa in 204 BC; this gives a clue for the date of the cast Carthaginian coins<sup>15</sup>, which may therefore belong to the latest phase of the war.

Cast coins of this type were until now virtually unknown and have never been discussed, but, on the evidence of this mould, I made the happy discovery, in the trays of the Cabinet des médailles de la Bibliothèque nationale de France in Paris, of a coin of this type, with the typical diagnostic feature of a cast coin, namely the remains of the casting runnel on the reverse, and a sharp border (Fig. 2, 3). The coin is very thin, and weighs only 4.35 g, which is low compared to specimens of the struck type, which weigh between c. 5.1 and 8.6g<sup>16</sup>. The mould and the Bibliothèque nationale coin were both analysed: while no remains of metal were detected in the

<sup>14</sup> O.C. COLBURN, Torre del Mordillo (Cosenza). – Scavi negli anni 1963, 1966 e 1967, NSc 31, 1977, pp. 423–526, esp. p. 526, C 73 (SNG Cop., nos. 370–371); C 74 (SNG Cop., nos. 372–374); C 75 (SNG Cop., nos. 309–313); C 84 (SNG Cop., nos. 307–323 – possibly nos. 317–319, the variant with the palmette standard – struck over RRC, p. 153, no. 42/4). I thank Paolo Visonà, who drew my attention to this group of coins.

<sup>15</sup> One of them (C 73, here Fig. 4, 1) was however found in a context of the Second Punic War, cf. COLBURN (above, n. 14), pp. 456–457. Other coin finds containing Punic types of Southern Italy attest also to Hannibal's campaign, cf. P. VISONÀ, La monetazione annibalica in bronzo nel Bruzio, Klearchos 129–136, 1991–1992, pp. 149–160, esp. pp. 152–153.

<sup>16</sup> KIENAST (above, n. 13), p. 27.



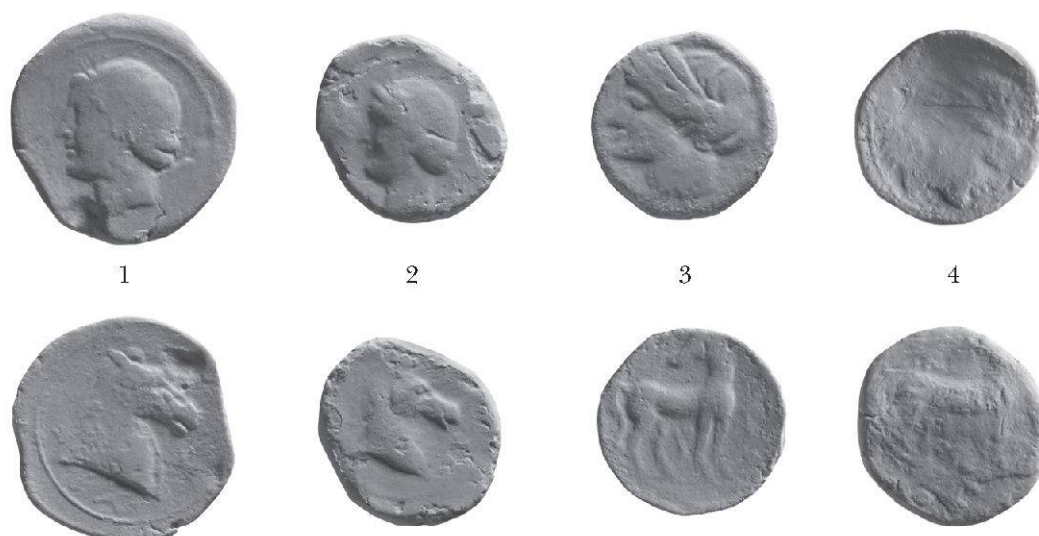


Fig. 4 Punic coins of the Second Punic War, from Torre del Mordillo near Cosenza, Calabria: (1 & 2) Uncertain mint of Southern Italy, unit and half-unit, 215–205 BC; (3 & 4) Carthage, 214–204 BC (no. 4 is struck over a Roman *uncia* of 214–212 BC).

mould, the cast coin has a lead-content of 41%, which is much higher than the c. 9% in a struck coin of the same type<sup>17</sup>. The low weight is undoubtedly a sign of the economic crisis at the end of the war, and the high lead content might also be understandable as an economy, although the alloy may also have been used for technical reasons, as it lowers the melting point and facilitates casting<sup>18</sup>.

There is little evidence for the use and the status of these coins. We also do not know if their production overlapped with or followed the production of struck coins. The only known find containing cast coins is the now dispersed (and probably incomplete) hoard seen in Tunisia in 1976–1977 and subsequently in commerce<sup>19</sup>: it contained 36 struck specimens of the type SNG Cop. 302–325 and four of the type SNG Cop. 326–329(?), as well as ‘8 cast imitations of type with horse r. head reverted [i.e. SNG Cop. 302–325]’.

The find shows that cast and struck SNG Cop. 302–325-type coins circulated and were hoarded together. This suggests that the cast coins were accepted in daily exchanges, and there is no reason, in my view, to consider them

<sup>17</sup> Bibliothèque nationale de France E.G. 318, 10.87g. More analyses will of course be necessary, in order to have a representative series of results that provide a clear picture of the alloy used for the leaded bronze of the type discussed.

<sup>18</sup> See, similarly, S. FREY-KUPPER – J.-N. BARRANDON, *Analisi metallurgiche di monete antiche in bronzo circolanti nella Sicilia occidentale 2003*, in: A. CORRETTI (ed.), *Quarte giornate internazionali di studi sull’area elima* (Erice, 1–4 Dicembre 2000). Atti (Pisa, 2003), pp. 510–511. Lead, a by-product of silver production, was much cheaper than copper or tin.

<sup>19</sup> Coin Hoards IV, p. 16, no. 45. No photographs of the coins are available.

merely as counterfeits. It is probable that they were made by the Carthaginian monetary authorities themselves<sup>20</sup>, in order to supply small coin in the difficult circumstances of the final period of the war against Rome<sup>21</sup>. If this was not the case, and they were produced by private persons, this was probably due to the inability of the state to supply adequate coinage for a still functioning commercial economy. If so, their presence in the hoard shows that they were at least tolerated in circulation, and were probably accepted by the authorities<sup>22</sup>.

<sup>20</sup> The locality where the stone mould was found – Bir Messaouda – may support this presumption. Boutheina Maraoui Telmini, F. Chelbi and Roald F. Docter, whom I thank for this information, suggest that Bir Messaouda is near where the Magonides' Agora was; cf. B. MARAOUI TELMINI – F. CHELBI – R.F. DOCTER, *Les fouilles Tuniso-Belges du Terrain Bir Massouda (2002–2005): contribution à la connaissance de la topographie de Carthage à l'époque archaïque*, in A.-M. ARRUDA (ed.), *Proceedings of the VIth Congress of Phoenician and Punic Studies*, Lisbon, 25 September – 1 October 2005) (forthcoming). The proximity of the find-spot to this public area would fit better with official production than counterfeiting.

<sup>21</sup> Large precious metal denominations were no longer being produced, and the existing stock and new issues of electrum and silver coin were mostly exported to finance the war. The local economy mainly depended on bronze coins, supplemented by some rare and debased issues in precious metal (mainly electrum and billon); see VISONÀ (above, n. 11), pp. 16–19; see also JENKINS (above, n. 13), VISONÀ (above 15) and Paolo Visonà's contribution in this volume.

<sup>22</sup> The following references discuss various aspects of the production and economic role of imitative and unofficial coinages in the ancient world. For the late Republic, see M.H. CRAWFORD, *Unofficial imitations and small change under the Roman Republic*, *AIIN* 29, 1982, pp. 139–164; C. STANNARD – S. FREY-KUPPER, 'Pseudomints' and small change in Italy and Sicily in the Late Republic, *AJN* 20, 2008, pp. 351–404, esp. 381–384; *ED.*, *Les imitations pseudo-Ebusus/Massalia en Italie centrale. Typologie et structure, présence dans les collections et dans les trouvailles de France*, *RN* 166, 2010 (forthcoming). For the later third century AD, see M. PETER, *Imitation und Fälschung in römischer Zeit*, in: A.-F. AUBERSON – H.R. DERSCHKA – S. FREY-KUPPER (eds.), *Fälschungen – Nachahmungen – Imitationen. Sitzungsbericht des vierten internationalen Kolloquiums der Schweizerischen Arbeitsgemeinschaft für Fundmünzen* (Martigny, 3.–4. März 2002) (UNG 5) (Lausanne, 2004), pp. 19–30, esp. pp. 24–28; D.G. WIGG-WOLF, *Zur Interpretation und Bedeutung der „Barbarisierungen“ der römischen Kaiserzeit*, in: *ibid.* (UNG 5) (Lausanne, 2004), pp. 55–75, esp. pp. 72–74.



*Abstract*

A fragment of a bivalve stone coin-mould for Punic bronzes discovered during the 2000 excavations of the Amsterdam University team at Bir Messaouda (Carthage) is presented and discussed. The possible types for which the mould was prepared range from SNG Cop. 307–314, and possibly also 315–323. They include at least coins similar to SNG Cop. 309–313, with *aleph* before, and *sade* below the horse. They date of the latest phase of the second war against Rome, were probably produced to meet the needs of small change in a difficult period, and attest to a still functioning local economy.

A cast coin conserved at the Bibliothèque nationale de France in Paris, and a now dispersed hoard discovered in 1976–1977 in Tunisia that included both struck and cast bronzes of this type, provide further evidence for the existence and use of cast coins produced by moulds of this type.

*Résumé*

La présente contribution commente un fragment de moule en pierre découvert en 2000, lors des fouilles archéologiques de l'Université d'Amsterdam à Bir Messaouda (Carthage). Le moule bivalve a servi au coulage de monnaies puniques en bronze des types SNG Cop. 307–314 et peut-être 315–323, mais en tout cas de pièces similaires à SNG Cop. 309–313 avec *aleph* devant et *sade* sous le cheval. Elles datent de la dernière phase de la deuxième guerre contre Rome et ont probablement été produites pour faire face au besoin en numéraire pendant cette période difficile, témoignant par là même d'une économie locale toujours en fonction.

L'existence et l'usage de monnaies coulées au moyen de moules semblables à celui discuté sont attestés par une pièce conservée à la Bibliothèque nationale de France à Paris ainsi que par un trésor – aujourd'hui dispersé – mis au jour en Tunisie en 1976–1977, et contenant des exemplaires en bronze de ce même type, à la fois frappés et coulés.

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*Key to Figures 1–4:*

*Fig. 1* University of Amsterdam, campaign. 2000, trench 7. Carthage, Musée de Carthage, inv. BM00/7052, 12115; size: 8.63 x 8.08 cm (max.) and 2.23–2.74 cm thick.

*Fig. 2* (1) Detail of the mould in *Fig. 1*, showing the negative of a single coin as SNG Cop. 309–313; (2) SNG Cop. 309–313, struck original. Carthage, Musée de Carthage, 5.34g, 360°; (3) SNG Cop. 307–314 (type, no letters visible), Paris, Bibliothèque nationale de France, cast coin, FG 329, 4.35g, 360°.

*Fig. 3* (1) SNG Cop. 315–316 (type) with *beth* to r. and star above, cf. JENKINS, *BdN* 4, Suppl. [Studi per Laura Breglia] 1978, p. 225, no. B12, struck over SNG Cop. Sicily, no. 891. Paris, Bibliothèque nationale de France, 1979–152, 6.80g, 360°; (2) SNG Cop., 315–316 (type)? with *beth* to r. and no symbol visible above, struck over RRC, p. 153, no. 42/4. Paris, Bibliothèque nationale de France, 1979–149, 5.68g, 360°; both coins belong to a lot of coins (1979–144–152, cf. registre d'entrée, cote 98c) acquired by G. Le Rider in 1979. Most of them, at least 1979–149–152 (all overstrikes), seem to be part of a hoard. They have a similar patina.

*Fig. 4* (1) SNG Cop. 370–371, from Torre del Mordillo. Reggio di Calabria, Museo Regionale, 9.77g, 360°; (2) SNG Cop. 372–374, from Torre del Mordillo. Reggio di Calabria, Museo Regionale, 6.50g, 90°; (3) SNG Cop. 309–313, from Torre del Mordillo. Reggio di Calabria, Museo Regionale, 6.40g, 360°; (4) SNG Cop. 307–323 (possibly 317–319), from Torre del Mordillo, struck over a Roman *uncia* RRC, p. 153, no. 42/4. Reggio di Calabria, Museo Regionale, 3.50g, 360°.